CHAROPHYTES COLLECTED IN THE SOUTHERN PART OF SARANDË DISTRICT, ALBANIA

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Abstract

Two species of charophytes are reported from Sarandë in Albania, *Chara vulgaris* and *C. corfuensis*, the latter is a new species for Albania and is endemic to the Balkan Peninsula. As the number of species is lower in Albania than in many of the neighboring countries, a survey of brackish and freshwater localities is expected to increase the number of species in the future.

Përmbledhje

Dy specie të harofiteve janë raportuar nga Saranda në Shqipëri, *Chara vulgaris* dhe *C. corfuensis*, kjo e fundit është një specie e re për Shqipërinë dhe është endemike për Gadishullin Ballkanik. Meqënëse numri i llojeve është më i vogël në Shqipëri se në shumë vende fqinje, një vrojtim si në zonat me ujë të njelmët ashtu dhe me ujë të ëmbël pritet që të rritë numrin e specieve në të ardhmen.

Key words: Albania, Sarandë, charophytes, *Chara vulgaris*, *Chara corfuensis.*

Introduction

Sarandë district is in the southernmost part of Albania. Three localities have been visited, two freshwater lakes and one brackish water lake. The localities are listed in Table 1.

The charophyte flora of Albania is still only partly known, as can be seen on the distribution maps in Blaženčić & Blaženčić (2002) and Blaženčić *et al.* (2006a). Filarszky (1931) reports four species of charophytes from Albania. Kashta (1994,1999, 2009, 2013) reports seven species, most from northern and north eastern parts of the country. Blaženčić & Blaženčić (2003) only lists 14 species from Albania, few species compared to the 47 species which have been recorded from the Balkans (Blaženčić & Blaženčić, 2006b).

Material and methods

This work is based on material collected in the localities in Albania on 25 and 26 June 2014. The specific conductivity of the water was measured with a Milwaukee, SM 301 EC meter, range 0-1990 µm/cm and Martini EC 60 Meter, range 0- 20 mS/cm. Calcium and chloride content was measured with Aquamerck test kits. Charophyte nomenclature is in accordance with Krause (1997). Specimens collected are deposited at the Botanical Museum, University of Oslo (Herb. O).

Results

Charophytes were found in three localities which are briefly discussed below.

Table 1. Localities with charophytes in Sarandë. Coordinates, specific conductivity (1 mS=1000µS), calcium, chloride and charophytes found in each locality.

Locality	Coordinates	Conductivity µS/cm (O)	Ca^{2+} mg/l	Cl^- mg/l	Charophytes
1. Vrisera (brook)	39.88825N/ 020.34622E	320	72	-	*Chara vulgaris*
2. Syri i Kaltër	39.92514 N, 020.19293E	540	96	-	*Chara vulgaris*
3. Lake Butrint	39.74518N, 020.05140E	11090	-	3300	*Chara corfuensis* *Chara vulgaris*

Locality 1. VRISERA

Brook with clear, running water and clay bottom. Dense stands with *Chara vulgaris* (figure 1). The specimens were up to 20 cm long and fertile. Coordinates and two ecological parameters are given in Table 1.

Figure 1. *Chara vulgaris* is growing in dense stands on the bottom of the small brook. Photo 25.6.2014

Locality 2. Syri i Kaltër

This is an area with springs and running water. Beside the track up to the famous "Blue Eye" there were several water tanks, no longer used and now filled with vegetation. One of these tanks was filled with *Chara vulgaris* var. *longibracteata* (figure 2), and with *Typha latifolia* and *Angelica sylvestris* along the edges. The specimens were up to 40 cm long and slightly fertile. *Spirogyra* sp. was also found in this locality. Coordinates and two ecological parameters are given in Table 1.

Figure 2. *Chara vulgaris* in dense stand Photo 26.6.2014

Locality 3. Lake Bufit, Butrint

Charophytes were only found in a relatively narrow canal along the road (figure 3) surrounded by broad belts of *Phragmites communis*. The two charophytes found were *Chara corfuensis*, which is a new species to Albania, and *Chara vulgaris*. The charophytes grew in dense mixed stands on the brown sand bottom. In the lake itself I found only filamentous green algae in shallow places.

Figure 3. Part of Lake Bufit. The area where the species were found is marked with black crosses. Photo 26.6.2014

A short description of *Chara corfuensis* (Figure 4)

Specimens were up to 30 cm long. Plants monoecious. Relatively heavily encrusted. They had stipulodes in two tiers (diplostephanous). Cortex 2-3-corticate, diplostichous – isostichous. Spine-cells long, solitary or in pairs (some), up to 3x the stem diameter. Branchlets, some ecorticate or with cortex only on the 1-2 lowest internodes. Bract-cells elongate, verticillate.

Figure 4. *Chara corfuensis*

Discussion/Conclusions

The charophyte flora in Albania is only known in part. According to Blaženčić & Blaženčić (2006b) of the known 47 species of charophytes in the Balkan Peninsula, only 23 are found in Albania. These finds are concentrated in Shkodër district with Lake Shodër (Kashta 1994, 1999, 2009) and the area around Ochrid Lake on the border with Macedonia (Kostic, 1937; Blaženčić & Blaženčić, 2002; Kashta *et al.*, 2013). This can be seen very clearly in figure 1 of Blaženčić & Blaženčić (2006a).

Some of the species found in Albania are endemic to the Balkans (*Chara ochridana*) and some rare, as *Chara hydropitys* and *C. corfuensis*, the last new to Albania and reported in this article. Many of the species found in neighboring countries will probably be found in Albania, but this will require a more systematic survey of the brackish- and fresh water localities of the country.

Acknowledgements

Thanks to professor Henry Mann, Newfoundland, Canada who has corrected the English syntax.

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