

## ***Riccia subbifurca* Warnst. ex Croz. (Ricciaceae) new to Turkey**

Hatice ÖZENOĞLU KİREMIT\*

*Adnan Menderes University, Faculty of Education, Department of Biology  
Education, 09010, Kepez, Aydın – Turkey*

*(Received 20 November 2009, accepted 31 May 2010)*

**Abstract** – The thalloid liverwort *Riccia subbifurca* Warnst. ex Croz. is reported for the first time from Turkey, bringing the total number of *Riccia* taxa known from Turkey to twenty two. The new hepatic was collected in Bafa Lake Natural Park, from western Turkey.

### ***Riccia subbifurca* / Ricciaceae / Hepaticae / Turkey**

The first record of *Riccia* from Turkey corresponded to *R. bifurca* Hoffm. (Penther & Zederbauer, 1905), and was soon followed by *R. macrocarpa* Levier (Schiffner, 1908). Two further additions were made by Bornmüller in 1931 and Jovet-Ast in 1957 (*R. ciliifera* Link ex Lindenb. and *R. frostii* Austin). Thus, prior to 1960, the total number of the *Riccia* species recorded in Turkey was only four. The contributions by Walther (1967: *R. ciliata* Hoffm., *R. rhenana* Lorb. ex Müll. Frib.; 1970: *R. crystallina* L. emend. Raddi, *R. sorocarpa* Bisch.), Crundwell and Nyholm (1979: *R. bicarinata* Lindb., *R. glauca* L., *R. gougetiana* Durieu et Mont., *R. michelii* Raddi, *R. nigrella* DC.), Jovet-Ast (1986: *R. canaliculata* Hoffm., *R. lamellosa* Raddi), Çetin (1988: *R. papillosa* Moris), Gökler and Öztürk (1991: *R. trabutiana* Steph.) Gökler and Aysel (1998: *R. fluitans* L.), Gökler *et al.* (2000: *R. crozalsii* Levier), Özenoğlu Kiremit and Hugonnot (2010; *R. perennis* Steph.) in the period 1965-2000 raised to 22 the *Riccia* taxa recorded in Turkey.

In the course of a bryological survey of the Bafa Lake Natural Park, the author had the opportunity to find a locality of *Riccia subbifurca*, a species not formerly recorded in any part of the country (Ros *et al.* 2007, Özenoğlu Kiremit & Keçeli, 2009).

TURKEY: Muğla, Milas, Kapikiri Village (Heraklea Antique City), Bafa Lake Natural Park, 37° 30' 13"N; 27° 31' 59"E, 75 m a.s.l., on wet soil in a small streambed; Özenoğlu Kiremit 21.02.2009; Özenoğlu C11/256 (Author's herbarium, Adnan Menderes University). The locality belongs to the grid square C 11 (Fig. 1) according to Henderson's System (1961).

Turkish populations of *Riccia subbifurca* were forming incomplete rosettes, pale green, often purplish on sides, becoming nearly white with age (Fig. 2). Thalli 3-4 furcate, ultimate branches (0.6) 0.7-0.9 mm wide, rounded apically; epidermal cells rounded or pyriform, 46-60 (70) µm wide; spores brown – dark brown, 52-70 µm in diameter.

\* Correspondence and reprints : hatice\_ozenoglu@hotmail.com

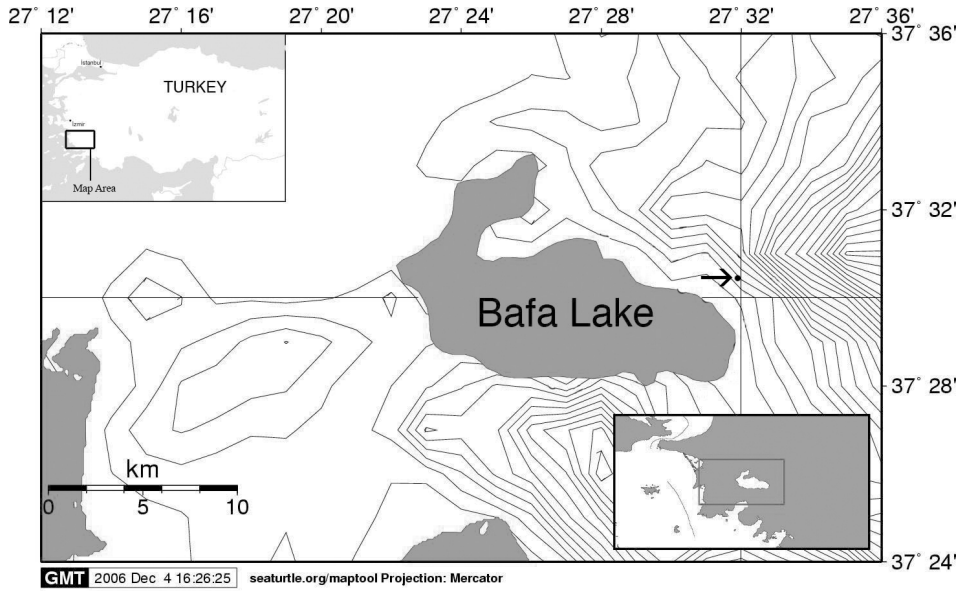


Fig. 1. Map of the study area. The black point indicates the reported locality.

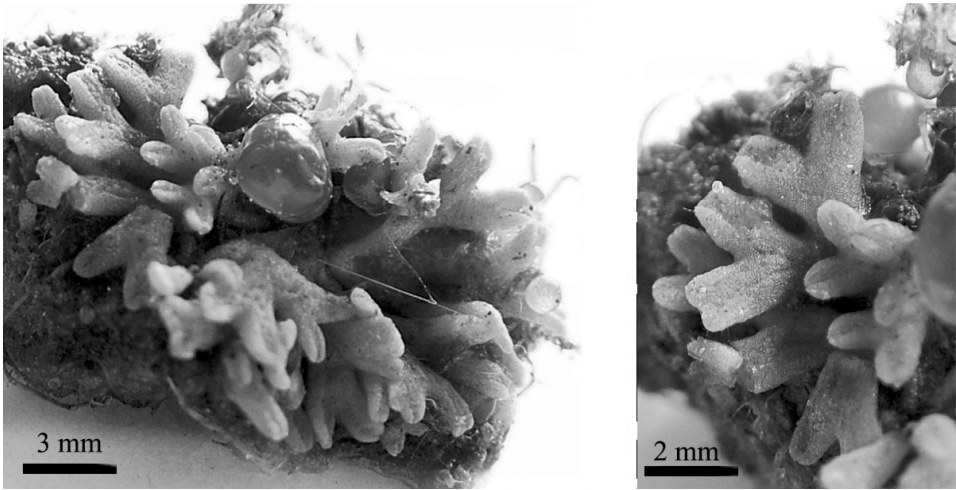


Fig. 2. General view of *Riccia subbifurca*.

*Riccia subbifurca* was found in a small streambed, on wet soil (pH 6.5-7.5) associated with *Corsinia coriandrina* (Spreng.) Lindb., *Gongylanthus ericetorum* (Raddi) Nees, *Lunularia cruciata* (L.) Lindb. and *Phaeoceros laevis* (L.) Prosk.

**Acknowledgements.** The author thanks Vincent Hugonnot for help in the identification of the *Riccia subbifurca*.

## REFERENCES

- BORNMÜLLER J., 1931 — Zur bryophytenflora von Kleinasien. *Magyar botanikai lapok* 30: 1-21.
- CRUNDWELL A.C. & NYHOLM E., 1979 — Some additions to the bryophyte flora of Turkey I. Hepaticae. *Journal of bryology* 10: 479-489.
- ÇETİN B., 1988 — Checklist of the liverworts and hornworts of Turkey. *Lindbergia* 14: 12-14.
- GÖKLER İ. & AYSEL V., 1998 — A new aquatic liverwort for the flora of Turkey. *Turkish journal of botany* 22: 355-357.
- GÖKLER İ., ÖZENOĞLU H. & KİREMİT F., 2000 — A new liverwort for the flora of Turkey. *Turkish journal of botany* 10: 81-83.
- GÖKLER İ. & ÖZTÜRK M., 1991 — Liverworts of Turkey and their position in South-West Asia. *Candollea* 46 (2): 359-366.
- HENDERSON D. M., 1961 — Contributions to the bryophyte flora of Turkey V: summary of present knowledge. *Notes from the Royal botanic garden Edinburgh* 23: 279-303.
- JOVET-AST S., 1957 — *Riccia frostii* Aust. au Sahara et en Turquie. *Revue bryologique et lichénologique* 26: 67-68.
- JOVET-AST S., 1986 — Les *Riccia* de la région méditerranéenne. *Cryptogamie, Bryologie-Lichénologie* 7: 287-431.
- ÖZENOĞLU KİREMİT H. & KEÇELİ T., 2009 — An Annotated Check-List of the Hepaticae and Anthocerotae of Turkey. *Cryptogamie, Bryologie* 30 (3): 343-356.
- PENTHER A. & ZEDERBAUER E., 1905 — Ergebnisse einer naturwissen-schaftlichen reise zum Erdschias-Dagh. *Annalen Naturhistorischen Hofmuseums* 20: 385-388.
- ROS R.M., MAZIMPAKA V., ABOU-SALAMA U., ALEFFI M., BLOCKEEL T.L., BRUGUÉS M., CANO M.J., CROS R.M., DIA M.G., DIRKSE, G.M., EL SAADAWI W., ERDAĞ A., GANEVA A., GONZÁLEZ-MANCEBO J.M., HERRNSTADT I., KHALIL K., KÜRSCHNER H., LANFRANCO E., LOSADA-LIMA A., REFAI M.S., RODRÍGUEZ-NUÑEZ S., SABOVLJEVIĆ M., SÉRGIO C., SHABBARA H., SIM-SIM M., SÖDERSTRÖM L., 2007 — Hepatics and Anthocerotes of the Mediterranean, an annotated checklist. *Cryptogamie, Bryologie* 28 (4): 351-437.
- SCHIFFNER V., 1908 — Beiträge zur kenntnis der bryophyten aus Persien und Lydien. *Österreichische Botanische Zeitschrift* 58: 255-231, 304-318, 341-349.
- WALTHER K., 1967 — Beiträge zur moosflora Westanatoliens I. *Mitteilungem aus dem Staatsinstitut für allgemeine Botanik in Hamburg* 12: 129-186.
- WALTHER K., 1970 — Beiträge zur Moosflora Westanatoliens II. *Mitteilungem aus dem Staatsinstitut für allgemeine Botanik in Hamburg* 13: 168-180.