

UDC 595.44

doi: 10.15330/jpnbio.10.76-86

## TO THE QUESTION ABOUT THE FAUNA OF SPIDERS (ARANEI, ARACHNIDA, ARTHROPODA) OF THREE FAMILIES OF SPIDERS - JUMPING SPIDERS (SALTICIDAE), PIT SPIDERS (ARANEIDAE) AND CRAB SPIDERS (THOMISIDAE) OF THE RESERVE KOZAKOVA DOLYNA

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**Abstract:** For the first time, a study of the spider fauna (Aranei, Arachnida, Arthropoda) of the "Kozakova Dolyna" reserve, which is distinguished by various floral complexes and a peculiar geological structure: these are karst gypsum mountains formed in the Torton epoch of the Neogene period, was conducted. Gypsum mountains of the reserve have numerous caves, rocks, karst craters, which contributes to the diversity of the spider fauna. The spider fauna of the Ukrainian Carpathians and Carpathians (in contrast to many other regions of Ukraine) still remains extremely insufficiently and fragmentarily researched and requires further research. The fauna of spiders of three families was studied: Jumping spiders (Salticidae), Orb-weaver spiders (Araneidae) and Crab spiders (Thomisidae) of three families, which differ in the diversity of species both in the world fauna and in the fauna of Ukraine. The studied collections were collected over a long period of time - from 2002 to 2023 inclusive. Material collection and species identification were carried out in a standard manner. The collected material was stored in 70% ethanol. As a result of research conducted on the territory of the "Kozakova Dolyna" nature reserve and adjacent territories, 40 species of spiders of the three families mentioned above were found. An analysis of the biotope distribution of the detected species was carried out, the faunal affinity of species complexes of spiders was investigated according to the criteria of faunal affinity of Jacquard (S) and Sorensen (KS), and an areological analysis of the detected species was carried out. It was established that the beech forest edge ecotone is the richest in spider species (39 identified species). The ecosystem of the forest floor of the beech forest turned out to be the poorest in terms of species complexes of spiders of the three studied families. A cluster statistical analysis was carried out on the basis of faunal affinity data. The closest species complexes of spiders of the three studied families were the forest edge ecotone of beech forests and steppe areas in the vicinity of the "Kozakova Valley" reserve ( $S = 81.15$ ;  $Ks = 0.899$ ). The ecosystems of the steppe areas and the forest floor of the beech forest turned out to be the least related in terms of spider fauna ( $S = 6.25$ ;  $Ks = 0.118$ ). The most species of spiders with a Holarctic range (10) and a transpalearctic range (9) were found. 5 species have been identified with a European range. No new species for the fauna of Ukraine were found. No endemic species were found.

**Keywords:** fauna, Aranei, Arachnida, Arthropoda

### 1. INTRODUCTION

A study of the spider fauna (Aranei, Arachnida, Arthropoda) of the Kozakova Dolyna nature reserve was conducted. The results of the study of three families of spiders - jumping spiders (Salticidae), pit spiders (Araneidae) and crab spiders (Thomisidae) are presented.

The "Kozakova Dolina" reserve is located on the northern edge of the city of Ivano-Frankivsk and the karst gypsum hills of the Neogene Toron layer with a variety of vegetation, including petrophilic with numerous karst formations (craters, caves, rocks). The hills are overgrown with a mixed forest - partly natural, partly planted (beech, oak, pine, maple, birch, etc.) with forest edges and areas of steppe and petrophilic vegetation. Hills up to 305 m above sea level near the valley of

the Bystrytsia Nadvirnyanska and Bystrytsia rivers. A number of rare species of plants and animals have been found on the territory of the reserve.

Jumping spiders (Salticidae) are the most numerous families of spiders (Aranei). More than 5,800 species of jumping spiders are known in the world fauna. Jumping spiders are an ecologically plastic group of spiders, with complex behavior, a peculiar way of hunting and feeding, high adaptability to different environmental conditions, an original way of moving (jumping) - not typical for other spiders, complex behavior during reproduction. Jumping spiders have mastered various habitats, including numerous ones in grass. Jumping spiders feed on many harmful insect species and control their population, so research on the biodiversity of jumping spiders is important from an ecological point of view [2, 5, 6, 9].

Arachnid spiders (Araneidae, Aranei, Aranida, Arthropoda) are a large and diverse family of spiders, numbering 168 genera and 3,006 modern species known to science in the world fauna. Araneids produce large, wheel-shaped tentacles consisting of a polygonal frame and filaments radiating from the center. The number of radial threads (radii) of the tenets differs in different species: from 14 to 60. The center of the tenets is densely woven with threads forming a central mesh, only araneids from the genus *Meta* make a tenet without a central mesh. The radii are connected by adhesive trap threads arranged in a spiral. A free zone is located between the central mesh and the trap threads, which sometimes (in some species of the genus *Zygiella* and the genus *Meta*) may be absent. Sometimes the trap net has a stabilizer in the form of wide straight or zigzag-shaped white bands that serve to disguise the spider. The coiled webs of spiders of the Araneidae family are woven vertically, but there are horizontal webs (genus *Meta*). Sexual dimorphism is weakly expressed in European species, but significant in tropical species. So, in some species of the genus *Nephia*, the female is 1500 times larger than the male in volume and has 60 times more mass. Adult males of the Araneidae family do not make tenet traps. Mating and copulation takes place on the female's tentacles and is accompanied by the movements of males specific to each species - a kind of "marriage dance". During copulation, the female falls into a stupor, so the male is not in danger of death. Females make cocoons around a clutch of eggs of different structure and different colors, specific for different genera of spiders of the Araneidae family with different numbers of eggs in one cocoon (from 15 to 1000) and show care for the offspring by protecting the cocoon. Species of the Araneidae family are found in a wide variety of ecosystems and environmental conditions [1, 7, 11].

Crab spiders (Thomisidae, Aranei, Aranida, Arthropoda) got their name due to the way they move sideways. Most species are ambush predators - they lie in wait for their victims on flowers or in grass. Only some species occur in the forest floor or on plant remains, they do not make hunting tents. The coloring of crab spiders is extremely diverse. Grass species often have different shades of green, species that hunt flowers have different colors of bright colors, depending on the flowers they choose for the ambush site. The body is covered with silky hairs. Well expressed sexual dimorphism, especially in species from the Thomosinae subfamily. The male mostly has a brighter color, a clearer dorsal pattern of the abdomen and cephalothorax, but reduced sizes. Copulation is accompanied by primitive "nuptial dances" that are specific to each species. Most species are stenochronous and have one copulation period per year - in spring or early summer. Only some species mate in autumn or at the end of summer, some species are diplochronous and have two reproduction periods per year - in spring and at the end of summer. In some species of the genera *Xysticus* and *Philodromus*, females are eurychronous, and males are stenochronous. Only the species *Oxyptila brevipes* (Hahn, 1826) has eurychronic males and females, and mating occurs throughout the summer. After mating, the female begins to make a cocoon - elongated, sometimes open, sometimes suspended on web threads, sometimes in a nest of twisted leaves - depending on the species. Crab spiders catch their prey with the help of long and strong front legs. The main prey is aphids, elephant beetles, dipterans, bugs, bees or even butterflies. More than 170 genera and more than 2000 species of crab spiders are known around the world [3, 4, 7, 8, 10].

The spider fauna of the Carpathian region is insufficiently and fragmentarily studied, although research has a long and rich history. The study of Precarpathian spiders began with the works of Koch L. (1870) [12], Wajgiel L. (1867) [14, 15] and Nowicki M. (1870) [13]. The latest studies of the spiders of Precarpathian are the works of I. M. Bublyk (1981) [1], Woźny M. (1993) [16], A. Ya. Hirnaya (2006) [2, 3, 4, 5], Prokopenko E. V. [11].

## 2. MATERIALS AND METHODS

Collections of spiders (Aranei, Arachnida, Arthropoda), including spiders of the above-mentioned families, collected by various collectors on the territory of the reserve in 2002-2023 were analyzed. The collection was carried out during the warm season every year by a combined method (including "mowing" on the edges of the forests) and stored in 70% ethanol. The identification of species was carried out as described in (V. P. Tyshchenko, 1971). Areas were classified as described according to the now generally accepted approaches of Yemelyanov and Horodkov. Research was conducted in the following biotopes, ecotones, ecosystems:

- A - the edge of a beech forest, grassy;
- B - steppe areas on gypsum hills, grassy;
- C - rocky areas, including the edges of karst gypsum craters;
- D - stony placers - under stones;
- E - beech forest, tree crowns;
- F - shrubs (mainly hawthorn);
- G - forest litter of a beech forest.

## 3. RESULTS AND DISCUSSION

As a result of the research, the following species of spiders of the three studied families were found:

### Families of jumping spiders (Salticidae)

1. *Ballus depressus* (Walckenaer, 1802) – ♀♀♂, on grass, 4 specimens – a species with a European-Iranian-Turanian polyzonal range.
2. *Ballus chalybeius* (Walckenaer, 1802) – ♀♀, on grass, on rock, 2 specimens – a species with a Western Palearctic-Turanian polyzonal range.
3. *Carrhotus bicolor* (Walckenaer, 1802) – ♀, on grass, 1 specimen – a species with a European-Caucasian polyzonal range.
4. *Euophrys frontalis* (Walckenaer, 1802) – ♀♂, on grass, under stones, 2 specimens – a species with a Eurasian polyzonal range.
5. *Euophrys erratica* (Walckenaer, 1825) – ♀, on grass, 1 specimen – a species with a secondary Holarctic (accidentally introduced to North America) polyzonal range.
6. *Evarcha arcuata* (Clerck, 1757) – ♀♀♂♂, on grass, under stones, 5 specimens – a species with a Palearctic-Neotropical polyzonal range.
7. *Evarcha flammata* (Clerck, 1757) – ♀♂, on grass, 2 specimens – a species with a Holarctic polyzonal range.
8. *Marpissa muscosa* (Clerck, 1757) – ♀, on grass, 1 specimen. – a species with a European-Siberian-Asia Minor-Caucasian polyzonal range.
9. *Marpissa radiata* (Grube, 1859) – ♀♀♂♂, on grass, under stones, on rocks, 7 specimens – a species with a European-Siberian polyzonal range.
10. *Neon reticulatus* (Blackwall, 1853) – ♀, on grass, 1 specimen – a species with a Holarctic polyzonal range.

11. *Pseudicius encarpatus* (Walckenaer, 1802) – ♀♀♂♂, on grass, on bushes 9 specimens – a species with a European-Asia Minor-Caucasus-Turanian polyzonal range.
12. *Salticus scenicus* (Clerck, 1757) – ♀♀♂♂, on grass, under stones, on bushes 11 specimens – a species with a Holarctic polyzonal range.
13. *Salticus cingulatus* (Panzer, 1797) – ♀♀♂♂, on grass, 6 specimens – a species with a European-Siberian polyzonal range.
14. *Sibianor aurocinctus* (Ohlert, 1865) – ♀, on grass, 1 specimen – a species with a Eurasian polyzonal range.
15. *Sitticus floricola* (C. L. Koch, 1837) – ♀♀♂♂, on grass, 8 specimens – a species with a European polyzonal range. Accidentally introduced to North America.
16. *Sitticus pubescens* (Fabricius, 1775) – ♀, on grass, 1 specimen – a species with a European polyzonal range. Accidentally introduced to North and South America.
17. *Sitticus terebratus* (Clerck, 1757) – ♀, on grass, 2 specimens – a species with a European-Siberian boreal-montane range.
18. *Sitticus rupicola* (C. L. Koch, 1837) – ♀, on grass, 3 specimens – a species with a European polyzonal range. Accidentally introduced to North America.

#### Families of pit spiders (Araneidae)

19. *Argiope bruennichi* (Scopoli, 1772) - ♀, on grass, 1 specimen – a species with a transpalearctic polyzonal range. Back in the 19th century, it was common only in the Mediterranean, now it has spread throughout the Palearctic.
20. *Araneus quadratus* Clerck, 1757 - ♀♀♂, on grass, 5 specimens. – a species with a transpalearctic polyzonal range.
21. *Araneus circe* (Audouin, 1827) - ♀♀, on grass, on trees, on bushes, on rocks, on stones, 6 specimens – a species with a transpalearctic polyzonal range.
22. *Araneus angulatus* (Clerck, 1757) - ♀♀♂, on grass, on trees, 3 specimens. – a species with a transpalearctic polyzonal range, rare in many regions.
23. *Araneus omoedus* (Thorell, 1870) = *Gibbaranea omoeda* (Thorell, 1870) - ♀♀, on grass, on rocks, 2 specimens – a species with a transpalearctic polyzonal range.
24. *Araneus gibbosus* Walckenaer, 1802 = *Gibbaranea gibbosa* (Walckenaer, 1802) - ♀♀, on bushes, 2 copies. – a species with a European-Asia Minor-Caucasian polyzonal range.
25. *Araneus diadematus* Clerck, 1757 - ♀♀♂♂, on grass, on trees, on rocks, on stones, on bushes, 25 specimens. – a species with a European polyzonal range, accidentally introduced to North America.
26. *Araneus sturmi* (Hahn, 1831) - ♀♀♂, on grass, on trees, on bushes, 7 specimens. – a species with a European-West Siberian polyzonal range.
27. *Aculepeira armida* (Audouin, 1826) - ♀♀♂♂, on grass, 5 specimens. – a species with a transpalearctic polyzonal range.
28. *Aculepeira ceropegia* (Walckenaer, 1802) = *Aculepeira vachoni* (Karol, 1964) - ♀♀♂♂, on grass, 15 specimens. – a species with a transpalearctic polyzonal range.
29. *Cercidia prominens* (Westring, 1851) - ♀, on grass, 1 specimen. – a species with a European-Asia Minor-Kazakhstan polyzonal range. Accidentally introduced to North America.

#### Families of crab spiders (Thomisidae)

30. *Philodromus dispar* Walckenaer, 1826 - ♀♀♂, on grass, on trees, 6 specimens – a species with a Holarctic disjunctive polyzonal range.
31. *Philodromus aureoles* (Clerck, 1757) - ♀♀♂, on grass, on trees, 3 specimens – a species with a European polyzonal range.
32. *Philodromus (Rhysodromus) historio* (Latreille, 1819) = *Philodromus elegans* Blackwall, 1861 - ♀, on grass, 1 copy. – a species with a Holarctic polyzonal range.

33. *Thanatus formicinus* (Clerck, 1757) - ♀, on grass, 1 specimen – a species with a Holarctic polyzonal range.
34. *Thanatus arenarius* (L. Koch, 1873) - ♀, on grass, 1 specimen – a species with a Holarctic polyzonal range.
35. *Tibellus maritimus* (Menge, 1875) - ♀♀, on grass, on aster flowers, 3 specimens – a species with a Holarctic polyzonal range.
36. *Tibellus oblongus* (Walckenaer, 1802) - ♀♀♂, on grass, 5 specimens. – a species with a Holarctic polyzonal range.
37. *Misumena vatia* (Clerck, 1757) - ♀♀♂♂, on grass, on aster flowers, 7 specimens – a species with a Holarctic polyzonal range.
38. *Xysticus bifasciatus* C. L. Koch, 1837 - ♀♀♂♂, on grass, on aster flowers, on the forest floor, on bushes, on rocks, under stones, 8 specimens – a species with a transpalearctic polyzonal range.
39. *Xysticus lanio* C. L. Koch, 1835 - ♀♀♂♂, on grass, on aster flowers, on the forest floor, 5 specimens. – a species with a transpalearctic polyzonal range.
40. *Xysticus luctuosus* (Blackwall, 1836) - ♀♀♂♂, on grass, on the forest floor, 5 specimens – a species with a Holarctic polyzonal range.

A total of 40 species of the above families of spiders were found. Most of the detected species have polyzonal habitats, various variants of Holarctic, Eurasian, and Palearctic habitats. No new species for the fauna of Ukraine were found.

Tab. 1. Biotope-ecotone distribution of detected species of spiders in the conditions of the Kozakova Dolina reserve

№ з/п	Species	Biotores and ecotones						
		A	B	C	D	E	F	G
<b>Salticidae</b>								
1	<i>Ballus depressus</i> (Walckenaer, 1802)	+	+					
2	<i>Ballus chalybeius</i> (Walckenaer, 1802)	+	+	+				
3	<i>Carrhotus bicolor</i> (Walckenaer, 1802)	+						
4	<i>Euophrys frontalis</i> (Walckenaer, 1802)	+	+		+			
5	<i>Euophrys frontalis</i> (Walckenaer, 1802)	+	+		+			
6	<i>Euophrys erratica</i> (Walckenaer, 1825)	+	+					
7	<i>Evarcha flammata</i> (Clerck, 1757)	+						
8	<i>Marpissa muscosa</i> (Clerck, 1757)	+	+					
9	<i>Marpissa radiata</i> (Grube, 1859)	+	+	+	+			
10	<i>Neon reticulatus</i> (Blackwall, 1853)	+						
11	<i>Pseudicius encarpatus</i> (Walckenaer, 1802)	+	+				+	
12	<i>Salticus scenicus</i> (Clerck, 1757)	+	+		+		+	
13	<i>Salticus cingulatus</i> (Panzer, 1797)	+						
14	<i>Sibianor aurocinctus</i> (Ohlert, 1865)	+	+					
15	<i>Sitticus floricola</i> (C. L. Koch, 1837)	+	+					
16	<i>Sitticus pubescens</i> (Fabricius, 1775)	+	+					
17	<i>Sitticus terebratus</i> (Clerck, 1757)	+	+					
18	<i>Sitticus rupicola</i> (C. L. Koch, 1837)	+	+					
<b>Araneidae</b>								
19	<i>Argiope bruennichi</i> (Scopoli, 1772)	+	+					
20	<i>Araneus quadratus</i> Clerck, 1757	+	+					
21	<i>Araneus circe</i> (Audouin, 1827)	+	+	+	+	+	+	
22	<i>Araneus angulatus</i> (Clerck, 1757)	+	+			+		

23	<i>Araneus omoedus</i> (Thorell, 1870)	+	+	+				
24	<i>Araneus gibbosus</i> Walckenaer, 1802						+	
25	<i>Araneus diadematus</i> Clerck, 1757	+	+	+	+	+	+	
26	<i>Araneus sturmi</i> (Hahn, 1831)	+	+			+	+	
27	<i>Aculepeira armida</i> (Audouin, 1826)	+						
28	<i>Aculepeira ceropegia</i> (Walckenaer, 1802)	+	+					
29	<i>Cercidia prominens</i> (Westring, 1851)	+	+					
<b>Thomisidae</b>								
30	<i>Philodromus dispar</i> Walckenaer, 1826	+	+			+		
31	<i>Philodromus aureoles</i> (Clerck, 1757)	+	+					
32	<i>Philodromus historio</i> (Latreille, 1819)	+	+					
33	<i>Thanatus formicinus</i> (Clerck, 1757)	+						
34	<i>Thanatus arenarius</i> (L. Koch, 1873)	+	+					
35	<i>Tibellus maritimus</i> (Menge, 1875)	+	+					
36	<i>Tibellus oblongus</i> (Walckenaer, 1802)	+	+					
37	<i>Misumena vatia</i> (Clerck, 1757)	+	+					
38	<i>Xysticus bifasciatus</i> C. L. Koch, 1837	+	+	+	+	+	+	+
39	<i>Xysticus lanio</i> C. L. Koch, 1835	+	+					+
40	<i>Xysticus luctuosus</i> (Blackwall, 1836)	+						+
Кількість виявлених видів		39	32	6	7	6	7	3

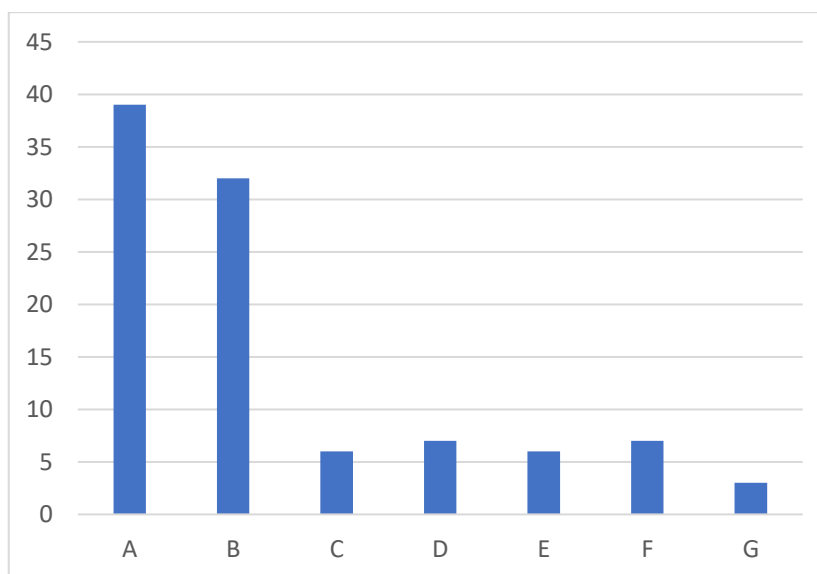


Fig. 1. Biotope-ecotone distribution of detected species of spiders of the Kozakova Dolyna nature reserve. The number of detected species of spiders in different ecosystems is shown. Explanation in the text

The biotopic and ecotonic distribution of the detected species of spiders was as follows. The following species of spiders were found in the following biotopes, ecotones, and ecosystems:

On the edges of the beech forest in the herbage (A) - 39 species.

On the steppe areas in the grassland (B) – 31 species

On rocky areas (C) – 6 species.

Under the stones (D) - 7 types.

Beech forest, crown of trees (E) - 6 species.

Shrubs (F) - 7 species.

Forest litter (G) – 3 types.

The distribution of the detected species by the specified ecosystems is shown in the table. 1 and in fig. 1.

The kinship of spider groups of the three above-mentioned families of the seven studied ecosystems was analyzed. The affinity coefficients are given in the table. 2. Dendrograms of faunal relationships are shown in fig. 2 and 3.

As we can see, the most closely related groups of spiders of the three studied families Salticidae, Araneidae, and Thomisidae in the conditions of the Kozakova Valley reserve are the grassy ecosystems of the edges of the beech forest and the grassy steppe areas of the gypsum hills ( $S = 81.15$ ;  $K_s = 0.899$ ), the least related are ecosystem of grassy forest edge of beech forest and forest litter of beech forest ( $S = 7.89$ ;  $K_s = 0.146$ ).

Tab. 2. Relatedness of groups of spiders of the Salticidae, Araneidae, and Thomisidae families of different ecotones and ecosystems of the Kozakova Dolyna reserve, Jaccard (%) (S) (upper right) and Sørensen (Ks) (lower left) faunistic relatedness coefficients are given. Euclidean distances, conventional units

	A	B	C	D	E	F	G
A	-	81,15	15,79	18,42	15,79	15,38	7,89
B	0,899	-	19,35	22,58	19,35	18,75	6,25
C	0,273	0,324	-	44,44	33,33	30,00	12,50
D	0,311	0,368	0,616	-	30,00	40,00	11,11
E	0,273	0,324	0,500	0,462	-	44,44	12,50
F	0,267	0,316	0,462	0,571	0,571	-	11,11
G	0,146	0,118	0,222	0,200	0,222	0,200	-

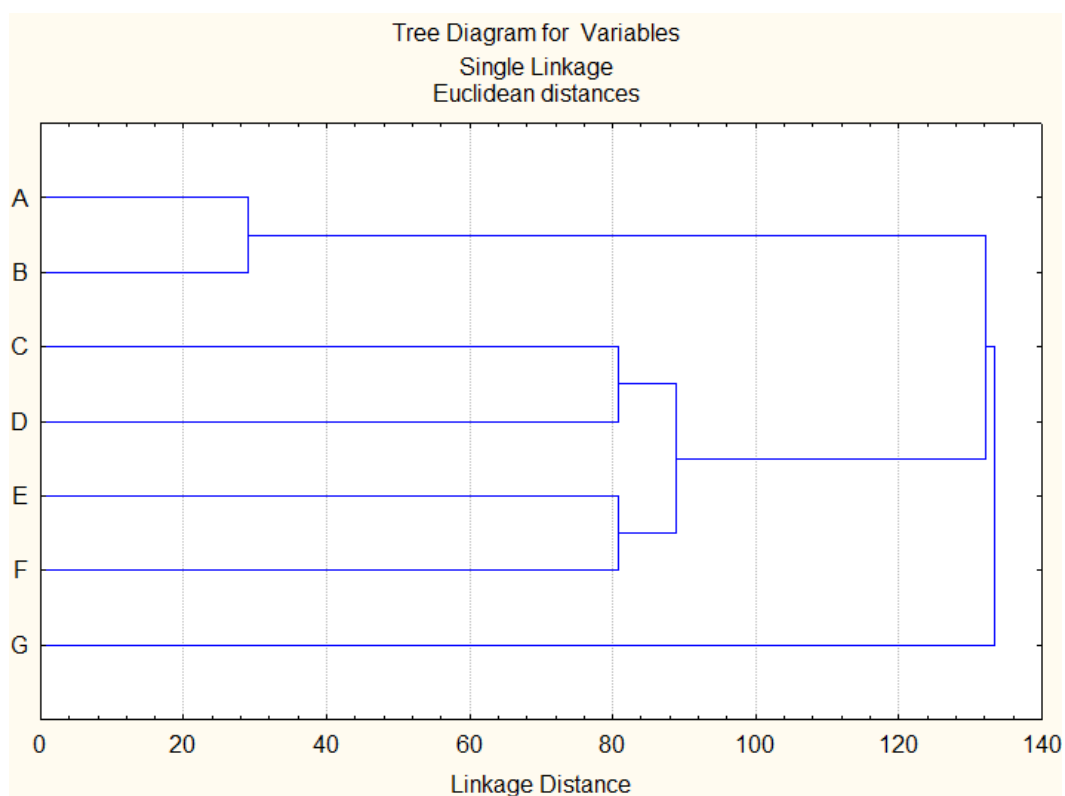


Fig. 2. Dendrogram of affinities of groups of spiders of the Salticidae, Araneidae, and Thomisidae families of different ecotones and ecosystems of the Kozakova Dolyna nature reserve built on the basis of the Jaccard coefficient (%). Designation of ecotones and ecosystems in the text.

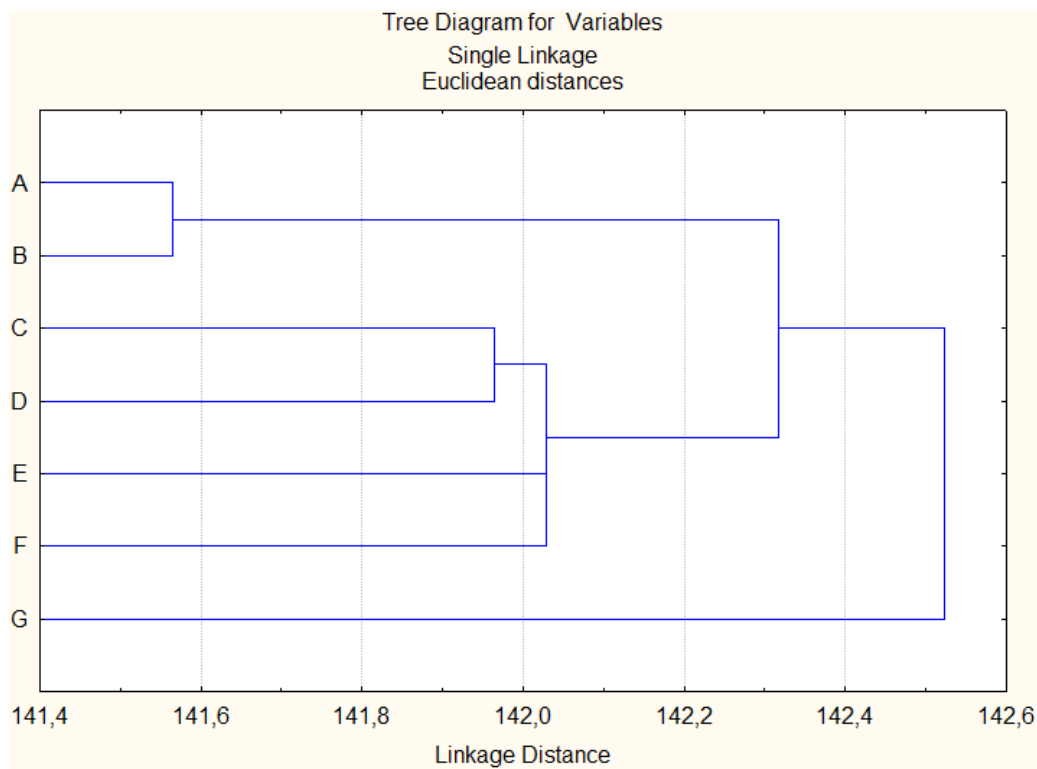


Fig. 3. A dendrogram of affinities of spider groups of the families Salticidae, Araneidae, Thomisidae of different ecotones and ecosystems of the Kozakova Dolina reserve is built on the basis of the Sørensen coefficient. Designation of ecotones and ecosystems in the text.

Aerological analysis of the detected species established that among the detected species of spiders the following number of species with the following types of habitats:

With a polyzonal range - 39 species.

With a boreal-montane habitat - 1 species.

With Holarctic range (H) - 10 species.

With a transpalearctic range (TP) - 9 species.

With a Eurasian range (E) - 2 species.

With a European range (Eu) - 5 species.

With the European-Siberian range (EuS) - 2 species.

With the European-Iranian-Turanian range (EuIT) - 1 species.

With the Western Palearctic-Turanian range (WPT) - 1 species.

With the European-Caucasian range (EuK) - 1 species.

With a Palearctic-Neotropical range (PN) - 1 species.

With the European-Siberian-Asia Minor-Caucasian range (EuSM) - 1 species.

With the European-Asia Minor-Caucasus-Turanian range (EuMKT) - 1 species.

With the European-Asia Minor-Caucasian range (EuMK) - 2 species.

With the European-West Siberian range (EuWS) - 1 species.

The number of detected species of spiders with different types of habitats is shown in fig. 4.



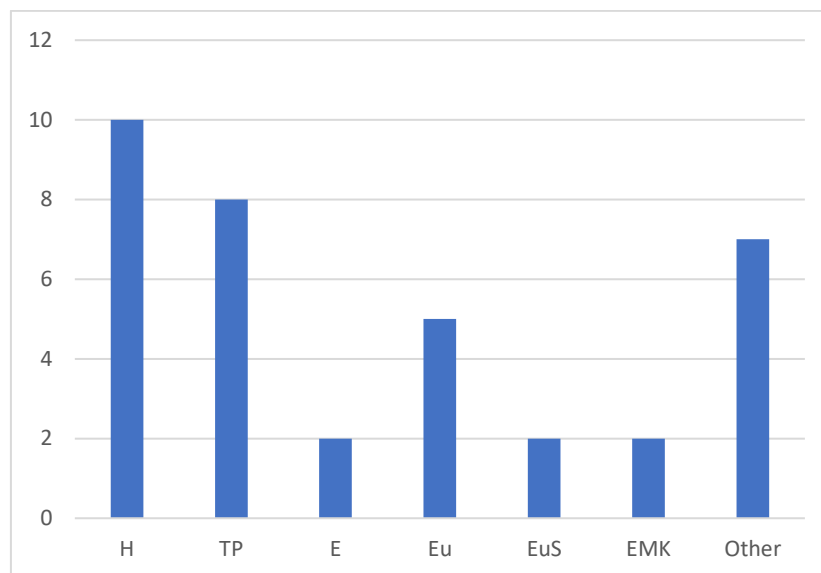


Fig. 4. The number of detected species of spiders of the three studied families of the Kozakova Dolina reserve with different types of habitats. Explanation in the text

#### 4. CONCLUSIONS

1. 40 species of spiders from the three studied families - jumping spiders (Salticidae), pinworm spiders (Araneidae) and crab spiders (Thomisidae) were found on the territory of the Kozakova Dolina nature reserve.

2. The largest number of species of spiders (39) was found in the grassy edge of the beech forest.

3. Practically all discovered species of spiders have a polyzonal range. Most of the detected species of spiders have different types of Holarctic range (10 species), transpalearctic range (9 species), European range (5 species).

**Acknowledgments.** We are deeply grateful to the management of Precarpatian National University named Vasyl Stepanyk and the Department of Biology and Ecology for their help in carrying out these scientific studies.

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**Received:** November 2, 2023; **revised:** November 30, 2023; **accepted:** December 11, 2023; **published:** December 28, 2023.

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Igor Venhryniuk, Artur Sirenko. До питання про фауну павуків (Aranei, Arachnida, Arthropoda) трьох родин павуків - стрибунів (Salticidae), павуків-колопядів (Araneidae) та павуків-крабів (Thomisidae) заказника «Козакова долина». *Журнал Прикарпатського університету імені Василя Стефаника*, 10 (2023), 76-86

Вперше проведено дослідження фауни павуків (Aranei, Arachnida, Arthropoda) заказника «Козакова Долина», що вирізняється різноманітними флористичними комплексами та своєрідною геологічною будовою: це карстові гіпсові гори, що утворилися в Торгонську епоху Неогенового періоду. Гіпсові гори заказника мають чисельні печери, скелі, карстові кратери, що сприяє різноманітності фауни павуків. Фауна павуків Українських Карпат та Прикарпаття (на відміну від багатьох інших регіонів України) досі лишається дослідженою вкрай недостатньо і фрагментарно, потребує подальших досліджень. Досліджено фауну павуків трьох родин: павуків-стрибунів (Salticidae), павуків-колопядів (Araneidae) та павуків-крабів (Thomisidae) трьох родин, що відрізняються різноманітністю видів як в світовій фауні, так і в фауні України. Досліджувані колекції збиралися протягом тривалого періоду часу – з 2002 по 2023 рр. включно. Збір матеріалу та ідентифікацію видів проводили в стандартному порядку. Зібраний матеріал зберігали в 70% етанолі. У результаті досліджень, проведених на території заказника «Козакова долина» та прилеглих територіях, виявлено 40 видів павуків трьох зазначених вище родин.

Проведено аналіз біотопічного розподілу виявлених видів, досліджено фауністичну спорідненість видових комплексів павуків за критеріями фауністичної спорідненості Жаккара (S) та Соренсена (KS), проведено ареологічний аналіз виявлених видів. Встановлено, що екотон узлісся букового лісу є найбагатшим на види павуків (39 ідентифікованих видів). Екосистема лісової підстилки букового лісу виявилася найбільш багатшою за видовими комплексами павуків трьох досліджуваних родин. На основі даних фауністичної спорідненості проведено кластерний статистичний аналіз. Найближчими за видовими комплексами павуків трьох досліджуваних родин були екотон узлісся букових лісів та степових ділянок околиць заказника «Козакова Долина» ( $S = 81,15$ ;  $Ks = 0,899$ ). Найменш спорідненими по фауні павуків виявились екосистеми степових ділянок та лісової підстилки букового лісу ( $S = 6,25$ ;  $Ks = 0,118$ ). Знайдено найбільше видів павуків з голарктичним ареалом (10) і транспалеарктичним ареалом (9). З європейським ареалом виявлено 5 видів. Нових видів для фауни України знайдено не було. Не було виявлено ендемічних видів.

**Ключові слова:** фауна, Aranei, Arachnida, Arthropoda