

ISSN 2623-6575

UDK 63

GLASILO FUTURE

PUBLIKACIJA FUTURE - STRUČNO-ZNANSTVENA UDRUGA ZA PROMICANJE ODRŽIVOG RAZVOJA, KULTURE I MEĐUNARODNE SURADNJE, ŠIBENIK



VOLUMEN 4 BROJ 5-6

PROSINAC 2021.

Glasilo Future

Stručno-znanstveni časopis

Nakladnik:

FUTURA



Sjedište udruge: Šibenik

Adresa uredništva:

Bana Josipa Jelačića 13 a, 22000 Šibenik, Hrvatska / Croatia

☎ / 📠: +385 (0) 022 218 133

✉: urednistvo@gazette-future.eu / editors@gazette-future.eu

🌐: www.gazette-future.eu

Uređivački odbor / Editorial Board:
Doc. dr. sc. Boris Dorbić, v. pred. – glavni i odgovorni urednik / *Editor-in-Chief*Emilija Friganović, dipl. ing. preh. teh., v. pred. – zamjenica g. i o. urednika / *Deputy Editor-in-Chief*Ančica Sečan, mag. act. soc. – tehnička urednica / *Technical Editor*Antonia Dorbić, mag. art. – zamjenica tehničke urednice / *Deputy Technical Editor*

Prof. dr. sc. Željko Španjol

Mr. sc. Milivoj Blažević

Vesna Štibrčić, dipl. ing. preh. teh.

Međunarodno uredništvo / International Editorial Board:

Prof. dr. sc. Kiril Bahcevandzjev – Portugalska Republika (Instituto Politécnico de Coimbra)

Prof. dr. sc. Martin Bobinac – Republika Srbija (Šumarski fakultet Beograd)

Prof. dr. sc. Zvezda Bogevska – Republika Sjeverna Makedonija (Fakultet za zemjodjelski nauki i hrana Skopje)

Dario Bognolo, mag. ing. – Republika Hrvatska (Veleučilište u Rijeci)

Prof. dr. sc. Agata Cieszewska – Republika Poljska (Szkoła Główna Gospodarstwa Wiejskiego w Warszawie)

Dr. sc. Bogdan Cvjetković, prof. emeritus – Republika Hrvatska (Agronomski fakultet Zagreb)

Prof. dr. sc. Duška Čurić – Republika Hrvatska (Prehrambeno-biotehnoški fakultet Zagreb)

Prof. dr. sc. Margarita Davitkovska – Republika Sjeverna Makedonija (Fakultet za zemjodjelski nauki i hrana Skopje)

Prof. dr. sc. Dubravka Dujmović Purgar – Republika Hrvatska (Agronomski fakultet Zagreb)

Prof. dr. sc. Josipa Giljanović – Republika Hrvatska (Kemijsko-tehnoški fakultet u Splitu)

Prof. dr. sc. Semina Hadžiabulić – Bosna i Hercegovina (Agromediterranski fakultet Mostar)

Prof. dr. sc. Péter Honfi – Mađarska (Faculty of Horticultural Science Budapest)

Prof. dr. sc. Mladen Ivić – Bosna i Hercegovina (Univerzitet PIM)

Doc. dr. sc. Anna Jakubczak – Republika Poljska (Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy)

Doc. dr. sc. Orhan Jašić – Bosna i Hercegovina (Filozofski fakultet Tuzla)

Prof. dr. sc. Tajana Krička – Republika Hrvatska (Agronomski fakultet Zagreb)

Doc. dr. sc. Dejan Kojić – Bosna i Hercegovina (Univerzitet PIM)

Slobodan Kulić, mag. iur. – Republika Srbija (Srpska ornitološka federacija)

Prof. dr. sc. Biljana Lazović – Crna Gora (Biotehnički fakultet Podgorica)

Prof. dr. sc. Branka Ljevnaić-Mašić – Republika Srbija (Poljoprivredni fakultet Univerziteta u Novom Sadu)

Doc. dr. sc. Zvonimir Marijanović – Republika Hrvatska (Kemijsko-tehnoški fakultet u Splitu)

Doc. dr. sc. Ana Matin – Republika Hrvatska (Agronomski fakultet Zagreb)

Prof. dr. sc. Elizabeta Miskoska-Milevska – Republika Sjeverna Makedonija (Fakultet za zemjodjelski nauki i hrana)

Prof. dr. sc. Bosiljka Mustać – Republika Hrvatska (Sveučilište u Zadru)

Prof. dr. sc. Ayşe Nilgün Atay – Republika Turska (Mehmet Akif Ersoy University – Burdur, Food Agriculture and Livestock School)

Prof. dr. sc. Tatjana Prebeg – Republika Hrvatska (Agronomski fakultet Zagreb)

Prof. dr. sc. Bojan Simovski – Republika Sjeverna Makedonija (Fakultet za šumarski nauki, pejzažna arhitektura i ekoinženjering "Hans Em" Skopje)

Prof. dr. sc. Davor Skejčić – Republika Hrvatska (Građevinski fakultet Zagreb)

Akademik prof. dr. sc. Mirko Smoljić, prof. v. š. – Republika Hrvatska (Sveučilište Sjever, Varaždin/Koprivnica, Odjel ekonomije)

Prof. dr. sc. Nina Šajna – Republika Slovenija (Fakulteta za naravoslovje in matematiko)

Akademik prof. dr. sc. Refik Šećibović – Bosna i Hercegovina (Visoka škola za turizam i menadžment Konjic)

Prof. dr. sc. Andrej Šušek – Republika Slovenija (Fakulteta za kmetijstvo in biosistemske vede Maribor)

Prof. dr. sc. Elma Temim – Bosna i Hercegovina (Agromediterranski fakultet Mostar)

Mr. sc. Merima Toromanović – Bosna i Hercegovina (Biotehnički fakultet Univerziteta u Bihaću)

Prof. dr. sc. Marko Turk – Ruska Federacija (University of Tyumen)

Doc. dr. sc. Ivana Vitasović Kosić – Republika Hrvatska (Agronomski fakultet Zagreb)

Doc. dr. sc. Ana Vujošević – Republika Srbija (Poljoprivredni fakultet Beograd)

Sandra Vuković, mag. ing. – Republika Srbija (Poljoprivredni fakultet Beograd)

Prof. dr. sc. Vesna Židovec – Republika Hrvatska (Agronomski fakultet Zagreb)

Grafika priprema: Ančica Sečan, mag. act. soc.

Objavljeno: 31. prosinca 2021. godine.

Časopis izlazi u elektroničkom izdanju dva puta godišnje, krajem lipnja i prosinca, a predviđena su i dva specijalna izdanja tijekom godine iz biotehničkog područja.

Časopis je besplatan. Rukopisi i recenzije se ne vraćaju i ne honoriraju.

Autori/ce su u potpunosti odgovorni/e za sadržaj, kontakt podatke i točnost engleskog jezika.

Umnožavanje (reproduciranje), stavljanje u promet (distribuiranje), priopćavanje javnosti, stavljanje na raspolaganje javnosti odnosno prerada u bilo kojem obliku nije dopuštena bez pismenog dopuštenja Nakladnika.

Sadržaj objavljen u Glasilu Future može se slobodno koristiti u osobne i obrazovne svrhe uz obvezno navođenje izvora.

Glasilo Future

Stručno-znanstveni časopis

FUTURA – stručno-znanstvena udruga za promicanje održivog razvoja, kulture i međunarodne suradnje, Bana Josipa Jelačića 13 a,
22000 Šibenik, Hrvatska

(2021) 4 (5-6) 01–60

SADRŽAJ:

	Str.
<i>Pregledni rad (scientific review)</i>	
<i>S. Maslo, Š. Šarić</i>	
Remarks on recent distribution of <i>Polygonum albanicum</i> Jáv. in Bosnia and Herzegovina ...	01–09
<i>Stručni rad (professional paper)</i>	
<i>Dubravka Dujmović Purgar, Mila Domljanović, Eleonora Paurić, Lara Stura</i>	
Ukrasna vrijednost invazivnih biljnih vrsta Hrvatske	
Decorative value of invasive plant species in Croatia	10–22
<i>Elma Temim, B. Dorbić, Alisa Hadžiabulić, Sanela Mujčin</i>	
Ožiljavanje reznica indijske lagerstremije (<i>Lagerstroemia indica</i> L.) tretiranjem vrbinom	
vodom, hormonom i vodom	
Rooting cuttings of Indian lagerstroemia (<i>Lagerstroemia indica</i> L.) by treatment with the	
willow water, hormone and water	23–30
<i>Nekategorizirani rad (uncategorised paper)</i>	
<i>S. Kulić</i>	
Popularni rad	
Popular atricle	31–54
<i>E. Delić</i>	
Društvene vijesti i obavijesti	
Social news and announcements	55–58
<i>Upute autorima (instructions to authors)</i>	59–60

Remarks on recent distribution of *Polygonum albanicum* Jáv. in Bosnia and Herzegovina

Semir Maslo^{1*}, Šemso Šarić²

pregledni rad (scientific review)

doi: 10.32779/gf.4.5-6.1

*Citiranje/Citation*³

Abstract

This paper presents a survey of *Polygonum albanicum* in Bosnia and Herzegovina and includes an identification key, distribution data and map of localities in Bosnia and Herzegovina based on a revision of herbarium specimens from SARA, and private collections of the authors, literature data and on field observations. *P. albanicum* is an obligate serpentinophyte. Regarding its distribution, *P. albanicum* is a Balkan endemic species. The paper presents a short morphological description and photographs of the species based mainly on the collected specimens, as well as information on the distribution of the species.

Key words: Balkans, distribution, morphology, *Polygonum albanicum*, serpentine.

Introduction

The genus *Polygonum* L. (Polygonaceae) is mainly a north temperate genus, including about 50 species which are now almost cosmopolitan weeds (Snogerup and Snogerup, 1997). Approximately 20 species of genus *Polygonum* are mentioned in the flora of the Balkans (Uotila, 2017), of which only 4 taxa are recorded for the flora of Bosnia and Herzegovina: *Polygonum albanicum* Jáv., *Polygonum arenarium* subsp. *pulchellum* (Loisel.) Thell., *Polygonum aviculare* L. and *Polygonum bellardii* All. (Beck-Mannagetta, 1906, Ritter-Studnička, 1963). *P. albanicum* was collected for the first time in 1918 by Sándor Jávorka on a botanical journey on serpentine in northern Albania. It was collected as well by Alston and Sandwith in southern Albania in 1933. Outside Albania, the species has been collected on serpentine in Central Bosnia (Krause and Ludwig, 1957). Since that time the species has been recorded in Bosnia and Herzegovina only by Ritter-Studnička (1963, 1970a, 1970b). According to the available data, the species is recorded only at a few localities in Montenegro (Lakušić, 1985),

¹ Primary School, Lundåkerskolan, Gislaved, Sweden.

* E-mail: semmas@edu.gislaved.se

² Jelaške, 71340 Olovo, Bosnia and Herzegovina.

E-mail: semsosumar@gmail.com

³ Maslo, S., Šarić, Š. (2021). Remarks on recent distribution of *Polygonum albanicum* Jáv. in Bosnia and Herzegovina. *Glasilo Future*, 4(5-6), 01–09.

Greece (Akeroyd, 1987; Snogerup and Snogerup, 1997), Albania (Shuka et al., 2008) and Kosovo (Tomović et al., 2014, Mustafa et al., 2015). In the territory of the Republic of Macedonia, this species was reported by Snogerup and Snogerup (1997), but the authors did not specify any concrete locality. According to the same authors, the distribution of this species is inadequately known. This report has of yet not been confirmed by any other author and, therefore, seems somewhat doubtful.

P. albanicum (Figure 1) is a glabrous, grey-green annual plant, branched from base. Stems are few, erect to erecto-patent, slender, angled, 10-50 cm long. Ochreae 3-6 mm, becoming brown at base, scarious and lacerate above, considerably shorter than the internodes. Leaves caduceus, 10-30 mm x 1-3 mm, linear-lanceolate, 1-veined and acute. Inflorescences occupying most of the stem, usually all internodes more than 1cm. Flowers many, on the distal part of the branches, 1-2(-3) in axils of narrow, lanceolate bracts; bracts small, upper ones with very small and not exceeding the flowers. Pedicels 1-2 mm. Perianth segments 1,5-2,0 mm. Perianth segments united for about 1/3 of their length, elliptical, connivent but not overlapping, green with white or pink margins (Figure 1 d.). Nut shortly stipitate, exceeding perianth and visible between the narrow segments (Figure 1 e.) 1,8-2,2 mm, trigonous, dark reddish-brown, dull to somewhat glossy (Akeroyd, 1987, 1993; Snogerup and Snogerup, 1997).

Materials and methods

The study was carried out in recent field studies, analysis of herbarium material deposited at SARA (herbarium acronyms according to Holmgren et al., 1990), as well as literature data. Digital photographs and GPS coordinates were taken in the field. The nomenclature follows the Euro-Med checklist (EURO+MED 2006). The distribution of the species in Bosnia and Herzegovina is shown on the map using standard UTM grid 10x10 km. Localities gathered from literature and herbariums are indicated in black on the map, while confirmed data are indicated in red. A list of all localities representing the distribution of *P. albanicum* in Bosnia and Herzegovina is given in the Appendix 1. For new records, the exact WGS1984 coordinates are given.

Results and discussion

Polygonum albanicum Jáv., in Növ. Közl. 19: 18. 1920. *P. albanicum* belongs to a taxonomically difficult group of annual species, within Section *Polygonum*, characterized by very small bracts that are shorter and narrower than the leaves, and which scarcely exceed the flowers (Akeroyd, 1987). To identify this species, we offer the adjusted key according to Akeroyd (1987, 1993).

1. Perianth pink or white.....*P. arenarium*
1. Perianth green, sometimes with pink or white margins.....2
2. Nuth 3-5 mm, shorter than the perianth.....*P. bellardii*

2. Nuth 1.5 – 3 mm, equalling or slightly exceeding the perianth.....3
3. Flowers sessile, crowded towards the ends of the branches, nut 2 – 3 mm.....*P. patulum*
3. Flowers distinctly pedicellate, not crowded towards the ends of the branches, nut 1.8 – 2.2 mm.....*P. albanicum*

Serpentine areas in Bosnia and Herzegovina exist in small outcrops separated from other geological formations in North Central Bosnia. In eastern Bosnia, serpentines are represented north of the town of Višegrad, in small outcrops on both banks of the Drina River, and are connected to those in western Serbia (Ritter-Studnička, 1963). *P. albanicum* is quite common on the thermophilous rocky serpentine habitats of North Central Bosnia. It is one of 298 Balkan endemic taxa reported in the territory of Bosnia and Herzegovina (Lubarda et al., 2014). This Mediterranean-Submediterranean plant belongs to Balkan obligate serpentine endemic and trans-regional Balkan endemic plants with world distribution range only in Albania, Bosnia, Greece, Kosovo and Montenegro (Stevanović et al., 2003, Tomović et al., 2014).

The occurrence of *P. albanicum* in the flora of Bosnia and Herzegovina was firstly noted by Krause and Ludwig (1957) in the area of Gostović near the town of Zavidovići. Although known from several localities mentioned in older botanical literature (Ritter-Studnička, 1963, 1970a, 1970b), findings of *P. albanicum* in Bosnia and Herzegovina in the last 50 years have been very rare. In the Herbarium of the National Museum of Bosnia and Herzegovina (SARA), fourteen specimens of *P. albanicum* were stored. All specimens were collected by Ritter-Studnička on serpentine substrates in North Central Bosnia between 1957 and 1964 (Appendix 1). The species was recorded in 22 UTM squares 10x10 km, from Banja Luka in the west to Kalesija in the east (Fig. 2). During a floristic research in Central Bosnia in 2016 and 2017 the presence of *P. albanicum* could be confirmed in the 4 UTM squares. The species was found in 12 micro localities in the vicinity of the towns of Banovići, Lukavac, Olovo, Vareš and Zavidovići (Appendix 1). Its altitude range varies here between 330 and 785 m. Some populations were numerous, with high seed production.

According to Ritter-Studnička (1963), the centre of development of the species is in North Central Bosnia, while the sites from Albania, Greece, Kosovo and Montenegro are located on the SE border of the species areal. In addition to the relatively large distribution in Bosnia, its polymorphism in terms of the colour of the perianth and the surface area of the seeds is also supported. The colour of the perianth is white to greenish during bloom, while in some individuals it becomes red at the time of ripening of the fruit. *P. albanicum* was not recorded on the serpentine complex in E Bosnia near Višegrad. It has been replaced here with the related taxon *Polygonum arenarium* subsp. *pulchellum* which belongs to the Pontic chorological group (Ritter-Studnička, 1963).

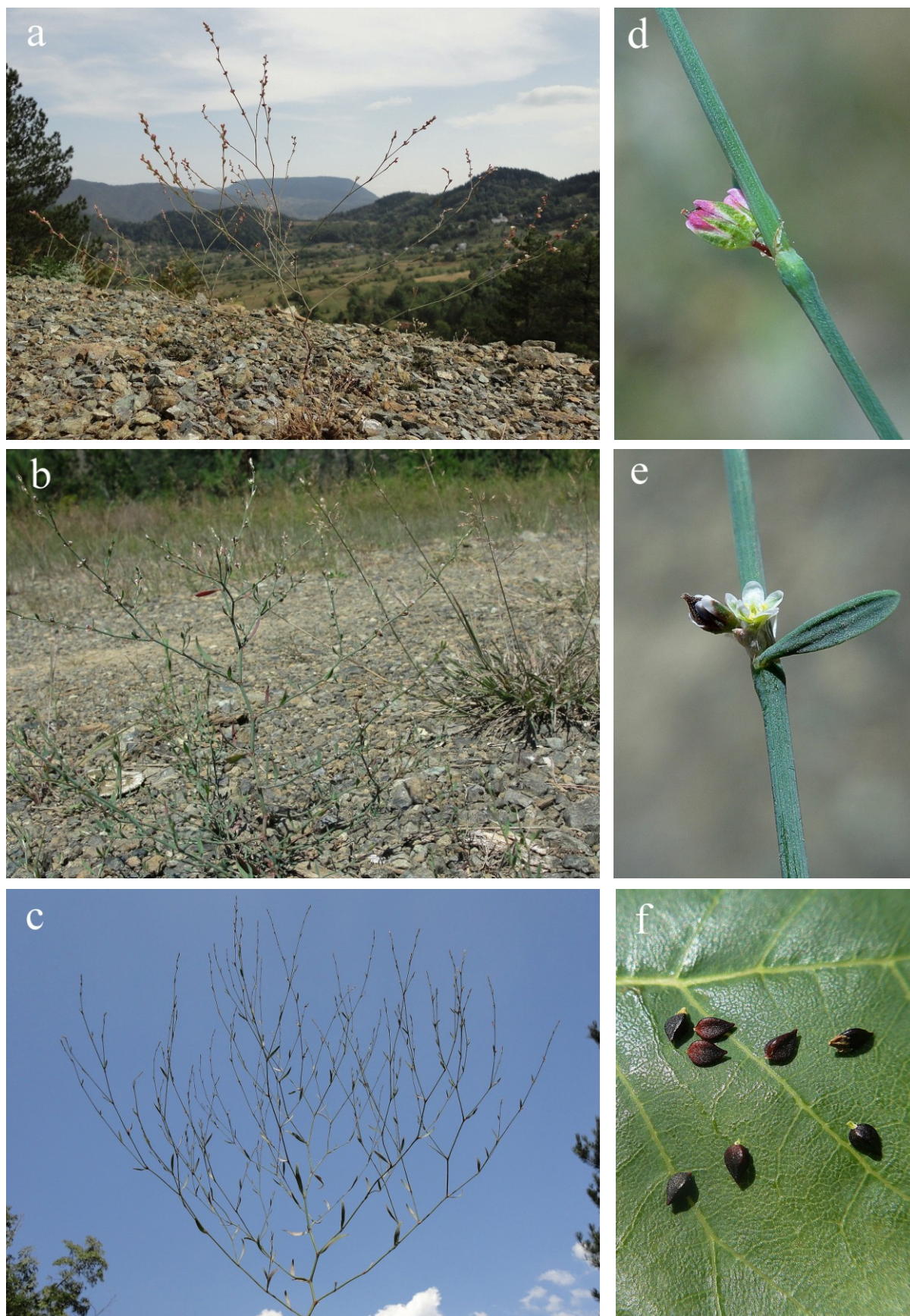


Figure 1. *Polygonum albanicum* in the vicinity of the village Jelaške near Olovo a., b. habitat c. whole plant d. flower e. flower and fruit f. fruit (Photo: Šemso Šarić).

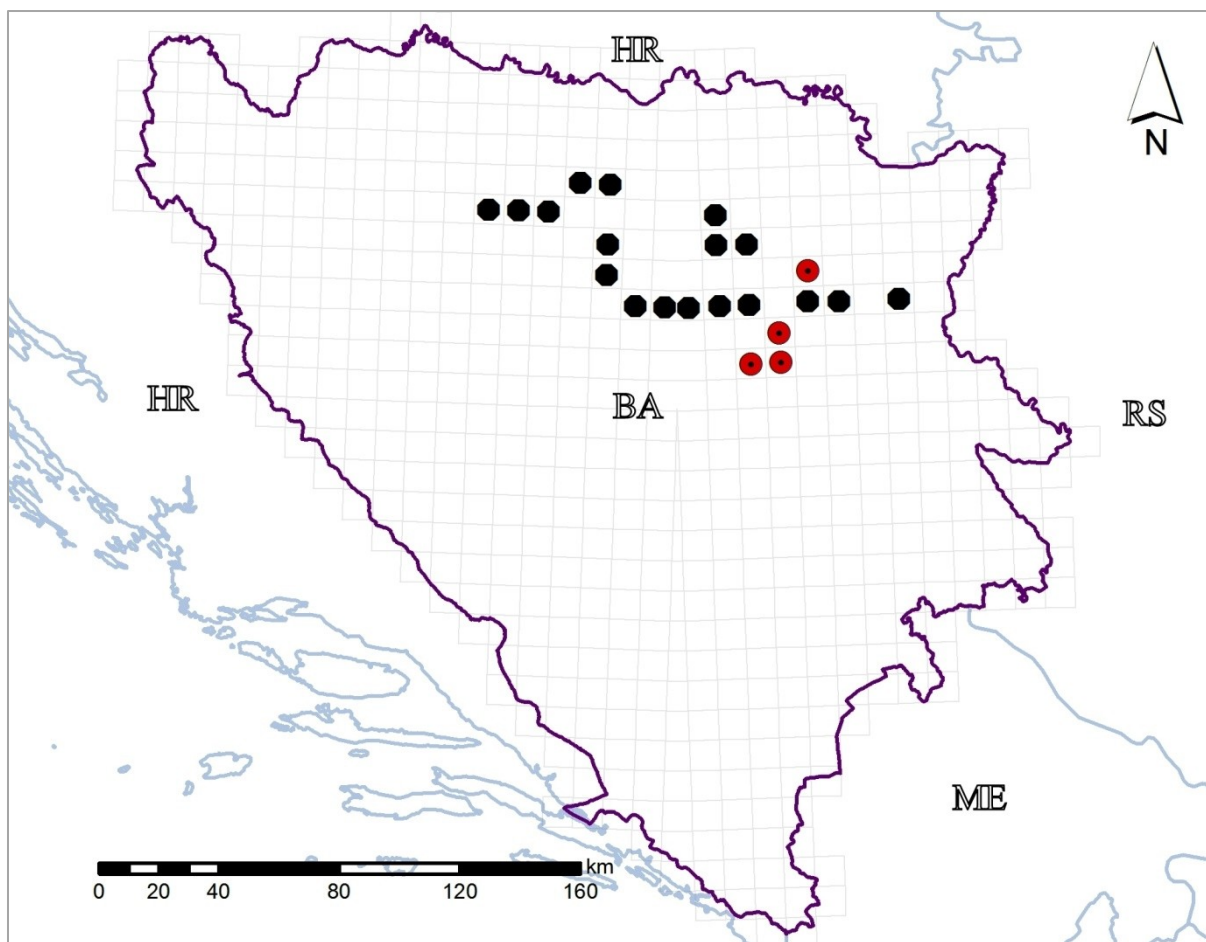


Figure 2. The distribution of *Polygonum albanicum* in Bosnia and Herzegovina where old records are black circles and new records are red circles (the distribution map was made by Aldin Boškailo)

Conclusion

The first record of *P. albanicum* in Bosnia and Herzegovina dates from 1957, when it was discovered in Central Bosnia near the town of Zavidovići. On the territory of Bosnia and Herzegovina, *P. albanicum* only appears on serpentine substrates. According to literature data and herbarium material stored in the Herbarium of the National Museum of Bosnia and Herzegovina (SARA), as our own field study, we could conclude that *P. albanicum* is a widely distributed species on serpentine in Bosnia and Herzegovina. Therefore, this leads to the conclusion that the centre of distribution of this species is actually located in North Central Bosnia and not in Albania as stated in some literature data..

Acknowledgements

We would like to thank Nermina Sarajlić for the help during the studies of the herbarium of SARA, and Aldin Boškailo for the mapping of the distribution of the taxon as well as Lanna Maslo for improving the English of this paper

APPENDIX 1: List of localities of *Polygonum albanicum* Jáv. in Bosnia and Herzegovina

Herbarium material:

Ljubić mountain near Prnjavor (SARA, 49281; coll. RITTER-STUDNIČKA 1964).

Ograjni brook valley near Žepče (SARA, 49282; coll. RITTER-STUDNIČKA 1957).

On track ballast along the railway in village Jošavka near Banja Luka (SARA, 49283; coll. RITTER-STUDNIČKA 1964).

Gostilj near Bosansko Petrovo Selo (SARA, 49284; coll. RITTER-STUDNIČKA 1957).

On serpentine near village Rječica, Maglaj (SARA, 49285; coll. RITTER-STUDNIČKA 1957).

Gostovića brook valley near Otežna (SARA, 49286; coll. RITTER-STUDNIČKA 1963).

On serpentine near Vrbanja, Banja Luka (SARA, 49287; coll. RITTER-STUDNIČKA 1964).

Orlovski Vis near Prnjavor (Kalesija) in Gornje Sprečko polje (SARA, 49288; coll. RITTER-STUDNIČKA 1962).

On serpentine near Maglaj (SARA, 49289; coll. RITTER-STUDNIČKA 1955).

Boljak mountain near Žepče (SARA, 49290; coll. RITTER-STUDNIČKA 1957).

On serpentine near village Sjenina, Doboj (SARA, 49291; coll. RITTER-STUDNIČKA 1962).

On serpentine near village Čečava, Teslić (SARA, 49292; coll. RITTER-STUDNIČKA 1963).

Lišci near Olovo (SARA, 49293; coll. RITTER-STUDNIČKA 1964).

Markovo brdo near Žepče (SARA, 49294; coll. RITTER-STUDNIČKA 1957).

Data from literature:

Borje mountain (RITTER-STUDNIČKA 1963)

Gostović (Zavidovići) (KRAUSE & LUDWIG 1957, RITTER-STUDNIČKA 1963, 1970)

Ljubić (Prnjavor) (RITTER-STUDNIČKA 1963, 1970)

Jošavka , Snjegotina, Čečava , uz prugu B.Luka-Doboj (Teslić) (RITTER-STUDNIČKA 1970)

Vrbanja (kod Čelinca-Banja Luka) (RITTER-STUDNIČKA 1963, 1970)

Pribinić (Teslić) (RITTER-STUDNIČKA 1970)

Grebić i Gostilj kod Suho polja (Doboj) (RITTER-STUDNIČKA 1970)

Kakmuž ((Sprečko polje) (RITTER-STUDNIČKA 1970)

Borova glava, Paklenica, Ravna kosa, Čerkez, Riječice, Rakovac (Maglaj) (RITTER-STUDNIČKA 1970)

Kalesija (RITTER-STUDNIČKA 1970)

Žepče (RITTER-STUDNIČKA 1963, 1970)

Slatina (Teslić) (RITTER-STUDNIČKA 1970)

Vitlaci, Ograjni potok, Boljak, Markovo brdo (Žepče) (RITTER-STUDNIČKA 1970)

Otežna kod Gostovića (Zavidovići) (RITTER-STUDNIČKA 1970)

Svatovac (Lukavac) (RITTER-STUDNIČKA 1970)

Donja Višća i Oskova (Živinice) (RITTER-STUDNIČKA 1970)

Oskova (Banovići) (RITTER-STUDNIČKA 1970)

Maoča (Zavidovići) (RITTER-STUDNIČKA 1970)

Župeljeva (Konjuh) (RITTER-STUDNIČKA 1970)

Duboščica, Careva ćuprija, Ječmište (Vareš) (RITTER-STUDNIČKA 1970)

Curent localities:

Mali Zelemboj, Banovići (44° 21' 58.92" N; 18° 29' 14.38" E; elvation 690 m; coll. ŠARIĆ 2017)

Mala Maoča, Olovo (44° 21' 38.29" N; 18° 26' 41.15" E; elvation 526 m; coll. ŠARIĆ 2017)

Župeljeva, Olovo (44° 17' 15.29" N; 18° 27' 01.35" E; elvation 429 m; coll. ŠARIĆ 2017)

Buk, Olovo (44° 17' 37.3" N; 18° 25' 38.93" E; elvation 399 m; coll. ŠARIĆ 2017)

Miljev Lug, Olovo (44° 16' 39.76" N; 18° 26' 04.89" E; elvation 398 m; coll. ŠARIĆ 2017)

Stipin Han, Zavidovići (44° 19' 05.70" N; 18° 24' 58.93" E; elvation 330 m; coll. ŠARIĆ 2017)

Jelaške, Olovo (44° 17' 13.42" N; 18° 23' 29.18" E; elvation 604 m; coll. ŠARIĆ 2017)

Vojnica, Olovo (44° 15' 22.88" N; 18° 21' 48.17" E; elvation 785 m; coll. ŠARIĆ 2017)

Manjin Vrh, Olovo (44° 02' 32.88" N; 18° 24' 08.76" E; elvation 606 m; coll. ŠARIĆ 2017)

Duboščica, Vareš (44° 14' 27.19" N; 18° 20' 03.64" E; elvation 651 m; coll. ŠARIĆ 2017)

Svatovac, Lukavac (44° 27' 38.42" N; 18° 26' 48.71" E; elvation 358 m; coll. ŠARIĆ 2017)

Svatovac, Lukavac (44° 28' 15.36" N; 18° 26' 51.47" E; elvation 380 m; coll. ŠARIĆ 2017)

References

- Akeroyd, J.R. (1987). Two overlooked species of *Polygonum* from SE Europe. In: Flora Europaea Notulae systematicae ad Floram Europaeam spectantes series 2 no.1 (Editor: Charter, A.O.). *Botanical Journal of the Linnean Society*, 95(4), 251-257.
- Akeroyd, J.R. (1993). *Polygonum* L. In: Tutin, T.G., Burges, N.A., Chater, A.O., Edmondson, J.R., Heywood, V.H., Moore, D.M., Valentine, D.H., Walters, S.M., Webb D. A. (eds.): *Flora europaea* Vol. 1 (2nd ed.). Cambridge: Cambridge University Press, 91-97.
- Alston, A.H.G., Sandwith, N.Y. (1940). Results of two botanical expeditions to S Albania. *Journal of Botany* (London) 78, 232-246.
- Beck-Mannagetta, G. (1906). Flora Bosne, Hercegovine i novopazarskog Sandžaka 2(2). *Glasnik Zemaljskog muzeja u Bosni i Hercegovini* 18(1), 137-150.
- Euro+Med 2006+: Euro+Med PlantBase - the information resource for Euro-Mediterranean plant diversity. - Published at <http://ww2.bgbm.org/EuroPlusMed> (accessed August 2021).
- Holmgren, P.K., Holmgren, N.H., Barnett, L.C. (1990). Index Herbariorum. Part I: the herbaria of the world. 8th edn. *Regnum Vegetabile*, 120, 1-693.
- Jávorka, S. (1921). Uj adatok Albániá florájához (Novitates florae Albanicae). *Botanikai közlemenyek*, 19, 17-29.
- Krause, W., Ludwig, W. (1957). Zur Kenntnis der Flora und Vegetation auf Serpentinstandorten des Balkans. II. Pflanzengesellschaften und Standorte im Gostović-Gebiet (Bosnien). *Flora*, 145, 78-131.
- Lakušić, R. (1985). Novi rod i nove vrste za floru Crne Gore. *Godišnjak Biološkog instituta Univerziteta u Sarajevu*, 38, 73-75.
- Lubarda, B., Stupar, V., Milanović, Đ., Stevanović, V. (2014). Chorological characterization and distribution of the Balkan endemic vascular flora in Bosnia and Herzegovina. *Botanica Serbica*, 38(1), 167-184.
- Mustafa, B., A Hajdari, A., Mala, X., Veselaj, Z., Pulaj, B., Mustafa, N. (2015). The Pashtrik Mountain, a potential protected landscape area. *Biologija*, 61(2), 73-82.
- Ritter-Studnička, H. (1963). Biljni pokrov na serpentinima u Bosni. *Godišnjak Biološkog instituta Univerziteta u Sarajevu*, 16, 91-204.
- Ritter-Studnička, H. (1970a). Die Flora der Serpentinorkommen in Bosnien. *Bibliotheca Botanica*, 130, 1-100.

Ritter-Studnička, H. (1970b). Die Vegetation der Serpentinorkommen in Bosnien. *Vegetatio*, 21(1-3), 75-156.

Shuka, L., Kashta, L., Xhulaj, M. (2008). Evaluation of potential transboundary important plant areas of the North Albania. *Natura Montenegrina*, 7(3), 425-439.

Snogerup, S., Snogerup, B. (1997). *Polygonum* L. In: Strid, A., Tan, K. (eds.), *Flora Hellenica 1*, 77-84.

Stevanović, V., Tan, K., Iatrou, G. (2003). Distribution of the endemic Balkan flora on serpentine I. Obligate serpentine endemics. *Plant Systematics and Evolution*, 242, 149-170.

Tomović, G., Niketić, M., Lakušić, D., Randelović, V., Stevanović, V. (2014). Balkan endemic plants in Central Serbia and Kosovo regions: distribution patterns, ecological characteristics and centres of diversity. *Botanical Journal of the Linnean Society*, 176, 173-202.

Uotila, P. (2017). Polygonaceae. In: Euro+Med Plantbase - the information resource for Euro-Mediterranean plant diversity.

Primljeno: 13. rujna 2021. godine

Received: September 13, 2021

Prihvaćeno: 30. prosinca 2021. godine

Accepted: December 30, 2021