

## Article

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### **A new species of *Abrolophus* (Acari: Prostigmata: Erythraeidae) and the first record of *Erythraeus* (*E.*) *picaforticus* from Sicily, Italy**

Ryszard Haitlinger<sup>1</sup> & Dariusz Łupicki<sup>2</sup>

*1* Wrocław University of Environmental and Life Sciences, Institute of Biology, Department of Invertebrate Systematics and Ecology, Koźuchowska 5B, 51-631 Wrocław, Poland; e-mail: ryszard.haitlinger@up.wroc.pl

*2* Wrocław University of Environmental and Life Sciences, Museum of Natural History, Chelmońskiego 38D, 51-630 Wrocław, Poland; e-mail: dariusz.lupicki@up.wroc.pl

#### **Abstract**

*Abrolophus hieronimi* **sp. nov.** is described and illustrated from Sicily, Italy. *Erythraeus* (*Erythraeus*) *picaforticus* is reported for the first time from Italy. Both species are known exclusively from larvae.

**Key words:** Acari, Parasitengona, Trombidiformes, *Abrolophus hieronimi*, *Erythraeus* (*Erythraeus*) *picaforticus*, new record, Sicily

#### **Introduction**

Fauna of terrestrial Parasitengona of Sicily is inadequately known, especially species of the genera *Charletonia* Oudemans, 1910 and *Leptus* Latreille, 1796 are poorly known. To date, 14 species belonging to the family Erythraeidae were known including two *Abrolophus* species (Berlese, 1882, 1910, Canestrini, 1884, Bernini *et al.*, 1994–1996, Beron, 2008, Haitlinger, 2011, 2012).

In this paper we describe a new species, *Abrolophus hieronimi*. This species belongs to the species group having palptarsus without comb-like seta. List of *Abrolophus* species of the world was given by Małol & Wohltmann (2012). Moreover, *Erythraeus* (*Erythraeus*) *picaforticus* Haitlinger, 2002 is reported for the first time from Sicily. To date, this species was known only from Mallorca (Balearic Islands) (Haitlinger, 2002).

#### **Material and methods**

Larvae were collected from herbaceous plants and preserved in 70% ethanol. Later they were mounted on microscopic slides using Berlese medium. Measurements (given in micrometers) were made and figures were drawn using microscope NIKON Eclipse 50i. The terminology and abbreviations follow Haitlinger (1999) and Wohltmann *et al.* (2007). The holotype is deposited in the Museum of Natural History, Wrocław University (MNHWU), Poland.

## Results

Family Erythraeidae Robineau-Desvoidy, 1828

*Abrolophus hieronimi* sp. nov. (Figs. 1–11)

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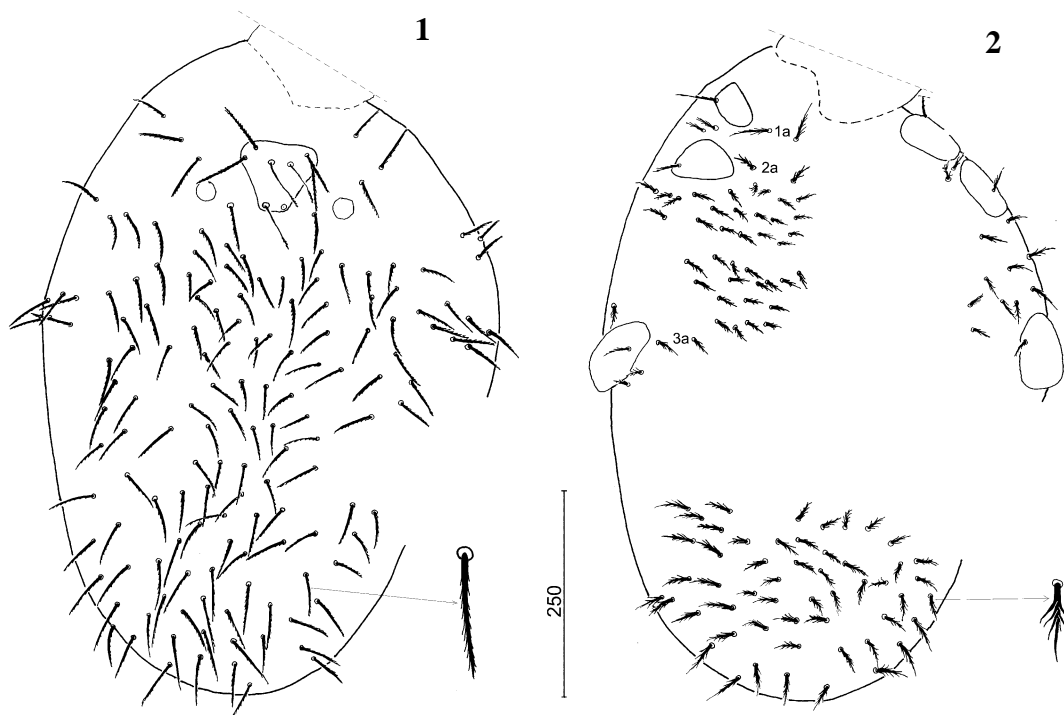
### Diagnosis

Palp tibial claw bifid, accessory claw club-shaped, palptarsus with two setae having long setules, AL 56, PL 74, L 84, W 98, Ta I 93, Ti III 145, IP 1729, fD 148.

### Description (larva)

For measurements see Table 1.

Idiosoma with 148 slightly barbed dorsal setae. Eyes posterolateral to scutum, circular, not on platelets,  $28 \times 26$  in diameter (Fig. 1). Scutum wider than long, with two pairs of barbed scutalae, AL < PL. Anterior sensilla (ASens) relatively long, with setules in their  $\frac{1}{2}$  distal part, posterior sensilla (PSens) somewhat longer, also with setules in their  $\frac{1}{2}$  distal part (Fig. 3).



**Figures 1–2.** *Abrolophus hieronimi* sp. nov. (larva). 1. Idiosoma, dorsal view; 2. Idiosoma, ventral view.

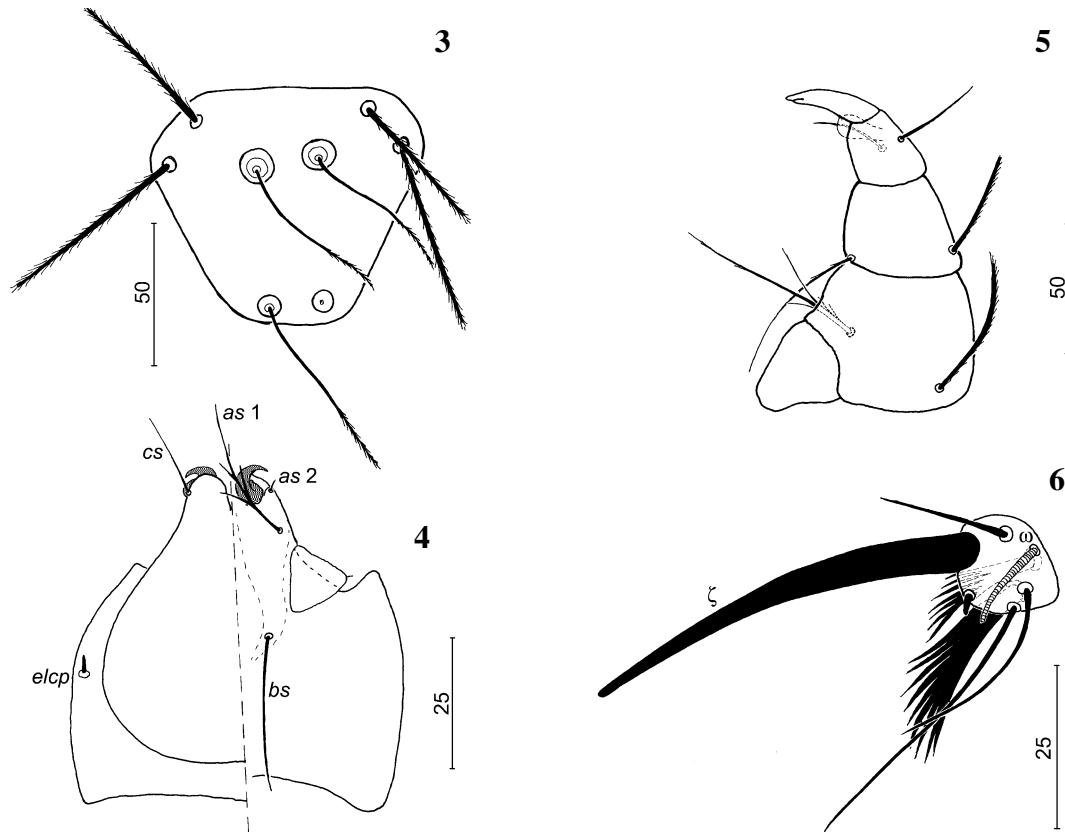
Ventral side of idiosoma with pair of setae *1a*, *2a* and *3a*, all slightly barbed. Four setae between coxae I and II, between coxae II and III 48 setae and 54 setae behind coxae III; all these setae barbed. Setae *1b* somewhat longer than setae *2b* and *3b*, all barbed (Fig. 2). fV = 54, NDV = 202.

Gnathosoma dorsally with adoral setae *cs* (32), located anteriorly and very short supracoxal setae *elcp* (Fig. 4a). Ventrally pair of short and nude setae *as*<sub>1</sub> (14), setae *as*<sub>2</sub> shorter with four setules and nude setae *bs* distinctly longer (60) (Fig. 4b). Palpfemur with two setae, dorsal seta with short adherent setules and ventral seta having at base relatively long protruding setules. Palpgenu with two barbed setae (PsGv 51  $\mu$ m) and

palptibia with two nude setae. Accessory claw club-shaped (Fig. 5). Odontus bifid in distal part. Palptarsus with 1  $\omega$  (14), 1  $\zeta$  (63), 2B (52, 24), 4N (Fig. 6).

**Table 1.** Metric data for *Abrolophus hieronimi* sp. nov. (larva).

Character	Holotype	Character	Holotype	Character	Holotype	Character	Holotype
IL	701	L	84	PsGd	45	Tf II	54
IW	518	W	98	Ta I	93	Bf II	66
AW	67	ISD	50	Ti I	118	Tr II	55
PW	84	GL	162	Ge I	95	Cx II	80
AL	56	DS	39–69	Tf I	58	Ta III	94
PL	74	<i>la</i>	27	Bf I	71	Ti III	145
ASens	64	<i>lb</i>	54	Tr I	58	Ge III	104
PSens	70	<i>2b</i>	39	Cx I	56	Tf III	69
AP	17	<i>3b</i>	39	Ta II	86	Bf III	67
AA	28	PsFd	64	Ti II	113	Tr III	64
SB	19	PsFv	57	Ge II	87	Cx III	96

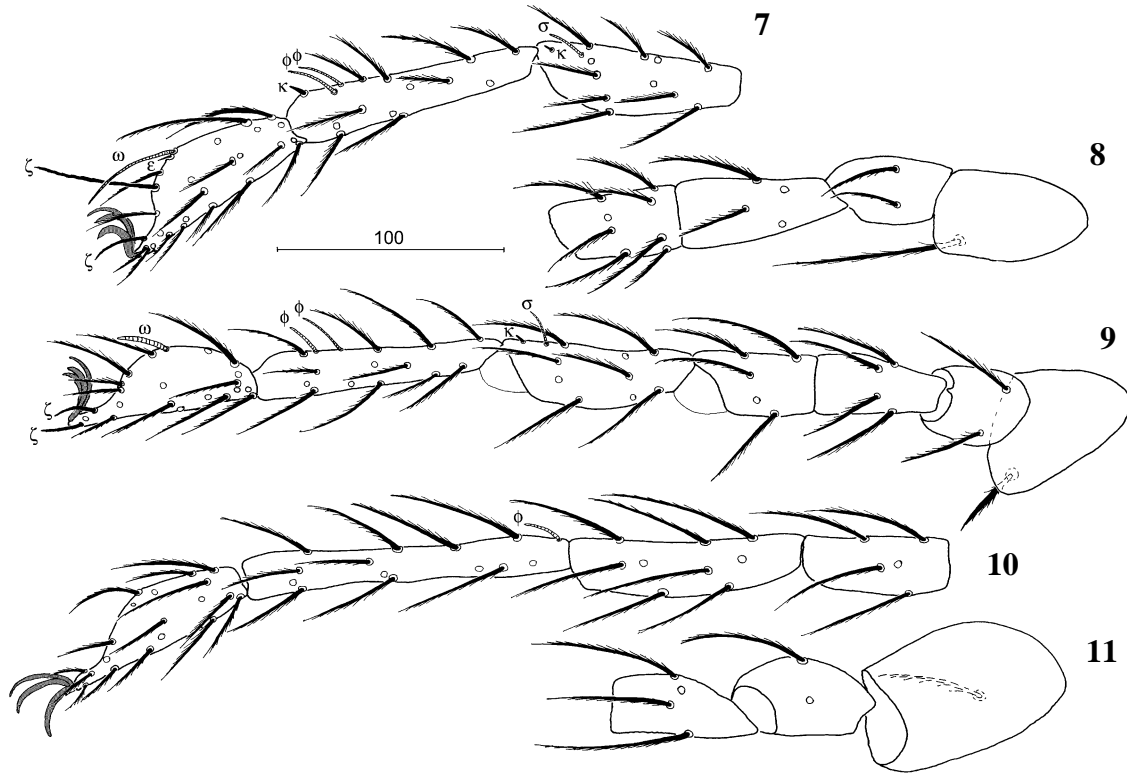


**Figures 3–6.** *Abrolophus hieronimi* sp. nov. (larva). 3. Scutum; 4. Dorsal view (left) and ventral view (right) of gnathosoma; 5. Palp; 6. Palptarsus.

Leg setal formula: Leg I: Ta - 1 $\omega$ , 1 $\epsilon$ , 2 $\zeta$ , 23B; Ti 2 $\phi$ , 1 $\kappa$ , 12B; Ge 1 $\sigma$ , 1 $\kappa$ , 11B, Tf 8B; Bf 4B; Tr 2B; Cx 1B (Figs. 7 & 8). Leg II: Ta 1 $\omega$ , 2 $\zeta$ , 19B; Ti 2 $\phi$ , 13B; Ge 1 $\sigma$  1 $\kappa$ , 9B; Tf 5B; Bf 4B; Tr 2B; Cx 1B (Fig. 9). Leg III: Ta 19B; Ti 1 $\phi$ , 13B; Ge 9B; Tf 5B; Bf 4B; Tr 2B; Cx 1B (Figs. 10 & 11). Legs lengths: I 549, II 541, III 639. IP = 1729.

*Type material*

The holotype was collected by R. Haitlinger from herbaceous plants, 19 April 2012, in Ponte di Zabia, ~12 km south of San Giuseppe Jato (37°54'N, 13°06'E), Sicily, Palermo province, Italy.



**Figures 7–11.** *Abrolophus hieronimi* sp. nov. (larva). 7. Leg I, tarsus – genu; 8. Leg I, telofemur – coxa; 9. Leg II; 10. Leg III, tarsus – telofemur; 11. Leg III, basifemur – coxa.

*Etymology*

The name of the species was derived from the name Hieronim.

*Remarks*

*Abrolophus hieronimi* sp. nov. belongs to the *Abrolophus* species group having palptarsus without comb-like seta and bearing  $fD > 90$  and  $Ti\ III > 120\ \mu m$ . This group includes *A. miyatakei* (Kawashima, 1958) and *A. yanlingica* (Zheng, 2002) (Kawashima, 1958, Zheng, 2002). It differs from *A. miyatakei* in  $fD$  (148 vs. ~100), the shorter  $PW$  (74 vs. 97),  $Ta\ I$  (93 vs. 114),  $Ti\ I$  (118 vs. 135),  $Ta\ III$  (94 vs. 110),  $Ti\ III$  (145 vs. 179),  $IP$  (1729 vs. 2033), the longer  $ASens$  (64 vs. 51) and  $PSens$  (70 vs. 61); from *A. yanlingica* in  $fD$  (148 vs. 126), the shorter  $W$  (98 vs. 122),  $AW$  (67 vs. 83),  $PW$  (84 vs. 110),  $ISD$  (50 vs. 61),  $AL$  (50 vs. 73),  $PL$  (74 vs. 117), leg I (all legs excluding coxae) (493 vs. 506), leg II (461 vs. 582) and leg III (543 vs. 679).

*Erythraeus (Erythraeus) picaforticus* Haitlinger, 2002

*Material examined*

One larva, 4 May 2012, San Martin n. Palermo (38°07'N, 13°22'E), ~850 m a.s.l., in forest from herbaceous plants; leg. R. Haitlinger.

*Distribution*: Spain (Balearic Islands, Mallorca), Italy (Sicily).

This species was described based on single specimen (Haitlinger, 2002). Second specimen of this species was collected in Sicily. Measurements for holotype and specimen from Sicily are given in Table 2. Leg setal formula: Leg I: Ta 1 $\omega$ , 2 $\zeta$ , 22N; Ti 2 $\phi$ , 1Cp, 1 $\kappa$ , 14B (right leg), 11B (left leg - anomaly), Ge 1 $\sigma$ , 1 $\kappa$ , 8B; Tf 5B; Bf 2B; Tr 1B; Cx 1B. Leg II: Ta 1 $\omega$ , 2 $\zeta$ , 21B; Ti 2 $\phi$ , 15B; Ge 1 $\kappa$ , 8B; Tf 5B; Bf 2B; Tr 1B; Cx 1B. Leg III: Ta 1 $\zeta$ , 21B; Ti 1 $\phi$ , 14B; Ge 8B; Tf 5B; Bf 2B Tr 1B; Cx 1B. This specimen differs from holotype in the number of normal setae on tarsus I (23 vs. 22), tarsus II (21 vs. 23), tibia III (15 vs. 14). Also tibia I has different number of normal setae (14 setae on left tibia, 13 setae on right tibia).

**Table 2.** Metric data for *Erythraeus (Erythraeus) picaforticus* Haitlinger, 2002 (larva) (1, holotype, Mallorca; 2, Sicily).

Character	1	2	Character	1	2	Character	1	2
IL	470	620	<i>1a</i>	64	69	Ti II	224	241
IW	370	443	<i>1b</i>	114	115	Ge II	140	152
AW	84	88	<i>2b</i>	53	50	Tf II	112	109
PW	136	155	<i>3b</i>	-	79	Bf II	144	125
AL	-	99	PsFd	60	66	Tr II	76	68
PL	84	75	PsGd	92	82	Cx II	96	107
ASens	46	40	ISD	56	69	Ta III	172	187
PSens	90	82	Ta I	156	174	Ti III	362	402
AP	54	62	Ti I	214	216	Ge III	188	195
AA	16	17	Ge I	166	175	Tf III	156	156
SB	24	20	Tf I	150	110	Bf III	146	155
L	120	126	Bf I	130	132	Tr III	74	69
W	190	210	Tr I	54	67	Cx III	88	107
GL	174	181	Cx I	74	67			
DS	60–76	62–103	Ta II	142	158			

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گونه جدیدی از *Abrolophus* (Acari: Prostigmata: Erythraeidae) و نخستین  
گزارش از *Erythraeus (E.) picaforticus* از سیسیل، ایتالیا

چکیده

گونه جدید *Abrolophus hieronimi* sp. nov. از سیسیل ایتالیا توصیف و ترسیم می‌شود. گونه  
*Erythraeus (E.) picaforticus* برای نخستین بار از ایتالیا گزارش می‌شود. تنها لارو هر  
دو گونه شناخته شده است.

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