REAL CONDITION OF STENOENDEMIC SPECIES *ARISTOLOCHIA MERXMUELLERI* GREUTER ET E. MAYER 1985 AFTER NATO BOMBING IN KOSOVO WAR OF 1999

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Izvleček
V članku je predstavljeno dejansko stanje stenoendemične vrste *Aristolochia merxmuelleri* Greuter & Mayer 1985 ki raste na Kosovu blizu gore Koznik, na levem bregu reke Mirusha (med krajema Llapçeva in Mrasor), na območju, kjer uspevajo grmišča na serpentinski matični podlagi na nadmorskih višinah med 400 in 600 m. Po vojni na Kosovu (1999) se pojavljajo mnenja, da je vrsta *Aristolochia merxmuelleri* zaradi vojne ogrožena na območju Malisheva in Drenice (www.ecology.co.yu/ecology/ebiljke.htm). Raziskava je pokazala dejansko stanje stenoendemične vrste *Aristolochia merxmuelleri* v obdobju med aprilom 2000 in aprilom 2003. Obenem so predstavljeni podatki, ki zanikajo vpliv na vrsto kot NATO ekocid.

Abstract
In this paper is presented the real situation of steno-endemic species *Aristolochia merxmuelleri* Greuter & Mayer 1985. This species is found in Kosovo near Koznik Mountain, on the left side of Mirusha river (between Llapçeva and Mrasor) in lands with bushes, with serpentine base and at altitudes of 400 – 660 m. After the war in Kosovo (1999) there were some opinions that *Aristolochia merxmuelleri* had been threatened by the war in the region of Malisheva and Drenica (www.ecology.co.yu/ecology/ebiljke.htm). Our research represents the real situation of steno-endemic species *Aristolochia merxmuelleri* in the period from April 2000 to April 2003. At the same time here we represent the data which deny the claims of war effects on the species *Aristolochia merxmuelleri* as NATO ecocide.

Ključne besede: *Aristolochia merxmuelleri* Greuter & E. Mayer, stenoendemične vrste
Key words: *Aristolochia merxmuelleri* Greuter & E. Mayer, steno-endemic species, serpentine species

1. INTRODUCTION

The steno-endemic species *Aristolochia merxmuelleri* Greuter et E. Mayer is the species of serpentine, which grows in Kosovo in a very limited area. It can be found at the foot of Koznik Mountain between the localities of Llapçevë and Mrasor, on the left side of the river Mirusha, in bushy places with a rocky serpentine base at altitudes of 400–660 m. It was concluded by Greuter and Mayer in 1985, in the same locality as it has been found nowadays (Mayer & Greuter 1985).

2. METHODS

The research of this *Aristolochia merxmuelleri* species was performed during these three years (April 2000 – April 2003). During the research the common fields methods were used, which are being practiced in floristic research. For determining and verifying of this kind we have relied on the scientific work of Greuter & E. Mayer (1985). Also we have used different floras where the genus *Aristolochia* is described (Paparisto & al. 1988; Tutin & al. 1964; Polunin 1997). In these papers the spe-

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cies of *Aristolochia merxmuelleri* is not described at all. In Rexhepi (1999), the *Aristolochia merxmuelleri* is mentioned in the frame of *Aristolochiaceae* family and there is presented as an endemic plant of Kosovo. While in paper The Endemic Plants of Kosovo (Rexhepi 2000), this *Aristolochia merxmuelleri* species has been described in full detail but without details about the real condition and vitality of this species in thefield. Krasniqi (2003), presents completely the real condition of the species *Aristolochia merxmuelleri,* and describes all the characteristics and its actual condition in the field. In this paper, apart from some already known characteristics, a presentation is given of the actual state of this kind in the field. Herbarizing is done very carefully and according to the standard methods of herbarizing the vascular flora. In general in relation to the *Aristolochia merxmuelleri* species, data from the Internet are used. This determination of coordinates is done by the apparatus GPS 12 (GARMIN'S GPS Personal Navigator 1997), so according to these measures the area is determined and the surface calculation area of *Aristolochia merxmuelleri* species is also given.

3. AREA DESCRIPTION

The area of species *Aristolochia merxmuelleri* is in the region of Mirusha, at the foot of Koznik Mountain, between the localities of Llapçevë and Mrasor. The area has a very small surface. The substratum is rocky serpentine, while vegetation is bushy. In the same localities where this kind grows there are also some species endemic to Balkans or Kosovo, such as: *Aster albanicus* subsp. *albanicus, Centaurea albertii, Centaurea kosaninii, Forsythia europaea, Fumana bonapartei, Genista hassertiana, Halacsya sendtneri, Linum elegans, Malus florentina, Moltkia doerfleri, Polygala doerfleri, Pinguicula hirtiflora, Potentilla visianii, Sanguisorba albanica, Sedum serpentinii, Stipa mayeri* and *Veronica andrasovszkyi.* Within this area there some other species growing, such as: *Prunus mahaleb, Aethionema saxatile, Tulipa scardica, Iris reichenbachii, Euphorbia glabriflora, Salvia ringens* var. *baldacciana, Quercus pubescens, Juniperus oxycedrus* subsp. *oxycedrus, Acer tataricum, Alyssum markgrafi, Cheilanthes maranthae, Asplenium cuneifolium, Pinguicula hirtiflora,* etc.

Figure 1: Distribution map of species Aristolochia merxmuelleri
Slika 1: Karta razširjenosti vrste Aristolochia merxmuelleri

Plants species dominating there include: *Forsythia europaea, Juniperus oxycedrus* subsp. *oxycedrus* and *Quercus pubescens.*

The center area of species *Aristolochia merxmuelleri* is at these coordinates X = 0464387 and Y = 4706324, while the altitude of the area is about 400 – 660 m.

The condition of species *Aristolochia merxmuelleri* in the area where it grows and lives is quite good, the individuals of the kinds prefer to live in groups, around and in bushes.

4. RESULTS

The species *Aristolochia merxmuelleri* are vegetable perennials, geophytes with a round tuber 1–2 cm in diameter. Its underground stalk is thin with rare removable covering layers, non-ramate or ramate. The whole plant is grayish – green; in its lower part almost bared, in the upper part it has rare hairs turned upside down and almost folded.

Figure 2: Region of Mirusha, area between localities of Llapçevë and Mrasor, 15. 05. 2003

Slika 2: Območje Mirusha med krajema Llapçevë in Mrasor, 15. 05. 2003

The leaves in the middle part of the stalk are wide and triangular – like a heart cut at its base, the cut is wide, the lobes of the side leaves sometimes have a renal form, with a thick hair, from the back of the leaf with more distinguished nerves, across bared nerves, while the parts between are nerves covered by strong hairs, the lips with transparent parts. Each flower is settled under the axil of leaves, with very short stems. Perianth is 21–28 mm long, the lower part is dark-gray and is 11–15 mm long, on its base it is narrowed from the top, widened and pressed and wide up to 5 mm, its top is of a yellow – green color and across the nerves dark violet.

It blossoms in April and bears fruits during May – June

It is spread: in Kosovo.

It is spread in Kosovo only in Koznik (at the foot of Koznik Mountain between the localities of Llapçevë and Mrasor) (Rexhepi 2000, Krasniqi 2003).

It is an endemic plant of Kosovo. A German botanist W. Greuter and Slovenian botanist E. Mayer discovered it in 1985 from the collected material in Koznik.

It grows in sandy – stony places near bushes in areas with serpentine geological contains. In Kosovo up to now, it has been concluded only in the region of Mirusha, exactly at the foot of Koznik Mountain, in mountain – bushy vegetation in trowels and hill slopes between Llapçeva and Mrasor, and has a very narrowed area. But even though the area of this species is narrow, its population is in a very good condition. This species can be in danger, or destroyed, if the bushy vegetation from its location is degraded, yet there is no possibility of its being threatened and disappearing as a result of NATO bombing, as is presented in some websites on the Internet (www.ecology.co.yu/ecology/ebiljke.htm).

The *Aristolochia merxmuelleri* species can be threatened only if these spaces are damaged directly by turning them into lands that will be used to produce grains. Then degradation of flora and spontaneous actual vegetation could occur. But the land in the area of *Aristolochia merxmuelleri* species is mostly rocky serpentine and is not of high quality. (Krasniqi 2003).

Figure 3: Species Aristolochia merxmuelleri
Slika 3: Vrsta Aristolochia merxmuelleri

Figure 4: Genista hassertiana, *region of Mirusha between localities of Llapçevë and Mrasor, 15. 05. 2003*

Slika 4: Vrsta Genista hassertiana, *območje Mirusha med krajema Llapçevë in Mrasor, 15. 05. 2003*

Figure 5: Moltkia doerfleri, *region of Mirusha between localities of Llapçevë and Mrasor, 15. 05. 2003*

Slika 5: Vrsta Moltkia doerfleri, *območje Mirusha med krajema Llapçevë in Mrasor, 15. 05. 2003*

5. CONCLUSIONS

- The steno-endemic species *Aristolochia merxmuelleri* can be found in Kosovo, at the foot of the Koznik Mountains (between localities Llapçevë and Mrasor). It grows very near bushes, mainly together with species of *Forsythia europaea* and *Juniperus oxycedrus*. The substratum is rocky serpentine, and the altitude is about 400 – 660 m.
- The species Aristolochia merxmuelleri has a narrow area, but the general state of its population in the area is very good.
- The species Aristolochia merxmuelleri was not threatened during the war in Kosovo, especially not during NATO bombing, because the fighting and bombardment took place very far from the area of Aristolochia merxmuelleri.
- The species Aristolochia merxmuelleri can be threatened only if the soil in its area can be turned into lands that would produce grains. However, no attempts have ben made to do so, because the land where this kind grows is a rocky serpentine substratum, and at present there is no interest in using it for cultivation (Krasniqi, 2003).

6. SUMMARY

This paper includes floristic research and the real condition of steno-endemic species *Aristolochia merxmuelleri* Greuter et E. Mayer. Greuter W. and Mayer E. ascertain this steno – endemic kind at the foot of Koznik Mountains in 1985. The kind nowadays can be found in the same area, and the natural state of its population is very good. In the same localities where it grows can be found other species endemic to the Balkans or Kosovo, such as *Aster albanicus* subsp. *albanicus, Centaurea albertii, Centaurea kosaninii, Forsythia europaea, Fumana bonapartei, Genista hassertiana, Halacsya sendtneri, Linum elegans, Malus florentina, Moltkia doerfleri, Polygala doerfleri, Potentilla visianii, Sanguisorba albanica, Sedum serpentinii, Stipa mayeri* and *Veronica andrasovszkyi.* Within this area and other kinds also grow, e.g.: *Prunus mahaleb, Aethionema saxatile, Tulipa scardica, Iris reichenbachii, Euphorbia glabriflora, Salvia ringens* var. *baldacciana, Quercus pubescens, Juniperus oxycedrus* subsp. *oxycedrus, Acer tataricum, Alyssum markgrafi, Cheilanthes maranthae, Asplenium cuneifolium, Pinguicula hirtiflora* etc.

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