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NEW RECORDS OF MITES (ACARI: PROSTIGMATA: ERYTHRAEIDAE, TROMBIDIIDAE, EUTROMBIDIIDAE) FROM CROATIA, WITH DESCRIPTIONS OF THREE NEW SPECIES

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Hauptmannia pseudolongicollis, *H. stanislavae*, *H. silesiacus*, *Grandjeanella multisetosa*, *Leptus josifovi*, *Erythraeus (Zaracarus) budapestensis*, *Charletonia bucephalia*, *C. dalegori*, *C. krendowskyi*, *Phanolophus oedipodarum*, *Balaustium nikae*, *Eutrombidium trigonum* and *E. robauxi* are new to the fauna of Croatia. *Erythraeus (Zaracarus) sibuljinicus* n. sp. belongs to the group of species having basifemoral, setal formula 3-3-3, *Charletonia zorani* n. sp. belongs to the group of species with four setae between coxae II and III and *Trombidium botovicus* n. sp. belongs to the group of species with narrow and nude hypostomalae are described. Additional measurements for *L. josifovi*, *E. (Z.) budapestensis*, *C. dalegori* and *P. oedipodarum* are given.

Key words: Acari, Prostigmata, Erythraeidae, Trombidiidae, Eutrombidiidae, new records, new species, Croatia

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Hauptmannia pseudolongicollis, *H. stanislavae*, *H. silesiacus*, *Grandjeanella multisetosa*, *Leptus josifovi*, *Erythraeus (Zaracarus) budapestensis*, *Charletonia bucephalia*, *C. dalegori*, *C. krendowskyi*, *Phanolophus oedipodarum*, *Balaustium nikae*, *Eutrombidium trigonum* i *E. robauxi* nove su vrste za faunu Hrvatske. Opisuju se vrste *Erythraeus (Zaracarus) sibuljinicus* n. sp. koja pripada vrstama s bazifemoralnom setalnom formulom 3-3-3, *Charletonia zorani* n. sp. koja pripada vrstama s četiri sete među koksama II i III, te *Trombidium botovicus* n. sp. koja pripada vrstama s uskim i golim hipostomalama. U radu se daju dodatne mjere za *L. josifovi*, *E. (Z.) budapestensis*, *C. dalegori* i *P. oedipodarum*.

Ključne riječi: Acari, Prostigmata, Erythraeidae, Trombidiidae, Eutrombidiidae, novi nalaz, nova vrsta, Hrvatska

INTRODUCTION

In Croatia, mites belonging to the families Erythraeidae, Trombidiidae and Eutrombidiidae are not reported in the literature. In this paper 13 species new to the fauna of Croatia are listed and *Erythraeus (Zaracarus) sibuljinicus* n. sp., *Charletonia zorani* n. sp. and *Trombidium botovicus* n. sp. are described. Standard measurements from some rare species are given.

MATERIALS AND METHODS

The larvae of mites were collected from plants, Orthoptera and Aranae in Croatia. The specimens were preserved in ethanol and then mounted in Berlese's medium. From 27 June to 14 July 2002, 248 larvae belonging to 17 species were captured. The terminology of structures and setal notation for erythraeids, trombidiids and eutrombidiids follows SOUTHCOTT (1961, 1993) and HAITLINGER (1999). All measurements are given in micrometers. All tarsi (Ta) were measured excluding pads. The holotypes of *Erythraeus (Z.) sibuljinicus* n. sp., *Charletonia zorani* n. sp. and *Trombidium botovicus* n. sp. are deposited at the Museum of Natural History, Wrocław University, Poland (MNHWU).

RESULTS

fam. ERYTHRAEIDAE Robineau-Desvoidy, 1828

Hauptmannia pseudolongicollis Haitlinger, 1987

1 l, 13.VII.2002 from plants, Bruvno n. Gračac.

Distribution: Poland, Italy, Slovenia, Croatia.

This rare species was noted everywhere from single localities (HAITLINGER, 1987a; 1996; 2003b). First record from Croatia.

Hauptmannia stanislavae Haitlinger, 1986

1 l, 1.VII.2002 from plants, Karojba.

Distribution: Poland, Slovakia, Croatia.

Rare species, known from a few localities in Poland and Slovakia (HAITLINGER, 1986; 1987b; 2000; 2002). First record from Croatia.

Hauptmannia silesiacus Haitlinger, 1986

1 l, 29.VI.2002, Novigrad; 1 l, 4.VII.2002, Krk island, Valbiska; both specimens collected from plants.

Distribution: Poland, Slovakia, Slovenia, Croatia.

Rare species, known only from a few localities (HAITLINGER, 1986; 1987b; 2000; 2002; 2003b). First record from Croatia.

Grandjeanella multisetosa Zhang & Goldarazena, 1996

1 l, 8.VII, 2002 from plants, Kučiće n. Omiš.

Distribution: Spain, Turkey, Croatia.

This species was known only from northern Spain and Turkey and was collected from various species of Thysanoptera (ZHANG & GOLDARAZENA, 1996; GOLDARAZENA *et al*., 1999; 2000). First record from Croatia.

Leptus josifovi Beron, 1975

4 l from *Oedipoda caerulescens* L., 11.VII.2002, Korčula Is., the vicinity of Čara, 11.VII.2002; 2 l under wings, 2.VII.2002, Cres Is. 2.VII.2002; 3 l from *O. caerulescens* from tarsus II and tibia II, 12.VII.2002, Trsteno n. Dubrovnik; 1 l from *Calliptamus italicus* (L.), 12.VII.2002, Korčula Is., Brna n. Smokvica; 1 l from undetermined Orthoptera, 12.VII.2002, Plat n. Dubrovnik; 4 l from *Omocestus* sp., 4 l from undetermined Orthoptera on tarsus I and femur III, 2 l from *Chorthippus* sp. on tarsus I, and femur III, 1.VII.2002, Cres island, Vrana; 4 l from *C. italicus* on femur of leg II, 6 l from undetermined Orthoptera, 5.VII.2002, Pag island, Pag; 1 l from *C. italicus* 13.VII.2002, Knin; 2 l from *Oedaleus decorus* (Germ.), Prizna n. Karlobag; 1 l from undetermined Orthoptera, 5.VII.2002, Pag Is., Šimuni n. Pag; 1 l from *O. caerulescens*, 1 l from *O. decorus*, 2 l from *Stenobothrus* sp. on tibia and femur of leg III, 3.VII.2002, Cres island, Ustrine; 4 l from *O. caerulescens*, 3 l from undetermined Orthoptera, 5.VII.2002, Šibuljina n. Starigrad.

Distribution: Bulgaria, Croatia.

This species was collected from *Phyllomorpha laciniata* (Heteroptera: Coreidae) based on a single specimen (BERON, 1975). In Dalmatia (Croatia) it is very common species associated with some Orthoptera. It was found on at least 6 host species. Most specimens (12) were obtained from *O. caerulescens*. The specimens were found on tarsi I, II, tibia II and femur III. Knowledge of the variability of standard measurements for this species has not been reported previously; therefore measurements for specimens from Croatia are given in Tab. 1. All the above-mentioned species are new hosts for *L. josifovi*. First record from Croatia.

Erythraeus (Zaracarus) budapestensis Fain & Ripka, 1998

3 l, 6.VII.2002, Šibuljina n. Starigrad; 1 l, 5.VII.2002, Pag island, Pag; 1 l, 10.VII.2002, Rudine n. Ploče.

Distribution: Hungary, Croatia.

This rare species was described from a single specimen and was hitherto known only from Hungary (FAIN & RIPKA, 1998). In Croatia, five specimens were collected. Metric data for them are given in Tab. 2. First record from Croatia.

Erythraeus (Zaracarus) sibuljinicus n. sp.

DIAGNOSIS

fD = 24, fV = 12, fnBf = 3-3-3, fSoI = 0-1-2-1, fκ = I(0–1), II(0–0), III(0–0), TaI 168, TiIII 370, trapezoidal scutum.

ETYMOLOGY

Named after the place where the holotype was collected.

MATERIAL

Locus typicus: holotype larva, Croatia, Šibuljina n. Starigrad, 6.VII.2002, from plants; leg. R. Haitlinger; MNHWU.

Tab. 1. Metric data for *Leptus josifovi* Beron; Lh – *L. josifovi from Bulgaria, Lc – L. josifovi* from Croatia (n=10).

	Lh*	Lc		Lh	Lc
IL		482–1115	PsGv		44–52
IW		279–571	1b	65	56–60
AW	85	82–88	2b	30	26–32
PW	97	88–94	3b	45	32–40
AA	13	14	LX	30	28–36
SB	16	12–14	TaI(L)	142	134–148
ISD	55	50–58	TaI(H)	17	20–24
L	113	100–110	TiI	158	156–174
W	113	100–104	GeI	130	122–134
AAS	38	32–34	TfI		84–92
AP	14	16–18	BfI		90–104
AL	63	50–58	TrI		46–50
PL	50	40–48	CxI		56–66
AM	–	32–44	TaII(L)	117	110–124
S	75	58–70	TaII(H)	17	18–22
DS	28–41	24–42	TiII	128	110–124
O		16–22	GeII	100	94–106
Ri		24–30	TfII		66–78
GL		182–198	BfII		70–78
pgl		56–64	TrII		42–48
1a	45	38–46	CxII		64–70
2a	42	34–40	TaIII(L)	145	128–146
sc1		34–44	TaIII(H)	15	16
PsFd		54–62	TiIII	203	188–216
PsGd		50–56	GeIII	117	110–124
TfIII		90–96			
BfIII		90–104			
TrIII		46–54			
CxIII		54–68			

* – according to SOUTHCOTT, 1992

DESCRIPTION

Idiosoma longer than wide with 24 barbed dorsal setae (Fig. 1). Eye cornea 20 μm (proximal) and 16 μm (distal) across, both on platelet. Scutum trapezoidal with almost straight anterior and posterior borders. Anterior scutalae with expanded base of scobillum and sharp point with setules at base. Posterior scutalae shorter, setulose. Anterior sensillary setae are very short, pointed, setulose. Posterior sensillary setae relatively long, setulose at the top (Fig. 3).

Tab. 2. Metric data for *Erythraeus (Zaracarus) sibuljinicus* n. sp. and *E. (Erythraeus) budapestensis* Fain & Ripka; Es – *E. (Z.) sibuljinicus*, Eb – *E. (E.) budapestensis*, 1 – *E. (E.) budapestensis* from Hungary, 2 – *E. (E.) budapestensis* from Croatia.

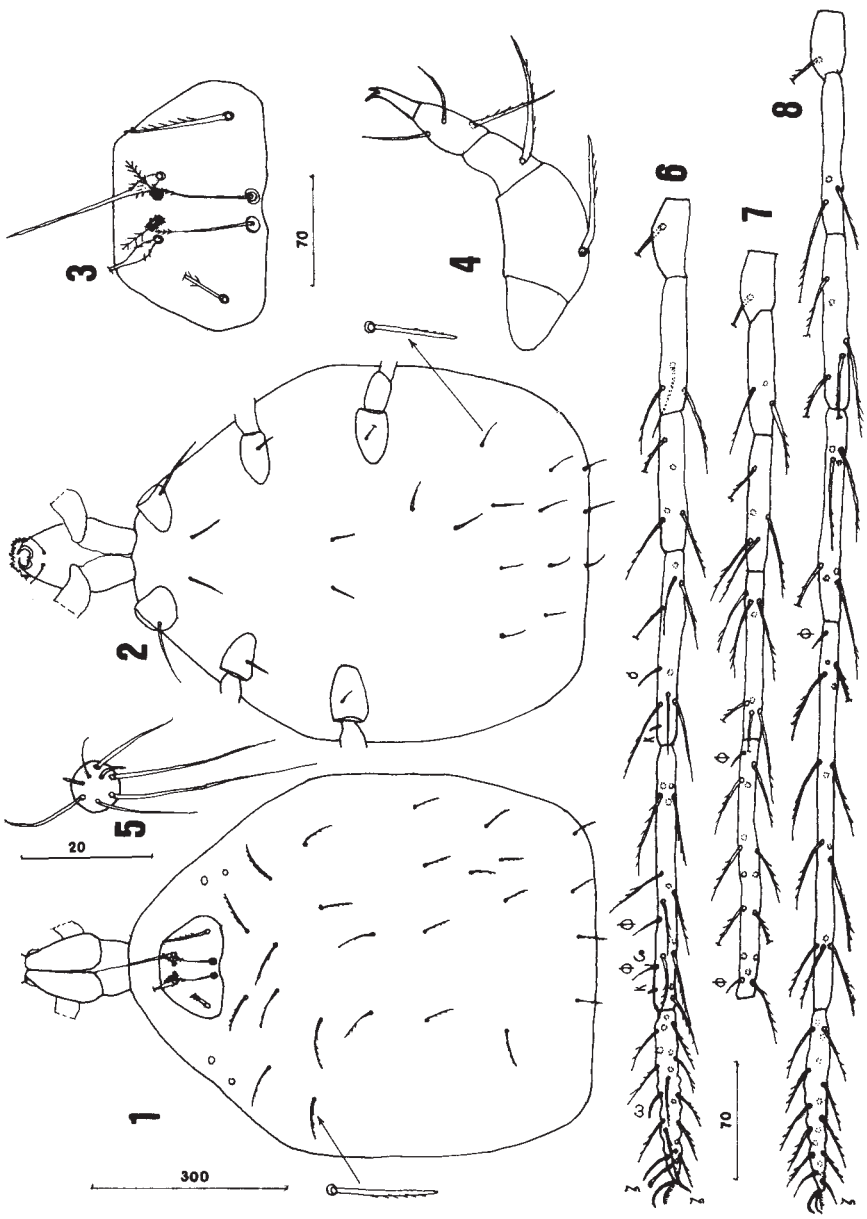
	Es	Eb 1	Eb 2		Es	Eb 1	Eb 2
IL	704		324–425	TaI(L)	168	100	98–106
IW	571		247–330	TaI(H)	22		20–24
L	100	96	94–104	TiI	240	155	134–154
W	160	150	134–162	GeI	186	116	104–114
AW	42	57	54–64	TfI	140		68–80
PW	114	116	104–114	BfI	132		80–100
AA	18		24–36	TrI	70		46–54
SB	16		14–20	CxI	72		60–72
ISD	66	45	42–48	TaII(L)	93		92–100
AP	58	52	38–52	TaII(H)			18–26
AL	104	150	152–166	TiII		160	134–158
PL	74	60	54–60	GeII	156	108	96–110
AM	26	33	26–32	TfII	132		72–78
S	72	69	64–80	BfII	122		72–88
DS	52–64	50–70	44–70	TrII	64		54–62
1a	42	70	62–80	CxII	84		74–82
?	30	33	34–40	TaIII(L)	174	105	114–124
1b	96	80	80–102	TaIII(H)	18		18–24
2b	36		30–36	TiIII	370	240	210–230
3b			40–42	GeIII	200	128	114–126
GL	154		134–142	TfIII	170		92–102
sc1	40		38–50	BfIII	166		88–102
PsFd	60		40–42	TrIII	62		54–64
PsGd	60		54–58	CxIII	84		68–88

Ventral surface bears two pairs of sternalae setae with a few setules and 13 weakly barbed setae beyond coxae III. Coxala 1b–3b with setules; coxalae 1b over twice as long as coxalae 2b and 3b (Fig. 2). NDV=24+13=37. Gnathosoma with smooth hypostomalae (sc1) and galealae. Palpfemur and palpgenu, each with barbed seta. Palptibia with two nude and one weakly barbed seta (Fig. 4). Palptarsus with 8 setae (solenidion included), all nude; among them are two long setae (Fig. 5). Metric data are given in Tab. 2.

Setal formula of legs. Leg I: Ta 1ω, 2ζ, 20B; Ti 2φ, 1κ, 1Co, 14B; Ge 1δ, 1κ, 8B; Tf 5B; Bf 3B; Tr 1B (Fig. 6).

Leg II: Ta damaged; Ti 2φ, 14B; Ge 8B; Tf 5B; Bf 3B; Tr 1B (Fig. 7).

Leg III: Ta 1ζ, 18B; Ti 1φ, 14B; Ge 8B; Tf 5B; Bf 3B; Tr 1B (Fig. 8).



Figs. 1–8. *Erythraeus (Zaracarus) sibuljinicus* n. sp. 1. Idiosoma and gnathosoma, dorsal view. 2. Idiosoma and gnathosoma, ventral view. 3. Scutum. 4. Palp. 5. Palptarsus. 6. Leg I, tarsus-trochanter. 7. Leg II, tibia-trochanter. 8. Leg III, tarsus-trochanter.

REMARKS

In the subgenus *Zaracarus* 11 species were known: *E. (Z.) lancifer* Southcott from Spain, *E. (Z.) eleonorae* Haitlinger from Poland, *E. (Z.) tehranicus* Haitlinger & Saboori from Iran, *E. (Z.) fabiolae* Haitlinger from Canary island, *E. (Z.) preciosus* Goldarazena & Zhang from Spain, *E. (Z.) didonae* Haitlinger from Turkey, *E. (Z.) budapestensis* Fain & Ripka from Hungary, *E. (Z.) longipedus* Saboori & Nowzari, *E. (Z.) rajabi* Saboori, *E. (Z.) iranicus* Saboori & Akrami and *E. (Z.) kharazii* Saboori, all from Iran (HAITLINGER, 1987c; 1997; SOUTHCOTT, 1995; HAITLINGER & SABOORI, 1996; FAIN & RIPKA, 1998; GOLDARAZENA & ZHANG, 1998; SABOORI, 2000; SABOORI & AKRAMI, 2001; SABOORI & NOWZARI, 2001).

E. (Z.) sibuljinicus n. sp. belongs to the group of species having the basifemoral setal formula 3-3-3. This group also contains *E. (Z.) lancifer*, *E. (Z.) rajabii*, *E. (Z.) longipedus* and *E. (Z.) fabiolae*. *E. (Z.) sibuljinicus* differs from *E. (Z.) lancifer* by having longer TiIII (370 vs 304–355), the shape of scutum (trapezoidal vs oval) and the number of fD (25 vs 32); from *E. (Z.) rajabii* by having longer PW (114 vs 102), W (160 vs 127), GL (154 vs 132) and the shape of scutum (trapezoidal vs oval); from *E. (Z.) longipedus* by having shorter TaI (168 vs 187), TiIII (370 vs 424) and the shape of scutum (trapezoidal vs oval); from *E. (Z.) fabiolae* by having shorter PW (114 vs 124), W (160 vs 194), PL (74 vs 104), DS (52–64 vs 70–130), TaI (168 vs 196) and TiIII (370 vs 440).

Charletonia bucephalia Beron, 1975

2 l from the wings of undetermined Orthoptera, 3.VII.2002, Cres island, Pernat; 1 l from wings of undetermined Orthoptera, 4.VII.2002, Krk island, Sv. Duh n. Omišalj; 1 l from wings of undetermined Orthoptera, 7.VII. 2002, Čiovo island, Slatina; 1 l from plants, 10. VII.2002, Rudine n. Ploče.

Distribution: Bulgaria, Greece, Croatia.

Relatively rare species (BERON, 1975; HAITLINGER, 1984; 2000; 2003a). It probably occurs in the whole of Dalmatia. First record from Croatia.

Charletonia dalegori Haitlinger, 2003

2 l from undetermined Orthoptera, 7.VII.2002, Omiš; 7 l from undetermined Orthoptera and 2 l from *C. italicus* on wing and tarsus II, 12.VII.2002, Plat n. Dubrovnik.

Distribution. Greece (Rhodes), Croatia.

Probably rare species associated with Orthopteras (HAITLINGER, 2003a). *C. italicus* is a new host for this species. Morphological variability of *C. dalegori* is little known; therefore, standard measurements for the specimens from Croatia are given in Tab. 3. First record from Croatia.

Charletonia krendowskyi Feider, 1954

1 l, 5.VII.2002, from plants, Pag island, Pag.

Distribution: Romania, Bulgaria, Greece, Croatia.

Rare species; it was singly collected in all above-mentioned countries (FEIDER, 1954; BERON, 1975; HAITLINGER, 2003a). First record from Croatia.

Tab. 3. Metric data for *Charletonia dalegori* Haitlinger, 2003; R – Rhodes, C – Croatia (n=5).

	R	C		R	C
IL	590–679	546–2888	R*	22–26	–
IW	299–368	267–1764	O*	–	18–26
AW	66–72	66–68	TaI(L)	184–202	200–212
MW	74	64–72	TaI(H)	20–22	18–20
PW	76–80	72–80	TiI	244–260	248–270
L	110–114	114–128	GeI	184–204	186–206
W	94–100	88–98	TfI	122–124	110–134
AL	44–46	38–44	BfI	126–130	126–140
ML	42–48	38–46	TrI	62–66	64–76
PL	40–44	38–48	CxI	62–74	62–74
ISD	78–82	76–84	TaII(L)	176–184	188–196
AP	50–54	44–56	TaII(H)	20	18–20
AA	14–16	14–16	TiII	210–222	222–248
SB	16–18	16–18	GeII	158–164	168–182
AM	70–80	68–74	TfII	94–104	108–114
S	90–100	92–100	BfII	110–122	120–128
GL	146–160	154–174	TrII	56–62	60–62
DS	32–50	32–44	CxII	70–74	66–74
1a	48–52	46–50	TaIII(L)	194–204	204–224
2a	42–54	44–48	TaIII(H)	18	16–18
1b	72–76	68–74	TiIII	290–304	312–334
2b*	42–50	54–60	GeIII	176–190	194–208
2b**	44–60	42–48	TfIII	134–144	138–154
3b*	42–44	50–62	BfIII	138–156	152–160
sc1	?32–52	44–60	TrIII	64–74	58–70
LX	14–16	12–14	CxIII	72	70–80

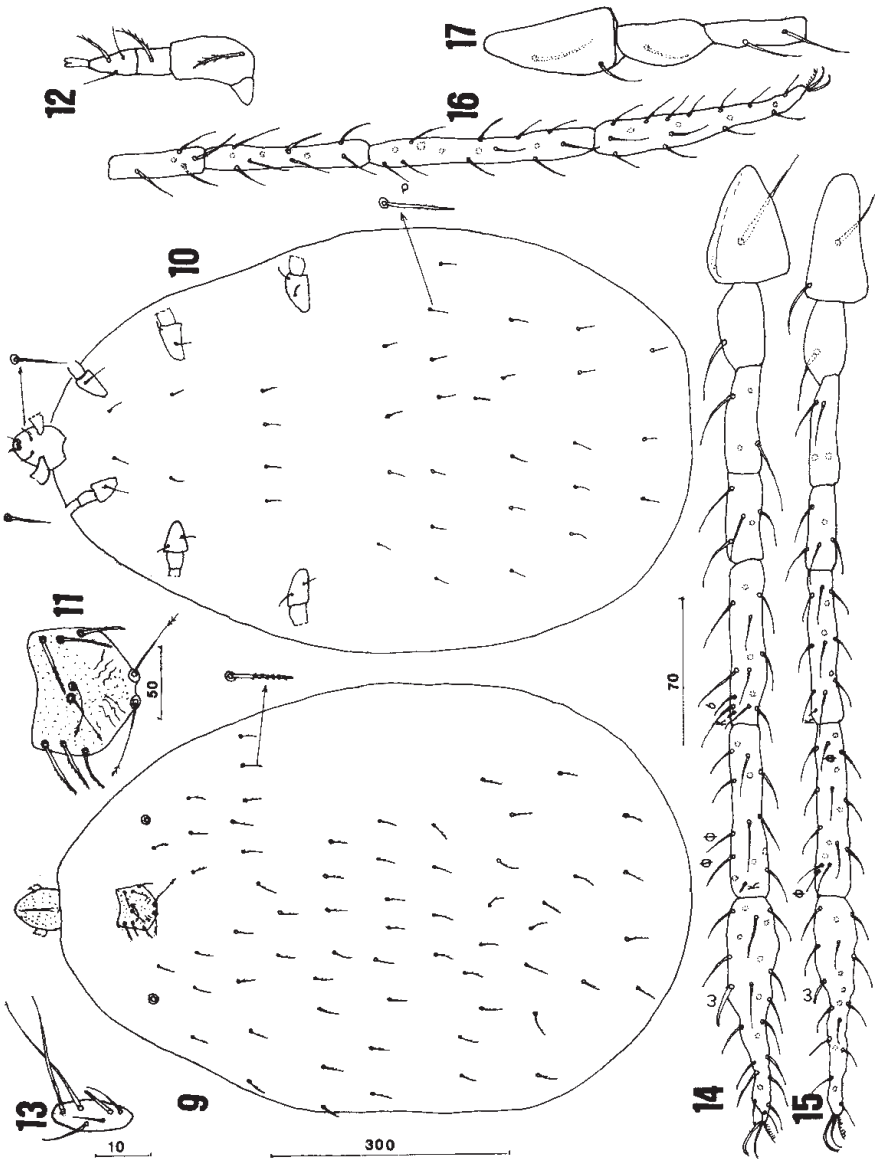
Charletonia zorani n. sp.

DIAGNOSIS

Four setae between coxae II and III. TaI: 106–108 μm; TiIII 106–122 μm; AW 72–74 μm; TiIII/AW 1.47–1.65.

ETYMOLOGY

The name of the species has been derived from the name Zoran.



Figs. 9–17. *Charletonia zorani* n. sp. 9. Idiosoma and gnathosoma, dorsal view. 10. Idiosoma and gnathosoma, ventral view. 11. Scutum. 12. Palp. 13. Palptarsus. 14. Leg I, tarsus-coxa. 15. Leg II, tarsus-coxa. 16. Leg III, tarsus-telofemur. 17. Leg III, basifemur-coxa.

MATERIAL

Locus typicus: holotype larva, Krk island, Sv. Duh n. Omišalj, 4.VII.2002, from wings of undetermined Orthoptera; paratype, the same data as for holotype; leg. R. Haitlinger; MNHWU.

DESCRIPTION

Idiosoma with 61 weakly barbed setae. Eyes very small (Fig. 9). Scutum with concave anterior margin and rounded posterior margin that is weakly concave at base of posterior sensillae. Scutum punctate with short, convolute lines near bases of PL. Scutalae slightly barbed. AL>ML>PL. Sensillae AM and S both with setules on their 1/4 distal part (Fig. 11). Dorsum with 61 short and barbed idiosomalae.

Ventral side of idiosoma with two setae 1a, two setae 2a and four setae 3a. Behind coxae III 25 setae; all ventral setae are slightly barbed (Fig. 10). Gnathosoma short with nude galealae and hypostomalae. Palpal formula: 1B, 1B, 1B2N, 6N (with solenidion) (Fig. 12). Two setae on palptarsus are distinctly longer than the others (Fig. 13). Metric data in Tab. 4.

Setal formula of legs. Leg I: Ta 1ω, 23; Ti 2φ, 1κ, 12; Ge 1σ, 1κ, 12; Tf 5; Bf 4; Tr 1B; Cx 1B (Fig. 14).

Leg II: Ta 1ω, 18; Ti 2φ, 14; Ge 12; Tf 5; Bf 4; Tr 1; Cx 2 (Fig. 15).

Leg III: Ta 17; Ti 14; Ge 10; Tf 5; Bf 2; Tr 1; Cx 2 (Figs 16,17).

REMARKS

C. zorani n. sp. belongs to the group species having more than two setae between coxae II and III. In Europe and the environs of Europe were known four such species: *C. venus* Southcott, 1961 from Bulgaria and Greece, *C. krendowskyi* (Feider, 1954) from Romania, Bulgaria and Turkey, *C. womersley* Southcott, 1966 from England and *C. cardinalis* from Europe, USA and Turkey (SOUTHCOTT, 1966; HAITLINGER, 2000; 2003a). It differs from *C. venus* by the presence only four setae between coxa II–III; from *C. krendowskyi* by distinctly shorter TaI (106–108 vs 182–200), AW (72–74 vs 80–92) and ISD (42 vs 67–73); from *C. cardinalis* by fewer number of dorsal setae (61 vs 80–89), ventral setae (25 vs 38–44), shape of scutum (narrow in posterior part vs wide and rounded), shorter ISD (42 vs 66–73), L (76–78 vs 98–108) and PL (32–36 vs 54–70); from *C. womersley* by shorter ISD (42 vs 66), ML (36–38 vs 56), PL (32–36 vs 56) and L (76–78 vs 99).

Phanolophus oedipodarum (Frauenfeld, 1868)

Syn. *P. nasica* André, 1927, *Smaris magnifica* Berlese, 1918.

3 l from *C. italicus* on tarsus and tibia of leg III, 1 l from undetermined Orthoptera, Premantura, 30.VI.2002; 3 l from *C. barbarus*, 5 l on tarsi III, 6 l on tarsi III (1 at claw), 2 l on tarsus II, 2 l on abdomen, all from *C. italicus*, 7 l from *Rhacocleis germanica* (H.S), of which 3 l on dorsum and ventrum of abdomen and ovipostor, 1 l from *Euchorthippus declivus* (Bris.), 30 l from undetermined Orthoptera, 3.VII.2002, Cres Isl, Pernat; 3 l from *C. italicus*, 16 l from undetermined Orthoptera, 3.VII.2002, Cres island; 1 l from undetermined Orthoptera, 1 l from *Acrometopa macropoda* (Burr.), 11

Tab. 4. Metric data for *Charletonia zorani* n. sp.

	H	P		H	P
IL	1302	1916	TaI(L)	106	108
IW	826	1270	TaI(H)	20	18
AW	72	74	TiI	82	92
PW	72	72	GeI	76	86
L	76	78	TfI	34	48
W	96	92	BfI	48	62
AL	46	44	TrI	40	44
ML	38	36	CxI	52	50
PL	32	36	TaII(L)	100	94
ISD	42	42	TaII(H)	20	20
AP	32	34	TiII	82	80
AA	10	8	GeII	74	76
SB	15	18	TfII	40	44
AM	38	34	BfII	54	62
S	64	60	TrII	32	44
GL	100	108	CxII	62	64
DS	26–36	26–34	TaIII(L)	102	104
1a	26	28	TaIII(H)	18	16
2a	26	30	TiIII	106	122
1b	54	56	GeIII	74	82
2b*	36	34	TfIII	44	52
2b**	38	38	BfIII	50	60
3b*	30	34	TrIII	42	42
3b**	28	32	CxIII	60	62
sc1	22	24	O*	8	8
R*	18	20			

H – holotype; P – paratype; 2b* – proximal seta; 2b** – distal seta; 3b* – proximal seta; 3b** – distal seta; O* – eye lens; R* – ring.

l, from *C. italicus*, 3.VII.2002, Cres island, Dragarski n. Cres; 1 l from undetermined Orthoptera, 4.VII.2002, Krk island, Valbiska.

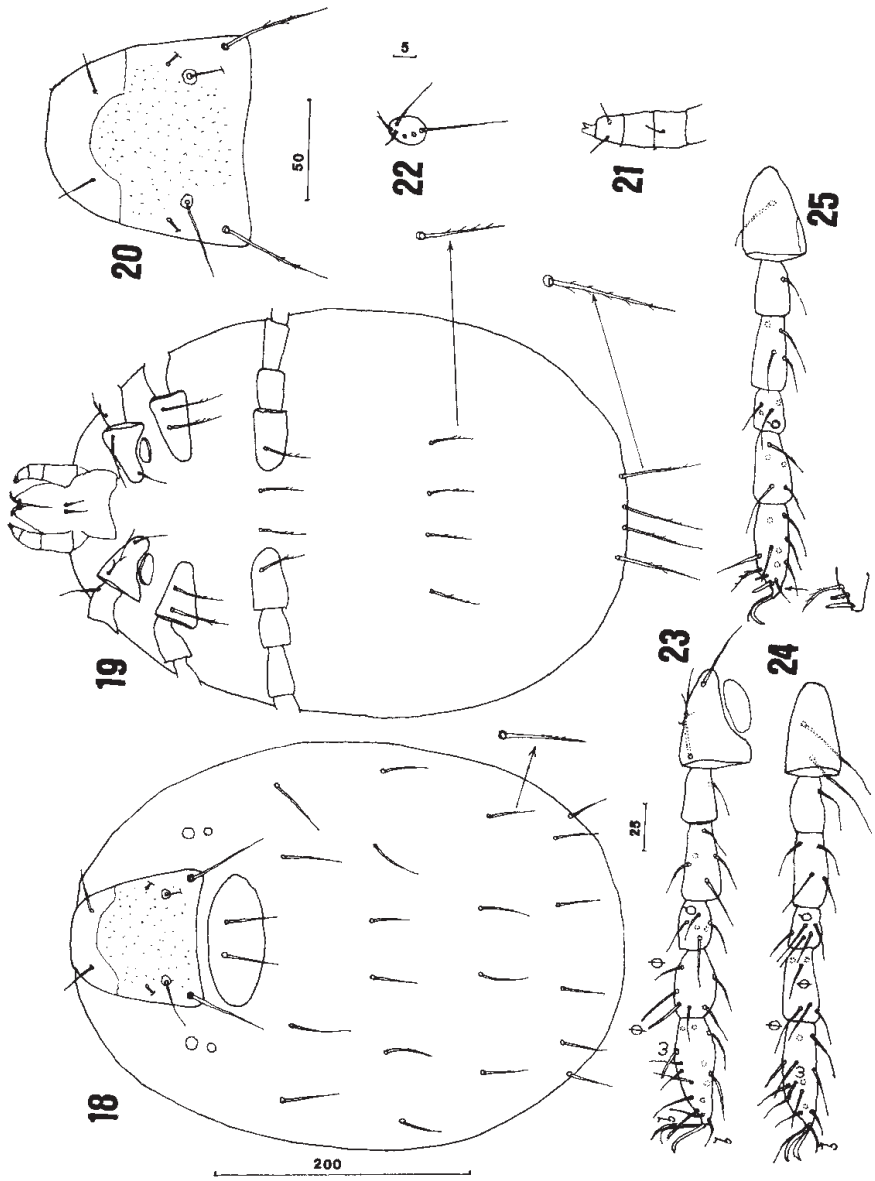
Distribution: Algeria, Italy, Austria, Czech Republic, Greece, Cyprus, Croatia.

This species was collected only from Orthoptera (PAOLI, 1937; DANIEL & SAMŠINAK, 1955; HAITLINGER, 1993). In Croatia most specimens were collected from *C. italicus* (more than half the specimens collected on determined hosts). Relatively frequently larvae were found on tarsi and tibiae of legs I and III. One larva was col-

lected from the ovipostor; which is an unusual occurrence. In Pernat all hosts (adults and subadults) bear this mite. The presence of *P. oedipodarum* on subadult Orthoptera is unusual; erythraeid mites as a rule occur on adult Orthoptera. Hitherto, this species was collected from *Dociostaurus maroccanus* (Thunb.) (Orthoptera: Acrididae), *C. italicus* (Acrididae), *Decticus albifrons* (F.), *Ephippiger (Sternopleurus) cavannai* Targ.-Tozz. (Tettigonidae) (PAOLI, 1937; WELBOURN, 1983). *C. barbarus*, *R. germanica*, *E. declivus* and *A. macropoda* are new hosts for *P. oedipodarum*. The standard measurements are given in Tab. 5.

Tab. 5. Metric data for *Phanolophus oedipodarum* Frauenfeld, 1868 from Croatia and Cyprus; Cr – Croatia (n=12), Cy – Cyprus.

	Cy	Cr		Cy	Cr
IL	685	380–1212	TaI(L)	152	144–154
IW	362	247–641	TaI(H)	24	20–24
L	108	112–126	TiI	134	126–142
W	134	144–152	GeI	124	118–130
AW	94	96–108	TfI	84	86–92
PW	84	88–106	BfI	76	80–86
AA	16	16–20	TrI	54	60–72
SB	36	40–44	CxI	72	74–90
ISD	80	76–82	TaII(L)	126	116–136
AP	52	54–68	TaII(H)	26	22–30
AL	56	60–72	TiII	110	102–120
PL	42	46–50	GeII	100	94–106
AM	52	52–64	TfII	74	76–82
S	84	68–92	BfII	62	62–78
DS	34–52	38–60	TrII	54	58–70
GL	202	170–184	CxII	74	70–86
1a	36	34–40	TaIII(L)	126	122–144
1b	64	60–70	TaIII(H)	22	18–22
2b	34	36–44	TiIII	162	164–174
3b	36	40–44	GeIII	98	98–112
sc1	46	42–46	TfIII	90	90–106
PsFd	24	34–40	BfIII	76	68–84
PsGd	30	26–30	TrIII	52	56–70
O	12	12–15	CxIII	72	66–80
R	–	18–28			



Figs. 18–25. *Trombidium botovicus* n. sp. 18. Idiosoma, dorsal view. 19. Idiosoma and gnathosoma, ventral view. 20. Scutum. 21. Palp. 22. Palptarsus. 23. Leg I, tarsus-coxa. 24. Leg II, tarsus-coxa. 25. Leg III, tarsus-coxa

Balaustium nikae Haitlinger, 1996

4 l, 13.VII.2002, Bruvno n. Gračac.

Distribution. Poland, Czech Republic, Slovakia, Croatia.

Probably common species. Very frequently noted in Slovakia (HAITLINGER, 1996; 2002). First record from Croatia.

Trombidiidae Leach, 1815

Trombidium botovicus n. sp.

DIAGNOSIS

Hypostomalae narrow, nude, AW 74, MA 38, LSS 84, the number of dorsal setae 20.

ETYMOLOGY

Named after the type-locality.

MATERIAL

Locus typicus: holotype larva, Croatia, Botovo n. Koprivnica, 14.VII.2002, from undetermined Araneae, from the end of abdomen; leg R. Haitlinger; MNHWU.

DESCRIPTION

Idiosoma longer than wide. Dorsum with 20 weakly barbed setae arranged 4,6,4,6 (Fig. 18). Both sides of scutum with two pairs of eyes. Scutum punctate with two pairs of scutalae and two pairs of sensillae. Setae AL damaged, PL weakly barbed, AM and S are nude. The anterior part of scutum with distinctly marked curved cuticular stripe (Fig. 20). Scutellum oval with two?nude setae (Fig. 18).

On the ventral side of idiosoma behind coxae III four setae and between coxae III two setae; all are weakly barbed. At posterior border of idiosoma, four long bar-

Tab. 6. Metric data for *Trombidium botovicus* n. sp.

IL	432	PSB	32	1b*	?24	TaII(H)	18
IW	305	LN	24	1b**	42	TiII	32
L	100	MA	38	2b*	48	GeII	20
W	108	GL	72	2b**	46	FeII	34
AW	74	PLN	12	3a	40	TrII	26
PW	84	HS	60	TaI(L)	58	CxII	44
AL	–	LSS	84	TaI(H)	20	TaIII(L)	48
PL	58	SS	20	TiI	32	TaIII(H)	16
AM	?20	SL	46	GeI	26	TiIII	34
SB	58	DS	30–44	FeI	44	GeIII	18
S	42	LPS	66	TrI	30	FeIII	38
AP	32	SA	14	CxI	44	TrIII	32
ASB	68	SP	20	TaII(L)	48	CxIII	42

bed setae placed; pygosomal setae 66 long (Fig. 19). Distal seta 1b on coxa I with three setules longer than nude proximal seta 1b. Coxa II with two setae; both weakly setulose. Coxa III with one weakly setulose seta (Figs 19, 25).

Gnathosoma with two probably nude hypostomalae (sc1). Tibial palpal claws bifide. Palpfemur with one nude seta (Fig. 21). Palptarsus with 6 nude setae, of which one seta is distinctly longer than the remaining ones (Fig. 22).

Metric data are given in Tab. 6.

Leg setal formula. Leg I: Ta 1ω, 2ζ, 12; Ti 2φ, 4; Ge 2σ, 4; Fe 5; Tr 1 (Fig. 23).

Leg II: Ta 1ω, 1ζ, 12; Ti 2φ, 4; Ge 1σ, 3; Fe 4; Tr 1 (Fig. 24).

Leg III: Ta 10; Ti 5; Ge 1σ, 3; Fe 4; Tr 1 (Fig. 25).

REMARKS

T. botovicus n. sp. is similar to *T. hungaricum* Kobulej collected from Opiliones from Hungary, *T. rowmundi* Haitlinger collected from Aranae from Poland, *T. carpaticum* Feider from Romania, *T. teres* André from France and *T. breei* Southcott from England, Germany and Switzerland (FEIDER, 1950; ANDRÉ, 1928; KOBULEJ, 1957; SOUTHCOTT, 1986; HAITLINGER, 1996). It differs from *T. hungaricum* in shorter W (108 vs 168), the number of dorsal setae (20 vs 14) the number of ventral setae (4 vs 10), arranged of ventral setae (4-6-4-6 vs 6-2-2), longer PSL (60 vs 49 and shorter LSS (88 vs 107); from *T. rowmundi* in shorter AW (74 vs 98–102), PW (84 vs 100–102), MA (38 vs 48), SB (58 vs 74–80), LSS (88 vs 110), SS (20 vs 38) and in *T. botovicus* lack seta κ on Ti I, Ge I and Ge II; from *T. carpaticum* and *T. teres* in greater number of the ventral setae (4 vs 2) and from *T. breei* in shorter AW (74 vs 125–138), SB (58 vs 82–96) and LSS (88 vs 146–167).

Eutrombidiidae Thor, 1935

Eutrombidium trigonum (Hermann, 1804)

6 l from undetermined Orthoptera, from wings and base of wings, 31.VI.2002, 4 l from *C. barbarus*, 3.VII.2002, Cres island, Pernat; 6 l from *C. italicus* from wings, 1.VII.2002, Cres island, Vrana; 1 l from *C. italicus*, 1 l from undetermined Orthoptera, 5.VII.2002, Pag island, Pag; 2 l from *Chorthippus* sp., 9.VII.2002, Kljenak n. Vrgorac; 9 l from *Decticus albifrons*, 10.VII.2002, Pelješac Peninsula, Žuljana.

Distribution: France, Germany, Holland, Great Britain, Czech Republic, Poland, Croatia.

This species is probably a common species in central and western Europe (ROBAUX, 1974; SOUTHCOTT, 1993). In Croatia it was found only on two islands: Pag and Cres. *D. albifrons* is a new host for *E. trigonum*.

Eutrombidium robauxi Southcott, 1993

4 l from *O. caerulescens*, 1.VII.2002, Cres island, Slatina; 10 l from undetermined Orthoptera, 31.VI.2002, 2 l from *C. italicus*, Cres island, Pernat; 4 l from *O. decorus*, 1.VII.2002, Cres island, Vrana; 1 l from *C. italicus*, 3.VII.2002, Cres island, Dragarski; 1 l from *O. decorus*, 4.VII.2002, Prizna n. Karlobag; 1 l from *C. italicus*, 3 l from undetermined Orthoptera, 5.VII.2002, Pag island, Pag; 4 l from undetermined Orthop-

tera, 8.VII.2002, Kučiće n. Omiš; 3 l from *Oedipoda caerulescens*, 5 l from undetermined Orthoptera, all from wings, 10.VII.2002, Pelješac Peninsula, Žuljana; 1 l from *C. italicus*, 2 l from undetermined Orthoptera, 12.VII.2002, Korčula Isl, Brna n. Smokvica; 1 l from undetermined Orthoptera, 12.VII.2002, Plat n. Dubrovnik; 1 l from *C. italicus*, 13.VII.2002, Knin.

Distribution: Turkey, Greece (Corfu), Croatia.

This species was known only from two countries and a few localities. All specimens from Turkey were obtained from *Oedaleus decorus* (Germ.) (Orthoptera: Acrididae); the specimen from Corfu was found on *Geomantis larvoides* Pantel (Mantodea: Mantidae) (SOUTHCOTT, 1993). Larvae from Croatia were found on 3 host species: *O. caerulescens* and *C. italicus* are new hosts for *E. robauxi*.

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