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Research article

The first locality data of the boreal-montane species *Amblyodon dealbatus* (Meesiaceae, Bryophyta) in Türkiye

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Abstract: In this study, the first locality record of *Amblyodon dealbatus* (Hedw.) P.Beauv. collected from the Bolkar Mountains in Türkiye is given. *Amblyodon dealbatus*, which is included in the bryophyte checklists of Türkiye but whose locality in Türkiye are unknown so far, is given with photographs and its ecology and distribution in Türkiye are described in detail.

Keywords: Bolkar Mountains, Bryophytes, Mosses, Türkiye.

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Introduction

The oligotypic moss family Meesiaceae is represented by four genera: *Paludella* Brid., *Amblyodon* P.Beauv., *Meesia* Hedw and *Neomeesia* Deguchi. *Paludella*, *Amblyodon* and *Neomeesia* are monotypic genera. Among them *Neomeesia* is endemic to South America. Only *Meesia* is polytypic and represented by 5-7 species on the world (Ochyra, 1992).

Amblyodon dealbatus (Hedw.) P.Beauv. is a boreal montane species in the Holarctic that is the only species of the family Meesiaceae. It is widely distributed, especially in the boreal zones of Europe and North America, but it is extremely rare in Asia and rare in the Arctic (Ochyra et al., 1992).

Although *A. dealbatus* hes been recorded in the bryophyte checklists of Türkiye (Uyar & Çetin, 2004; Kürschner & Erdağ, 2005), its locality data and distribution Türkiye are still unknown. The first record of the species from Türkiye was given by Uyar and Çetin (2004) in their checklist without locality data. Since then, *A. dealbatus* has not been collected and recorded in Türkiye. With the present study, the first locality record of the species was given from the Bolkar Mountains. Thus, this study will also contribute to the Bryophyte Flora of Türkiye.

Material and Methods

Study area

The Bolkar Mountains, which constitute the eastern parts of the Central Taurus Mountains, are located at the intersection of the Mediterranean and Irano-Turanian phytogeographic regions and are within the C13 grid-square according to Henderson's grid system for Turkish bryophytes (Henderson, 1961) (Figure 1). Covering an area of approximately 1290 km², the highest point of the Bolkar Mountains is Medetsiz Hill with 3524 m. The Bolkar Mountains contains a wide variety of natural habitats. Mixed or pure forests, steppes, lakes, rivers and

small streams are some of them. The microhabitats in the alpine zone of the Bolkar Mountains show great diversity. The reason for this diversity is the interactions between humidity and temperature and bedrock characteristics, which vary especially due to the drying effects of light intensity and wind (Atay et al., 2009).

The Bolkar Mountains, most of which are covered with steppe and rock vegetation types, are lithologically composed largely of permo-carboniferous limestones (Ünaldı & Kömüşcü, 2007). The southern parts of the Bolkar Mountains, which enter the Mediterranean Region, are covered with maqui shrubs and coniferous forests (Kürschner, 1984; Gemici, 1992).

The Bolkar Mountains are also climatically diverse, with a typical Mediterranean climate with low rainfall in the southern parts, while the northern parts are under the influence of the semi-arid-cold Mediterranean climate (Akman, 2011).

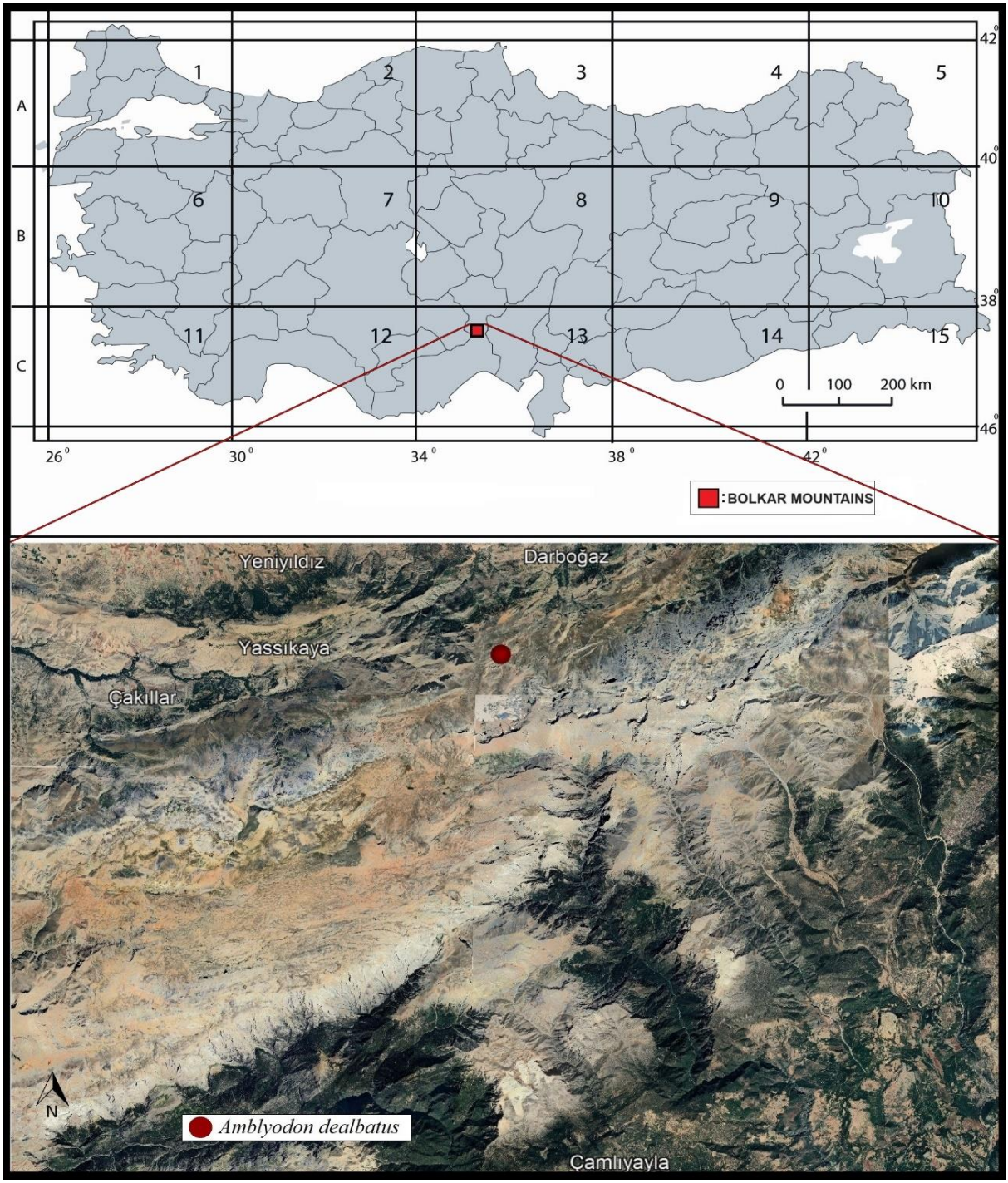

Figure 1. Henderson (1961)'s grid system for Turkish bryophytes and topographic map of the Bolkar Mountains

Data source

The present study is based on specimens collected from the Bolkar Mountains on 25 July 2023 (Fig. 1). Specimens were identified using relevant literature (Ochyra, 1992; Smith 2004; Cortini-Pedrotti, 2001; Vitt, 2014; Lüth, 2019). Voucher specimens stored in the special bryophyte collection of Prof. Dr. Tülay EZER and Niğde Ömer Halisdemir University Herbarium.

Results and Discussions

***Amblyodon dealbatus* (Hedw.) P.Beauv.** Bryologia Europaea 4: 7, 307 (fasc. 10 Monogr. 5. 1). 1841.

Basionym: *Meesia dealbata* Hedw.

Synonym: *Meesia macounii* Austin

Turkish name: Telekli (Erdağ & Kürschner, 2017)

Specimen examined: Türkiye: Central Anatolia: Niğde: Bolkar Mountains, Çataltaş place, slope, on soil at the edge of melting snow water, alt. c. 2730 m, (37° 25' 16" N, 34° 31' 17" E), Ezer 2475, 25 July 2023 (Herbarium of Niğde Ömer Halisdemir University).

Description of the Turkish specimens: Plants up to 2-2.5 cm, lax green tufts, **Leaves** erect to flexuose when dry, erect-patent when moist, oblong, or oblong-lanceolate, acute, 2-4 mm, margins entire, denticulate above. **Costa** strong, wide at the leaf base, ending below the apex. **Laminal cells** pellucid, thin walled, rectangular. **Basal leaf cells** long rectangular, 100-200 µm long and 20-25 µm wide. **Median leaf cells** rectangular, 50-80 µm long, 20-25 µm wide. **Upper leaf cells** short rectangular, lax, smooth. **Setae** thin, 1.5-4.5 cm long. **Capsules** common, asymmetrical, pyriform, curved, 2-3 mm, neck clearly distinct. **Peristome teeth** 400-450 µm long. **Spores** 30-40 µm (Figure 2).

Ecology and distribution: *Amblyodon dealbatus* was growing on soil at the edge of melting snow water at the Bolkar Mountains. It grows with *Distichium capillaceum* (Hedw.) Bruch & Schimp., *Palustriella falcata* (Brid.) Hedenäs, *Cratoneuron filicinum* (Hedw.) Spruce, *Cephaloziella divaricata* (Sm.) Schiffn. and *Lophozia ventricosa* (Dicks.) Dumort.

Amblyodon dealbatus is easily recognized by its capsule shape. The upright or slightly sloping capsules are asymmetrical, and they also have a noticeably long neck. However, the gametophyte can be easily overlooked in the absence of capsules.

The species is distributed in the Europe (S Spain (Sierra Nevada), N Italy and Bulgaria, East to the N Urals), N Africa (Morocco), Asia (Turkey, Iran, Caucasus, Tajikistan, Kazakhstan, W Himalayas, S Siberia and the Arctic Far East), Northern N America and Greenland (Smith, 2004; Blockeel et al., 2014; Kürschner & Frey, 2020; Kürschner & Erdağ, 2021). *Amblyodon dealbatus* is included in the IUCN Red List Category (Europe) as Least Concern (LC) (Hodgetts et al., 2019).

With this study, the first detailed locality record of the *Amblyodon dealbatus* in Türkiye has been given, and it will contribute to the bryophyte flora of Türkiye.

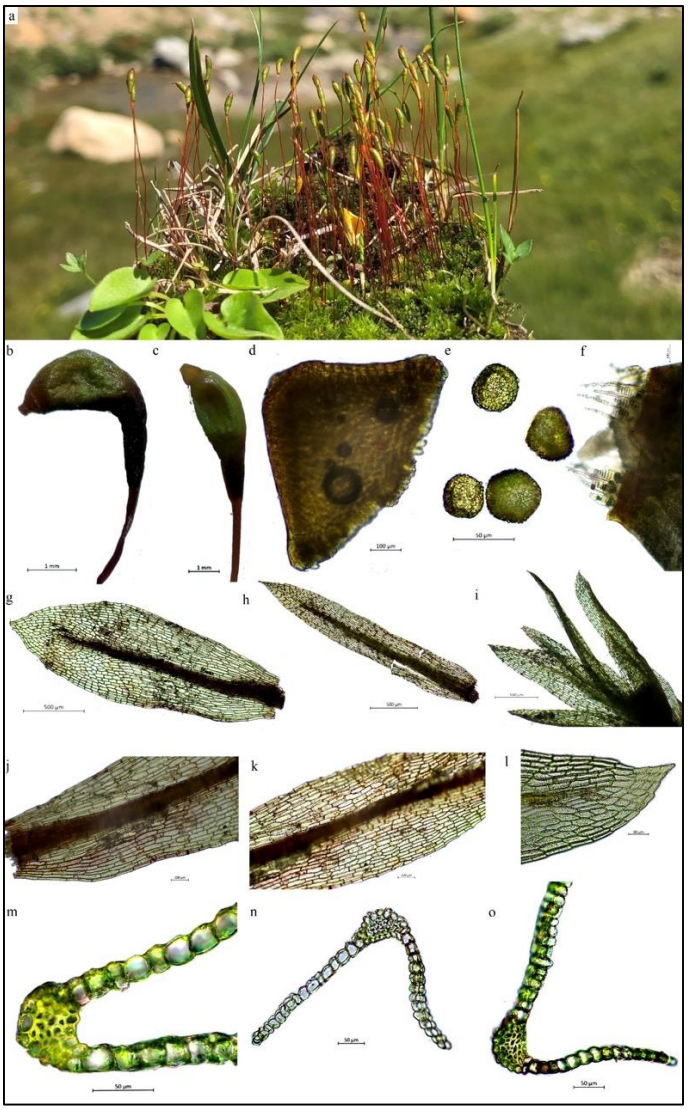

Figure 2. a. Habitus, **b.** capsule (dry), **c.** capsule (wet), **d.** operculum, **e.** spores, **f.** peristome teeth, **g-l.** leaves, **m-o.** cross-sections of the leaves

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Ethical Approval

No need to ethical approval for this study.

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The authors don't declare any fund.

Conflict of Interest

The authors declare that they have no conflict of interest.

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