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ON TWO NEW PSEUDOSCORPIONS FROM HERZEGOVINA

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Abstract — Two new endemic cave pseudoscorpion species from the Petropavlova Pećina Cave, village Bihovi, 6 km from Trebinje, Herzegovina, are presented, thoroughly described and illustrated. These are named *Chthonius* (*Globochthonius*) *petroupauli* n. sp. and *Roncus paulipetrou* n. sp. Their main morphometric characteristics and important diagnostic features are analyzed and compared to those of their phylogenetically closest congeners.

Key words: Pseudoscorpions, Chthoniidae, Neobisiidae, endemism, caves, Herzegovina.

UDC 595.47(497.6)

INTRODUCTION

In this study we present the results of the examination of material from a sample of pseudoscorpions collected by one of us (TR). The sample contains two new taxa: *Chthonius* (*Globochthonius*) *petroupauli* n. sp. and *Roncus paulipetrou* n. sp. The new species described in this paper are probably endemic and relict forms inhabiting caves which belong to the Dinaric Arch in Herzegovina.

Setal designations follow Beier (1963).

SYSTEMATIC PART

CHTHONIIDAE DADAY, 1888

CHTHONIUS C. L. KOCH, 1843

CHTHONIUS (*GLOBOCHTHONIUS*) *PETROUPAULI* ĆURČIČ & RAĐA, NEW SPECIES

(Figs. 1 - 7; Table 1)

Etymology. — After the Church of St. Peter and Paul, situated in the vicinity of the type - locality of the new species.

Material examined. — Holotype female, from the Petropavlova (or Pavlova) Pećina Cave, village Bihovi, 6 km far from Trebinje, Herzegovina; 6 September 2006, collector unknown.

Description. — The carapace (Fig. 7) reaches its maximum breadth at the level of the 'ocular' setal row and is only slightly broader than longer (Table 1). The anterior border of the carapace is broader than the posterior, and the carapace resembles a regular trapezium. The epistome is absent, but tiny serrations are particularly obvious between the anterior median setae although irregularities can be seen on the margin almost up to the lateral anterior setae (Fig. 7). Neither eyes nor eye-spots are present.

The carapace is beset with 18 setae and these are lying in five rows (Fig. 7): four setae comprise the an-

terior row, six belong to the 'ocular' row, four to the median, two to the intermedian and two macrosetae to the posterior setal series. Two microsetae are carried in preocular recess (Fig. 7).

The number of abdominal setae carried on tergites I - X can be expressed as 2 - 2 - 4 - 4 - 4 - 6-6 - 6 - 6 - 4. Sternite II carries 10 setae arranged in the form of the triangle (Fig. 5). Sternite III bears 10 posterior setae and three microsetae along each of the stigma. The 4th sternite bears seven posterior setae and two suprastigmatic microsetae on either side. Sternites V - X carry 8 - 6 - 6 - 6 - 6 - 4 setae. Pleural membranes granulostriate.

The cheliceral spinneret (galea) is represented by an elevation of the movable finger margin (Fig. 6), and immediately below, on the inner margin, there is an isolated tooth (Fig. 6). The other large tooth is contiguous with a row of smaller teeth which ends below the site of insertion of the galeal seta (Fig. 6). On the fixed cheliceral finger the teeth are larger, particularly the first two and they extend proximal, diminishing in size, below those on the movable finger.

The movable cheliceral finger carries one large galeal seta and the five setae on the cheliceral palm. In addition, two small setae are carried exterior to *vb* (Fig. 6). The movable finger is considerably longer than the cheliceral breadth, and the ratio of the cheliceral length-to-breadth is 2.35 (Table 1). Cheliceral flagellum is composed of nine bipinnate blades arranged, more or less, in pairs.

The pedipalpal coxae carry five setae: two at the anterior end (manducatory process) and three on the posterior border of the trochantic foramen. The femur is 6.20 times longer than its breadth and 1.63 times longer than carapace (Table 1). The tulip-like patella at its distal end is broader than the femur; the ratio of the patellar length-to-breadth is 2.47 (Table 1).

Eight trichobothria are carried on the fixed, and four on the movable chelal finger (Figs. 1 and 3). Both cheliceral fingers are almost straight and only apically are they slightly curved inwards (Figs. 1 and 3). The fixed chelal finger is 1.46 times as long as the chelal palm; the ratio of the pedipalpal chelal length-to-breadth is 5.21 (Table 1). The teeth of the fixed finger (21) are small, triangular and interspaced. The teeth of the movable finger (28) are similar to those on the fixed finger; proximally, these merge into a dental lamella (Figs. 1 and 3). In general, proximally and distally the teeth on both fingers are smaller than the remainder (Figs. 1 and 3).

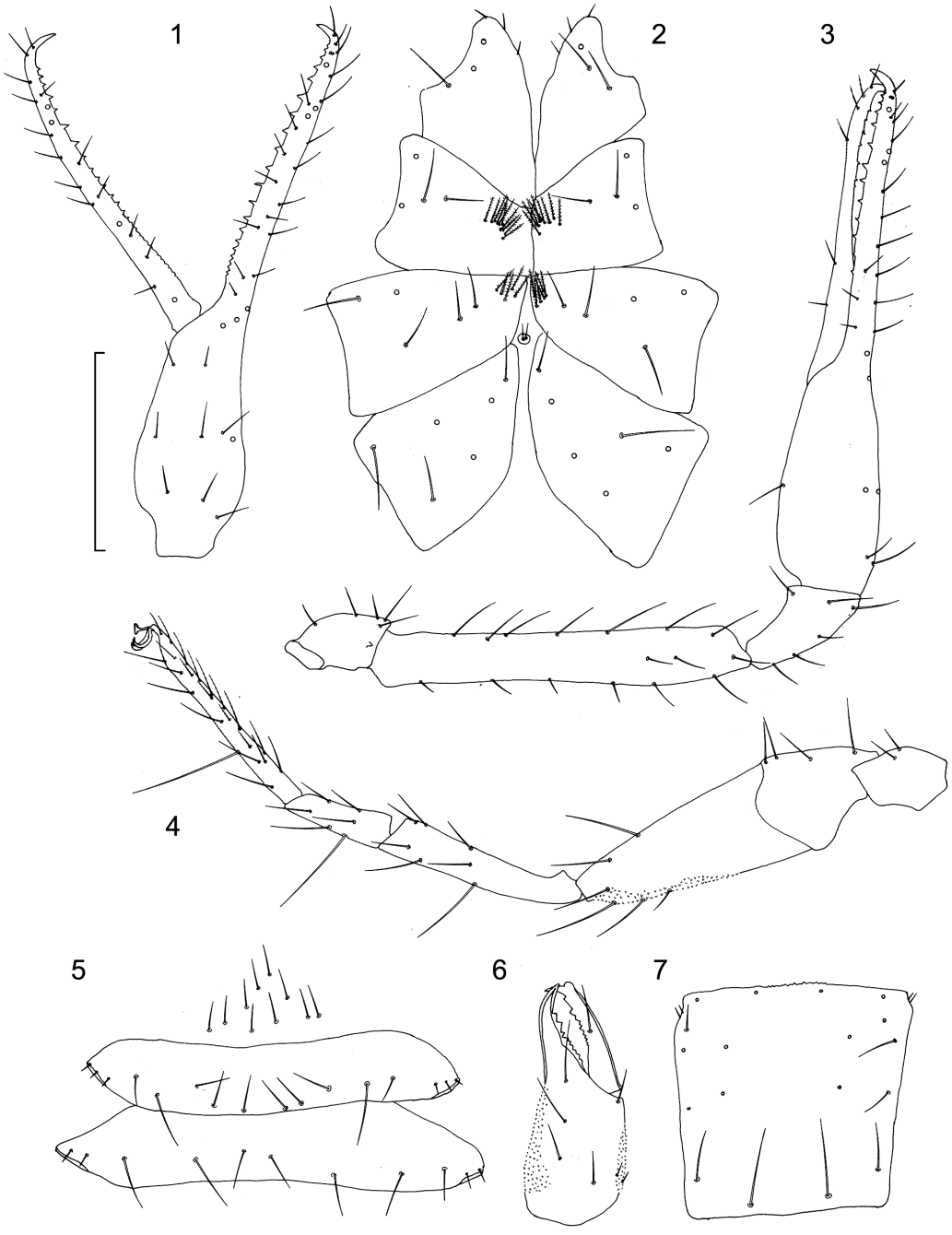
The pedal coxae II and III carry spines medially in a distinct group, nine or ten on coxa II and five or six on coxa III. The intercoxal tubercle carries two small setae (Fig. 2).

The measurements of the various segments of the leg IV, as well as the tactile seta ratios, are given in Table 1. The tibia IV, metatarsus IV and tarsus IV each carry a long tactile seta (Fig. 4).

All analyzed measurements (in mm) and morphometric ratios of different body structures are presented in Table 1.

Remarks. — The new species differs from *C.* (*G.*) *medeonis* Ćurčić 2011, from Montenegro. in many important aspects, such as: the setation of tergites I - IV (2 - 2 - 4 - 4 vs. 4 - 4 - 4 - 4), the number of teeth on the fixed (21 vs. 17) and movable chelal finger (12 vs. 28), number of spines on pedal coxa II (9 - 10 vs. 3 - 5) and coxa III (5 - 6 vs. 3 - 4), body size (1.99 mm vs. 1.68 mm), cheliceral length (0.61 mm vs. 0.45 mm), length-to-breadth of pedipalpal chelal ratio (5.21 vs. 4.75), leg IV femur + patella length-to-breadth ratio (3.10 vs. 2.86), leg IV tibia length-to-breadth ratio (5.00 vs. 4.89), as well as in many other morphometric ratios and linear measurements (Table 1).

From *C.* (*G.*) *purgo* Ćurčić, Lee and Makarov, 1993, the new species is easily distinguished by the presence/absence of eye-spots (present vs. absent), in the setation of posterior carapacal row (6 vs. 2), number of carapacal setae (21 vs. 18), setation of tergites I - IV (4 - 4 - 4 - 4 vs. 2 - 2 - 4 - 4), number



Figs. 1 - 7. *Chthonius* (*Globochthonius*) *petroupauli* n. sp., holotype female, from Herzegovina. 1 - pedipalpal chela, 2 - coxae I - IV, 3 - pedipalp, 4 - leg IV, 5 - female genital area, 6 - chelicera, 7 - carapace. Scale lines = 0.25 mm (Figs. 2 and 5) and 0.50 mm (Figs. 1, 3, 4, 6 and 7).

Table 1. Linear measurements (in millimeters) and morphometric ratios in *Chthonius* (*Globochthonius*) *petroupauli* n. sp., *C.* (*G.*) *medeonis* Ćurčić, Ćurčić, Ćurčić & Ilić, *C.* (*G.*) *purgo* Ćurčić, Lee & Makarov, *C.* (*G.*) *pancici* Ćurčić, and *C.* (*G.*) *polychaetus* (Hadži). Abbreviations: ♀ = female, ♀♀ = females.

	C. (*G.*) *petroupauli*	*C.* (*G.*) *medeonis*	*C.* (*G.*) *purgo*	*C.* (*G.*) *pancici*	*C.* (*G.*) *polychaetus*
Character	♀	♀	♀	♀♀	♀
Body					
Length (1)	1.99	1.68	1.60	1.24-1.25	1.54
Cephalothorax					
Length (2)	0.57	0.49	0.43	0.38-0.41	0.48
Breadth (2a)	0.58	0.45	0.41	0.42-0.46	0.46
Ratio 2/2a	0.98	1.09	1.05	1.23-1.30	1.04
Abdomen					
Length	1.42	1.19	1.17	-	-
Chelicerae					
Length (3)	0.61	0.45	0.36	0.37-0.38	0.45
Breadth (4)	0.26	0.20	0.17	0.17-0.20	0.21
Length of movable finger (5)	0.315	0.25	0.195	0.20-0.22	0.245
Ratio 3/5	1.94	1.80	1.85	1.73-1.85	1.84
Ratio 3/4	2.35	2.25	2.12	1.90-2.18	2.14
Pedipalps					
Length with coxa (6)	3.325	2.88	1.845	2.10-2.25	2.51
Ratio 6/1	1.67	1.71	1.15	1.68-1.80	1.63
Length of coxa	0.41	0.37	0.34	0.25-0.27	0.40
Length of trochanter	0.26	0.21	0.15	0.16-0.17	0.15
Length of femur (7)	0.93	0.845	0.47	0.59-0.67	0.70
Breadth of femur (8)	0.15	0.13	0.10	0.10-0.11	0.10
Ratio 7/8	6.20	6.50	4.70	5.82-6.09	7.00
Ratio 7/2	1.63	1.72	1.09	1.55-1.63	1.46
Length of patella (tibia) (9)	0.37	0.315	0.205	0.20-0.23	0.26
Breadth of patella (tibia) (10)	0.15	0.13	0.11	0.13	0.15
Ratio 9/10	2.47	2.42	1.86	1.54-1.77	1.73
Length of chela (11)	1.355	1.14	0.68	0.89-0.92	1.00
Breadth of chela (12)	0.26	0.24	0.15	0.20-0.22	0.215
Ratio 11/12	5.21	4.75	4.53	4.18-4.45	4.60
Length of chelal palm (13)	0.55	0.48	0.27	0.34-0.38	0.215
Ratio 13/12	2.115	2.00	1.80	1.70-1.75	1.80
Length of chelal finger (14)	0.805	0.66	0.41	0.54-0.57	0.60
Ratio 14/13	1.46	1.375	1.52	1.42-1.63	2.79
Leg IV					
Total length	2.705	2.24	1.68	-	-
Length of coxa	0.34	0.26	0.38	-	-
Length of trochanter (15)	0.26	0.21	0.22	0.20	0.20
Breadth of trochanter (16)	0.15	0.13	0.10	-	-
Ratio 15/16	1.73	1.615	2.20	-	-
Length of femur + patella (17)	0.805	0.63	0.41	0.54-0.58	0.58
Breadth of femur + patella (18)	0.26	0.22	0.18	0.19-0.24	0.23
Ratio 17/18	3.10	2.86	2.28	2.42-2.84	2.52
Length of tibia (19)	0.50	0.44	0.26	0.35-0.40	0.38

Table 1. Continued

	C. (*G.*) *petroupauli*	*C.* (*G.*) *medeonis*	*C.* (*G.*) *purgo*	*C.* (*G.*) *pancici*	*C.* (*G.*) *polychaetus*
Character	♀	♀	♀	♀♀	♀
Breadth of tibia (20)	0.10	0.09	0.075	-	-
Ratio 19/20	5.00	4.89	3.47	-	-
Length of metatarsus (21)	0.26	0.23	0.14	0.20-0.22	0.22
Breadth of metatarsus (22)	0.08	0.07	0.065	-	-
Ratio 21/22	3.25	3.285	2.15	-	-
Length of tarsus (23)	0.54	0.47	0.27	0.38-0.41	0.32
Breadth of tarsus (24)	0.05	0.04	0.03	-	-
Ratio 23/24	10.80	11.75	9.00	-	-
TS ratio - tibia IV	0.49	0.49	0.50	-	-
TS ratio - metatarsus IV	0.35	0.43	0.33	-	-
TS ratio - tarsus IV	0.30	0.30	0.31	-	-

of teeth on fixed chelal finger (37 vs. 21), number of spines on coxa II (5 vs. 9 - 10) and III (4 vs. 5 - 6), as well as in numerous morphometric ratios and linear measurements (Table 1).

C. (*G.*) *petroupauli* n. sp. differs clearly from *C.* (*G.*) *pancici* Ćurčić, 1972 in the presence/absence of eyes (absent vs. present), in the number of carapacal seta (18 vs. 20), in the presence/absence of anterior and lateral small setae, posterior carapacal row (absent vs. present), number of teeth on the fixed (21 vs. 24) and movable chelal fingers (28 vs. 16), in the presence/absence of intermediary teeth on the fixed chelal finger (absent vs. present), as well as in different linear measurements and morphometric ratios (Table 1).

From *C.* (*G.*) *polychaetus* (Hadži, 1937) from southern Serbia, this new species differs in presence/absence of eyes (present vs. absent), setation of tergites I - X (4 - 4 - 4 - 4 - 6 - 6 -6 - 6 -6 - 6 vs. 2 - 2 - 4 - 4 - 6 - 6 - 6 - 6 - 4), number of teeth on the fixed (20 vs. 21) and movable chelal fingers (6 vs. 28), number of spines on peal coxa II (14 vs. 9 - 10), as well as in various linear measurements (in mm) and morphometric ratios (Table 1).

Distribution. — Herzegovina; this endemic species probably inhabits caves only.

NEOBISIIDAE J. C. CHAMBERLIN, 1930

RONCUS L. KOCH, 1873

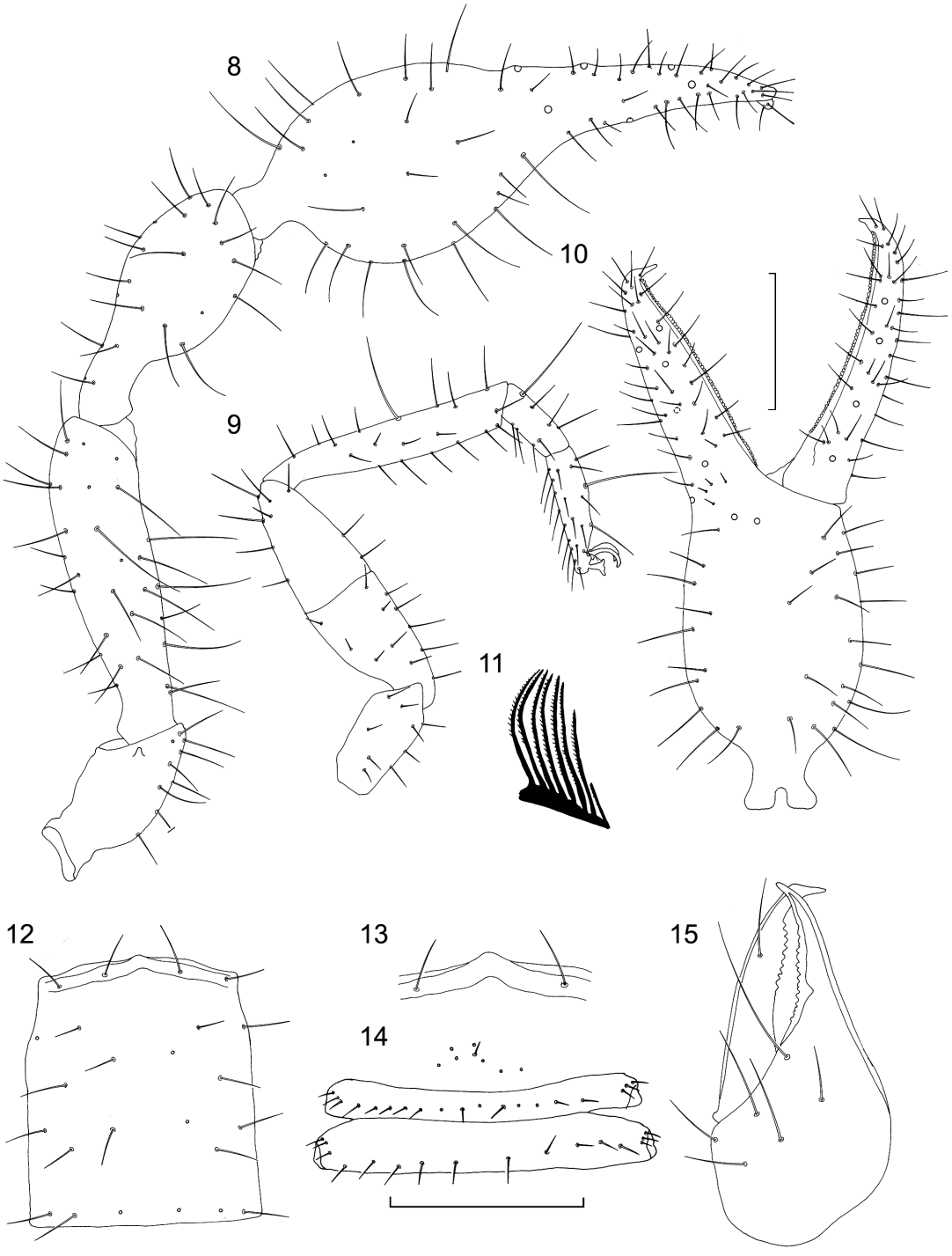
RONCUS PAULIPETROU ĆURČIĆ, NEW SPECIES

(Figs. 8 - 23, Table 2)

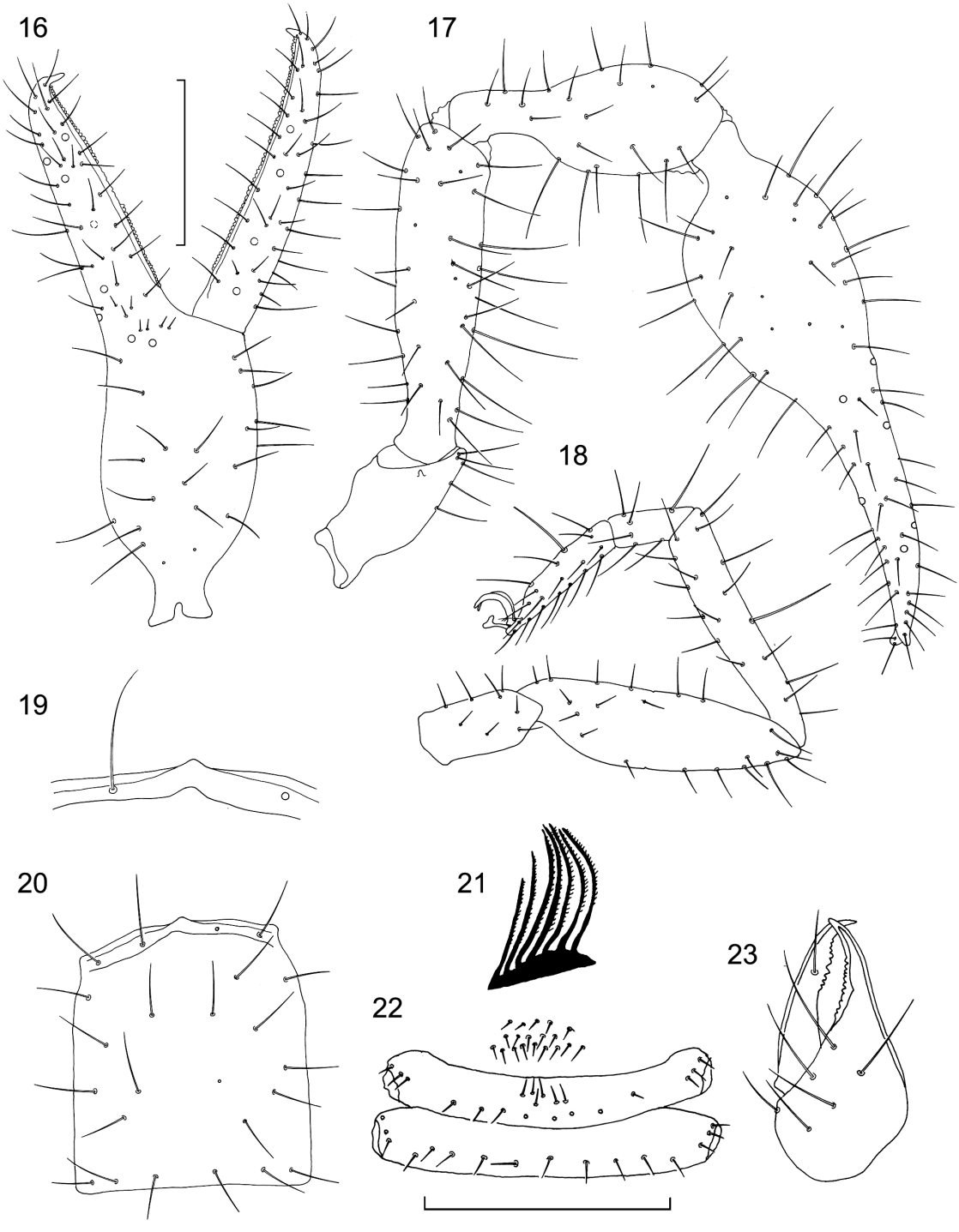
Etymology. — After the Church of St. Peter and Paul, situated in the vicinity of the type-locality of the new species.

Material examined. — Holotype male, allotype female and paratype male, from the Petropavlova (or Pavlova) Pećina Cave, village Bihovi, 6 km far from Trebinje, Herzegovina; 6 September 2006, collector unknown.

Description. — The dorsal side of cephalothorax is longer than broad (Table 2). The epistome is small, triangular and apically rounded (Figs. 13 and 19). Neither eyes nor eye-spots are developed (Figs. 12 and 20). The disposition of setae between the anterior and posterior borders of the carapace is somewhat variable (Figs. 13 and 20). The carapacal series carries 4 + 6 + 8 + 5 = 23 setae, 4 + 6 + 8 + 6 = 24 setae (female) and 4 + 6 + 8 + 6 = 24 setae (male).



Figs. 8 - 15. *Roncus paulipetrou* n. sp., allotype female, from Herzegovina. 8 - pedipalp, 9 - leg IV, 10 - pedipalpal chela, 11 - flagellum, 12 - carapace, 13 - epistome, 14 - female genital area, 15 - chelicera. Scale lines = 0.25 mm (Figs. 11, 13 - 15) and 0.50 mm (Figs. 8 - 10 and 12).



Figs. 16 - 23. *Roncus paulipetrou* n. sp., holotype, male from Herzegovina. 16 - pedipalpal chela, 17 - pedipalp, 18 - leg IV, 19 - epistome, 20 - carapace, 21 - flagellum, 22 - male genital area, 23 - chelicera. Scale lines = 0.25 mm (Figs. 19, 21 and 22) and 0.50 mm (Figs. 16 - 18, 20 and 23).

Table 2. Linear measurements (in millimeters) and morphometric ratios in *Roncus paulipetrou* n. sp., *R. almissae* Ćurčić, Rađa, Ćurčić & Ćurčić, *R. podaga* Ćurčić, and *R. pripegala* Ćurčić. Abbreviations: ♀ = female, ♂ = male, ♂♂ = males.

	R. paulipetrou		*R. almissae*		*R. podaga*		*R. pripegala*
Character	♀	♂♂	♀	♂	♀	♂♂	♂
Body							
Length (1)	3.51	3.03-3.64	4.00	3.09	3.80	3.77-3.86	4.46
Cephalothorax							
Length (2)	0.97	0.89-0.94	0.97	0.88	1.06	0.98-1.03	1.03
Breadth (2a)	0.79	0.67-0.75	0.805	0.72	0.905	0.79-0.89	0.79
Ratio 2/2a	1.23	1.25-1.33	1.20	1.22	1.15	1.10-1.30	1.30
Abdomen							
Length	2.54	2.14-2.70	3.03	2.21	2.74	2.74-2.88	3.43
Chelicerae							
Length (3)	0.66	0.52-0.57	0.55	0.51	0.64	0.64-0.67	0.65
Breadth (4)	0.33	0.26-0.295	0.295	0.275	0.35	0.30-0.315	0.30
Length of movable finger (5)	0.47	0.36-0.42	0.40	0.36	0.43	0.43-0.46	0.47
Ratio 3/5	1.40	1.36-1.44	1.375	1.42	1.49	1.46-1.49	1.38
Ratio 3/4	2.00	1.93-2.00	1.86	1.85	1.83	2.13	2.17
Pedipalps							
Length with coxa (6)	5.79	4.85-5.60	4.825	4.30	6.34	6.11-6.335	6.585
Ratio 6/1	1.64	1.54-1.60	1.21	1.39	1.67	1.62-1.64	2.95
Length of coxa	0.71	0.66-0.68	0.68	0.61	0.78	0.75-0.82	0.93
Length of trochanter	0.70	0.57-0.64	0.56	0.54	0.71	0.69-0.71	0.75
Length of femur (7)	1.24	1.01-1.18	1.00	0.815	1.30	1.31-1.32	1.35
Breadth of femur (8)	0.33	0.25-0.315	0.305	0.26	0.33	0.30-0.32	0.31
Ratio 7/8	3.76	3.75-4.04	3.28	3.13	3.94	4.09-4.40	4.35
Ratio 7/2	1.28	1.13-1.255	1.03	0.93	1.23	1.27-1.35	1.31
Length of patella (tibia) (9)	1.00	0.835-1.04	0.815	0.75	1.15	1.08-1.13	1.155
Breadth of patella (tibia) (10)	0.42	0.33-0.41	0.36	0.34	0.42	0.40-0.41	0.425
Ratio 9/10	2.38	2.53-2.54	2.26	2.205	2.74	2.63-2.825	2.72
Length of chela (11)	2.14	1.775-2.01	1.77	1.585	2.40	2.28-2.355	2.40
Breadth of chela (12)	0.67	0.50-0.60	0.58	0.52	0.665	0.58-0.59	0.65
Ratio 11/12	3.19	3.35-3.55	3.05	3.05	3.61	3.93-3.99	3.69
Length of chelal palm (13)	1.08	0.855-0.97	0.87	0.805	1.17	1.06-1.10	1.10
Ratio 13/12	1.61	1.62-1.71	1.50	1.55	1.76	1.83-1.86	1.69
Length of chelal finger (14)	1.06	0.92-1.04	0.90	0.78	1.23	1.22-1.255	1.30
Ratio 14/13	0.98	1.07-1.08	1.03	0.97	1.05	1.14-1.15	1.18
Leg IV							
Total length	3.765	3.625-3.695	3.265	2.975	4.07	3.975-4.025	4.17
Length of coxa	0.51	0.48-0.50	0.44	0.39	0.54	0.53-0.60	0.58
Length of trochanter (15)	0.44	0.42-0.46	0.42	0.36	0.47	0.445-0.46	0.48
Breadth of trochanter (16)	0.19	0.19-0.20	0.18	0.18	0.20	0.20-0.21	0.195
Ratio 15/16	2.315	2.10-2.42	2.33	2.00	2.35	2.12-2.30	2.46
Length of femur + patella (17)	1.05	0.99-1.00	0.91	0.815	1.09	1.07-1.08	1.11
Breadth of femur + patella (18)	0.275	0.275-0.295	0.33	0.35	0.29	0.28-0.29	0.30

Table 2. Continued

	R. paulipetrou		*R. almissae*		*R. podaga*		*R. pripegala*
Character	♀	♂♂	♀	♂	♀	♂♂	♂
Ratio 17/18	3.82	3.355-3.64	2.76	2.33	3.76	3.69-3.86	3.70
Length of tibia (19)	0.96	0.94-0.95	0.855	0.77	1.06	1.01-1.035	1.06
Breadth of tibia (20)	0.15	0.14	0.15	0.15	0.16	0.14-0.15	0.15
Ratio 19/20	6.40	6.71-6.785	5.70	5.13	6.625	6.90-7.21	7.07
Length of metatarsus (21)	0.305	0.285-0.305	0.22	0.24	0.34	0.36-0.40	0.35
Breadth of metatarsus (22)	0.12	0.11	0.11	0.11	0.13	0.12-0.14	0.13
Ratio 21/22	2.54	2.59-2.77	2.00	2.18	2.615	2.57-3.33	2.69
Length of tarsus (23)	0.50	0.49-0.50	0.42	0.40	0.57	0.51-0.60	0.59
Breadth of tarsus (24)	0.11	0.09-0.10	0.10	0.10	0.11	0.11	0.11
Ratio 23/24	4.545	4.90-5.555	4.20	4.00	5.18	4.64-5.45	5.36
TS ratio - tibia IV	0.55	0.52-0.54	0.595	0.55	0.56	0.53-0.605	0.56
TS ratio - metatarsus IV	0.17	0.18-0.20	0.23	0.17	0.16	0.15-0.17	0.16
TS ratio - tarsus IV	0.31	0.33-0.35	0.39	0.38	0.42	0.41-0.51	0.38

The number of setae born on the tergites I - X is variable. In the female these tergites carry 6 - 8 - 11 - 12 - 11 - 11 - 11 - 13 - 13 - 12, 6 - 9 - 11 - 11 - 11 - 11 - 11 - 14 - 13 - 10 and in the male 6 - 9 - 9 - 12 - 12 - 12 - 12 - 12 - 12 - 9 setae. Pleural membranes granulostriate. In the female, sternite II carries a cluster of eight setae and three suprastigmatic microsetae on either side, sternite III has 13 posterior setae and three microsetae along each of the stigma (Fig. 14), sternite IV has 10 setae arranged uniformly in a single row on the posterior margin and three suprastigmatic microsetae on either side (Fig. 14). Sternites V - X carry 15 - 16 - 15 - 15 - 14 -13 setae.

In the male, sternite II has 19 setae, sternite III has six anterior, 8 - 10 posterior and three small setae along each stigma, sternite IV has 10 posterior setae and three microsetae along each stigma. Sternites V - X carry 13 - 12 - 13 - 13 - 12 - 10 and 15 - 14 - 15 - 14 - 14 - 12 setae. Anal papilla with two pairs of small setae.

The form of the chelicera is similar in males and females (Figs. 15 and 23); in the female, however, the galea is slightly larger than in the male. The movable and fixed fingers have a variable number of teeth, with the proximal and distal members of each series the shortest. The teeth of the movable finger end just below the galeal seta (Figs. 15 and 23). Six setae occur on the palm of the chelicera (Figs. 15 and 23). The cheliceral flagellum consists of one short proximal blade and six to seven longer blades distally. All are denticulate (Figs. 11 and 21).

The manducatory process of the pedipalpal coxae carries four long setae. The pedipalpal articles are smooth, with no obvious granulations (Figs. 8, 10, 16 and 17).

The fixed chelal finger carries 70 (female) and 65 - 69 (male) teeth, the movable finger of the pedipalpal chela carries 65 (female) and 63 - 65 teeth (male). The teeth of the movable finger are square-topped and are similar on the fixed chelal finger; the most distal pointed teeth, slightly asymmetrical, give way to teeth with rounded tips and these are gradually replaced proximally by shorter flattened teeth (Figs. 10 and 16).

Four trichobothria are present on the movable finger and eight on the fixed finger of the chela (Figs. 10 and 16). No microsetae are developed proximal to the trichobothria *eb* and *esb*; instead, four small setae

are presented distal to these two trichobothria (Figs. 10 and 16).

The pedipalpal femur is 3.76 (female), and 3.75 - 4.04 (male) times as long as broad (Table 2). The podomere is distinctly longer than carapace (Table 2). The pedipalpal patella is 2.38 (female) and 2.53 - 2.54 (male) times longer than its breadth (Table 2). The pedipalpal chela length-to-breadth ratio is 3.19 (female) and 3.35 - 3.55 (male) (Table 2). The chelal fingers are 0.98 (female) and 1.07 - 1.08 (male) times longer than chelal palm (Table 2).

Tibia IV, metatarsus IV and tarsus IV each carry a long tactile seta (Figs. 9 and 18). The tactile seta ratio of tibia IV exceeds 0.50 (Table 2); this means that the tactile seta is born in the distal part of the podomere.

The measurements of different body structures and morphometric ratios are presented in Table 2.

Remarks. — *Roncus paulipetrou* n. sp. differs clearly from *Roncus almissae* Ćurčić, Rađa, Ćurčić, and Ćurčić, 2010 in the presence/absence of eyes or eye-spots (absent vs. present), in the setation of sternite II of the male (19 vs. 13), number of setae on sternites V - X of the male (15 - 19 - 15 - 14 - 14 - 12 and 13 - 12 - 13 - 13 - 12 - 12 vs. 11 - 10 - 11 - 11 - 11 - 10), absence/presence of granulations on pedipalpal articles (absent vs. present), number of teeth on the fixed (70 vs. 64 in the female; 59 vs. 65 - 69 in the male) and movable chelal finger (65 vs. 60 in the female; 63 - 65 vs. 57 in the male), as well as in many other linear measurements and morphometric ratios (Table 2).

From *R. podaga* Ćurčić, 1988, *R. paulipetrou* n. sp. is considerably different in the number of carapacal setae (22 vs. 24), in the setation of abdominal tergites I - IV in the female (6 - 6 - 9 - 11 vs. 6 - 9 - 11 - 11) and male (6 - 7 - 10 - 10 and 6 - 6 - 11 - 10 vs. 6 - 9 - 9 - 12), setation of sternite II of the female (12 vs. 8), presence/absence of granulation on the pedipalpal chela (present vs. absent), and in the number of teeth on fixed chelal finger of the male (86 - 89 vs. 65 - 69) and the female (89 vs. 65). Morphometric ratios and linear measurements (in mm) are presented in Table 2.

From its phenetically close congener, *R. pripegala* Ćurčić, 1988, *R. paulipetrou* n.sp. differs considerably in the carapacal setal formula in the male (4 + 8 + 6 + 6 = 24 vs. 4 + 6 + 8 + 6 = 24), in the setation of tergites I - V of the male (6 - 6 - 7 - 6 - 7 vs. 6 - 9 - 9 - 12 - 12), number of setae on sternite II of the male (23 vs. 19), number of teeth on the fixed chelal finger (92 vs. 65 - 69) and on the movable chelal finger of the male (85 vs. 63 - -65).

Morphometric ratios and linear measurements (in mm) as in Table 2.

Distribution. — It seems that *R. paulipetrou* n. sp. belongs to a group of species which have differentiated within the geographic area investigated, i.e. in Herzegovina, and possibly also in Dalmatia.

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The desiccation of the Mediterranean took place 5.5 Myr ago. Such a geologically recent catastrophic event left behind not only a giant evaporate deposit, it also had a great impact on the modern world, on the circum-Mediterranean landscape, on regional and global climate, and on the evolution and distribution of plants and animals.

The salinity crisis induced a continuous change towards a cooler and more arid climate in circum-Mediterranean. The Antarctic ice shield expanded greatly during the Messinian age, and the Arctic ice shield may have begun to form then.

From the aspects of genesis of different geological phenomena, it is evident that the historical development of cave-dwelling pseudoscorpions lasted a very long time. Terrestrial cave-dwellers are usually descendants of a tropical epigean fauna living in Europe and North America at the end of Cretaceous and at the beginning of the Tertiary. Only in caves have some pseudoscorpions survived, since simulta-

neous karstification provided a wide variety of underground niches. Thus, the two new species probably originated at the beginning of the Tertiary at the latest (Beier, 1939, 1963; Ćurčić, 1972, 1988; Ćurčić et al., 1993, 1997a, b, 1999, 2004, 2008, 2010, 2011a, b, c, d, Hadži, 1937).

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