

1-1-1998

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GÖKLER, İsa and AYSEL, Veysel (1998) "A New Aquatic Liverwort for the Flora of Turkey," *Turkish Journal of Botany*. Vol. 22: No. 5, Article 9. Available at: <https://journals.tubitak.gov.tr/botany/vol22/iss5/9>

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A New Aquatic Liverwort for the Flora of Turkey

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Received: 01.04.1998

Accepted: 24.07.1998

Abstract: One of the aquatic liverworts namely, *Riccia fluitans* L. belonging to the class *Marchantiopsida* (*Hepaticae*) of the division *Bryophyta* is recorded for the first time from Turkey. The species was collected from Lake Kazan near Selçuk in İzmir.

Key Words: Aquatic liverwort, *Riccia fluitans*, *Marchantiopsida*, *Hepaticae*.

Türkiye Florası İçin Yeni Bir Sucul Ciğerotu

Özet: *Bryophyta* divisiosunun *Marchantiopsida* (*Hepaticae*) sınıfında yer almakta olan, sucul ciğerotlarından *Riccia fluitans* L. türü Türkiye'den ilk defa kaydedilmektedir. Bu tür İzmir'in Selçuk İlçesi yakınlarındaki Kazan Gölü'nden toplanmıştır.

Anahtar Sözcükler: Sucul Ciğerotu, *Riccia fluitans*, *Marchantiopsida*, *Hepaticae*.

Introduction

The *Ricciaceae* family, including newly recorded species, is one of the richest families among the Turkish Liverwort Flora. In Turkey it includes two genera *Riccia* L. and *Ricciocarpos* Corda, the former having 16 species and the latter only one (1).

The first recorded species of *Riccia* from Turkey was *R. bifurca* Hoffm. as reported in 1905 by Penther and Zederbauer (2). This was followed by *R. macrocarpa* Levier in 1908 reported by Schiffner (3). The reports of Bornmüller (4) and Jovet-Ast (5) include two new species, one in each. Until the beginning of 1960 the total number of species recorded was 4.

The detailed studies by Jovet-Ast (6), Walther (1, 7), Crundwell (1, 7) and Çetin (7) between 1965 and 1990 increased the number of species to 16 for this genus. Only one species belonging to the *Ricciocarpos* genus [*R. natans* (L.) Corda] was reported in 1989 by Seçmen et al. (8). The new species recorded here reveals the real potential of this rich family in Turkey.

Materials and Methods

Plant specimens were collected from the shallow waters of Lake Kazan near Selçuk-İzmir (Fig. 1). The material was cleaned and brought to the laboratory. Herbarium specimens were prepared from a part of the material in a well lit, ventilated room. These were put in special envelopes. A part of the material was left in 4% formalin and deposited at the Ege University Science Faculty Herbarium (EGE19099). Determinations were carried out using different previously reported lists as well as flora books (1, 6, 9-11).

Results

Riccia fluitans L., Spec. Pl. 1, 1139 (1753).

Ricciella fluitans A. Braun, Flora 4, 757 (1821).

Riccia eudichotoma a *fluitans* Bisch, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 17, 2, 1068 (1835).

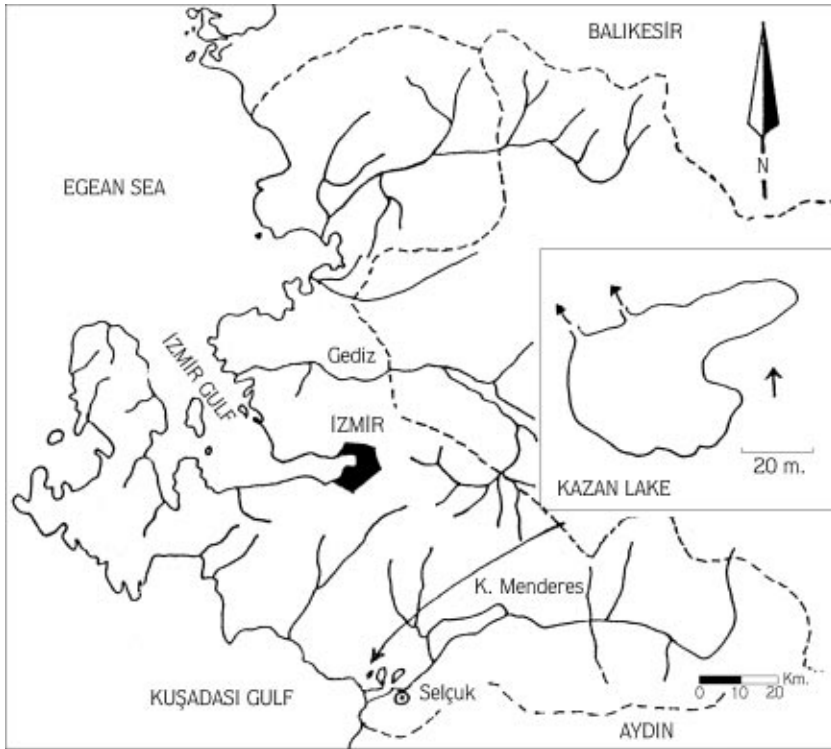


Figure 1. Map showing the study site Kazan Lake.

R. centrifuga H.W. Arnell, Rev., 4, 34 (1877).

R. fluitans L. emend Lorb. ex K. Müll., Hedwigia 80, 93 (1941).

R. media Klingmüller, Flora 146, 622 (1958).

Riccia fluitans occurs in the shallow waters of

productive lakes or ditches, attached to the substratum or is free floating. Light green in colour, the semitransparent thallus is ribbon shaped, up to 4 cm. long, with dichotomously branching lobes (Fig. 2). The upper parts are slightly grooved. The width of the lobes is 0.4-1 mm., the dorsal surface being slightly reticulate towards the

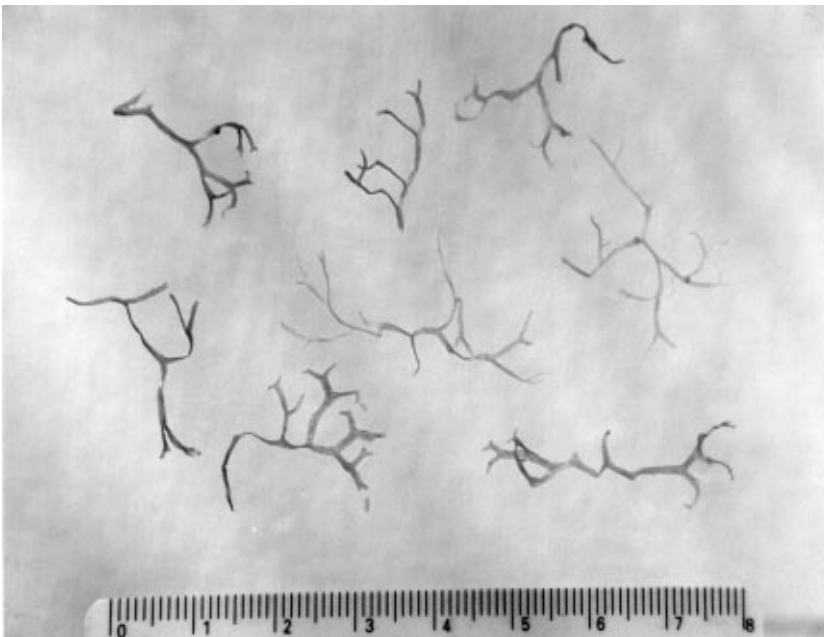


Figure 2. General view of *Riccia fluitans*.

tip, without any channel-shaped structure. Rhizoids are found on the terrestrial forms but not on aquatic ones. The width of thallus is 4-6 times that of its thickness. Transversal sections of the thallus show that there are big aeranchymatic type spaces separated from each other by one layer of cells (Fig. 3). Spore capsules are rarely, being

310-350 μm . wide and spores are 55-70 μm . in size. Chromosome number is $n=8$. It is found all over the world in lakes and ditches rich in nutrients with a neutral acidity ($\text{pH}:\pm 7$); and is a cosmopolite (6). In the Mediterranean region it occurs in Spain, France, Italy, Greece, Israel, Algeria and Morocco (6, 9-11).

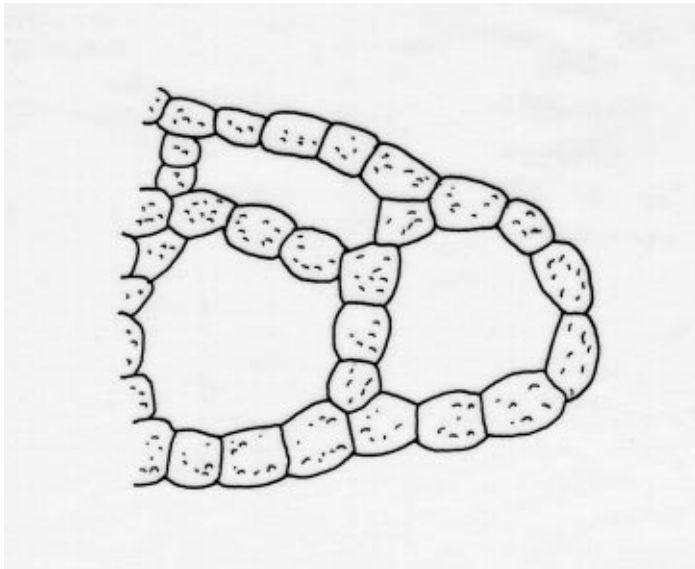


Figure 3. Aeranchymatic type of spaces of the aquatic thallus (x 230).

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