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DISTRIBUTION OF ENDEMIC SPECIES FROM THE EARTHWORM GENUS *SERBIONA* (OLIGOCHAETA, LUMBRICIDAE) IN SERBIA.

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The position of Serbia contributes to the great biodiversity of earthworms on its territory. The abundance of the earthworm fauna of Serbia is a consequence of the diversity of its climatic and edaphic factors (intersection of various zoogeographic regions), as well as of great orogenic changes in the past. These factors have made Serbia, as a central part of the Balkans, an important center of earthworm development.

The aim of this paper is to present a list of earthworm species from the genus *Serbiona* in Serbia on the basis of our own and published data.

The first data on the earthworm fauna of Serbia were provided by Cognetti (1906), Černosvitov (1931, 1938, 1939), Karaman (1972, 1973), Zicsi (1972), Šapkarev (1972, 1975, 1977, 1978, 1980), and Zicsi and Šapkarev (1982). More recently, the earthworm fauna of Serbia has been widely studied (Karaman, 1987; Karaman and Stojanović 1994, 1995, 1996a, 1996b, 2002; Karaman et al. 1998; Stojanović 1989, 1996; Stojanović and Karaman 1993, 2003a, 2003b, 2004, 2005a, 2005b; Šapkarev 2002; Mršić, 1991; Mršić and Šapkarev, 1987).

We carried out extensive investigation during the period of 1995-2005, but the paper also takes into account our data from 1987 to 1995 and result of sporadic investigations before 1987. Data on species were obtained both from the literature and from field work. As far as possible, all published and unpublished data presently known have been included. Field data were collected at more than 120 sites (yielding more than 3200 specimens) in Serbia. Thus, data of several authors were used to complete distribution maps for members of the genus *Serbiona* in the study area.

Our database included information on species identity, locality, collecting date, and number of samples.

Earthworms were collected from various habitats, including natural (river banks, meadows, forest communities, mountain pastures) and cultivated biotopes. Specimens were obtained by digging and hand sorting, as well as by turning over rocks, debris, and logs. Earthworms were killed in 70% ethanol, fixed in 4% formalin solution, and stored in 90% ethanol. Identification of species was done according to Blakemore (2004), Csuzdi and Zicsi (2003), Mršić (1991), and Šapkarev (1978).

The genus *Serbiona* is distributed in the eastern part of the Balkans and on the eastern margin of the Pannonian lowlands. This genus is an archaic group whose center of development must have been situated on the Serbo-Vardarian and Rhodopian tectonic plates. Ten species have been registered in Serbia. All these taxa are endemic (Table 1).

Table 1. Zoogeographic position of the genus *Serbiona* in Serbia.

Species	Zoogeographic position
Serbiona carneluttii (Mršić 1990)	End
Serbiona dofleini (Ude 1922)	EL
Serbiona kosowensis kosowensis (Karaman 1968)	EL
Serbiona kosowensis montenegrina (Šapkarev 1975)	End
Serbiona matjasici (Mršić 1990)	End
Serbiona mehadiensis voivodiensis (Šapkarev 1989)	End
Serbiona mehadiensis mehadiensis (Rosa 1895)	EL
Serbiona paratuleskovi (Šapkarev 1975)	End
Serbiona robusta serbica (Karaman 1983)	End
Serbiona robusta robusta (Rosa 1895)	El
Serbiona serbica (Šapkarev 1977)	End
Serbiona speciosa (Mršić and Šapkarev 1987)	End
Serbiona yugoslavica (Šapkarev 1977)	End

Serbiona dofleini (Ude, 1922), belongs to a large group of endemics (Mršić, 1991). It was discovered in Macedonia (Ude, 1922). During the last 30 years, this species has been recorded from many other localities in Macedonia (Karaman, 1969; Šapkarev, 1974, 1975, 1978), Greece (Zicsi and Michalis, 1981), and Serbia (Zicsi, 1972; Šapkarev, 1980; Karaman and Stojanović, 1994; Karaman and Stojanović, 1996a; Stojanović, 1996). It was recently discovered at several localities in Southern Serbia (Stojanović, 1996; Stojanović and Karaman, 2005a) over an area of around 300 km^2 .

Serbiona kosowensis kosowensis (Karaman, 1968) is also endemic (Mršić, 1991). Until now, *S. kosowensis kosowensis* was known only from a few localities in Kosovo and Metohija (Karaman, 1968; Šapkarev, 1972). It was recently discovered at several localities in Southern Serbia (Šapkarev, 1989; Stojanović, 1996; Karaman and Stojanović, 1996b). In Central Serbia, we found a few individuals at three localities over an area of about 300 km^2.

Serbiona kosowensis montenegrina (Šapkarev, 1975) is endemic species of Southern Serbia and Montenegro. This species was described by Šapkarev (1975) from Montenegro. Stojanović (1996) recently redescribed this species from Southern Serbia. Only one specimen was registered in Montenegro, and the last record on the Balkan Peninsula is more than eight years old.

Serbiona paratuleskovi (Šapkarev, 1975) is an endemic species found in the central part of Serbia (Mršić and Šapkarev, 1987). This species was described by Šapkarev (1975) from Serbia (Raška, Novi Pazar). More recently, Stojanović (1996), Karaman and Stojanović (1996b), and Stojanović and Karaman (2005b) found this species in Central (Kragujevac), Southern (Tutin), and Eastern (Zaječar) Serbia. Zaječar was the last record for *S. paratuleskovi* (only two specimens eight years ago).

Serbiona serbica (Šapkarev, 1977) also an is endemic species found in the central part of Serbia (Mršić and Šapkarev, 1987). It has been recorded in the vicinity of Niš (Šapkarev, 1977) and in Kragujevac (Karaman and Stojanović, 1996b; Stojanović, 1996), where a small number of individuals were found at one or a few localities very close to each other.

Serbiona carneluttii, Serbiona matjasici, Serbiona mehadiensis voivodiensis, *Serbiona speciosa,* and *Serbiona yugoslavica* are scarce and most localized species. They were found relatively recently at one or a few localities very close to each other. These species occupy a very small area, occur in rare habitats, and are known only from the type localities.

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