

KAMERTONIA POLONICA GEN. AND SP. NOV. FROM POLAND WITH A KEY TO THE WORLD GENERA OF "CONALAE-LESS" ERYTHRAEINAE (ACARI: ACTINEDIDA: ERYTHRAEIDAE)

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Abstract.— *Kamertonia* gen. nov. is described from Poland and compared with all World genera of Erythraeinae without so-called cone-like setae on palptibia and palpgenu. *K. polonica* sp. nov. is described from Poland as an exclusively psammophilous species connected with sand dunes and sand beaches.



Key words.— Acari, Parasitengona, Erythraeidae, new genus, new species, taxonomy, key.

INTRODUCTION

The subfamily Erythraeinae comprises seventeen nominate genera, known from postlarval instars, including subgenus *Erythraeus* (*Helladerythraeus*) Beron, 1988. Two groups can be distinguished: the so called "conalae" and "conalae-less". There have been nine genera of "conalae-less" Erythraeinae described till now: *Paraphanolophus* Smiley, 1968, *Erythraeus* Southcott, 1961, *Curteria* Southcott, 1961, *Eatoniana* Cambridge, 1898, *Rainbowia* Southcott, 1961, *Erythrites* Southcott, 1961, *Erythroides* Southcott, 1961, *Erythrellus* Southcott, 1961 and *Neosmaris* Hirst, 1926 (Southcott 1961, Welbourn and Young 1987, Beron 1988, Gabryś 1989, 1991, 1992b). In the course of systematic study of Polish Erythraeidae, six individuals, exclusively psammophilous, have been recognized as new species and new genus of "conalae-less" Erythraeinae.

MATERIAL AND METHODS

All specimens have been collected directly from the sand dunes and sand beach surface. Material was cleared in cold KOH (<10%) and mounted in Faure's medium (see Gabryś 1994).

The terminology follows Southcott (1961), Welbourn and Young (1987) and Gabryś (1989, 1992a, b, 1999). All drawings were made by camera lucida, all measurements are in micrometers (µm) unless stated otherwise.

TAXONOMY

Kamertonia gen. nov.
(Figs 1–18, Table 1)

Etymology. The genus name is derived from Polish term "Kamerton" which means tuning fork and comes from Greek "kamara" – room, and "tonos" – tune; gender: feminine.

Type species. *Kamertonia polonica* sp. nov.

Diagnosis. Medium size Erythraeinae, green with metallic lustre in lifetime, idiosoma covered with characteristic, bifurcate, uniform in shape and length setae which resemble a tuning fork (Figs 6, 7, 11), crista metopica short with relatively weakly sclerotized anterior part of anterior sensillary area (Fig. 5), palps narrow without cone-like setae (conalae) on palptibia, and without crescent cavity at proximal-ventral side of palpgenu (Figs 2, 3); vestigiala on tibia I cylindrical (equal in width) (Fig. 13). *Kamertonia* gen. nov. differs from all other "conalae-less" Erythraeinae mainly in the specific structure of idiosomal setae and also in the combination of characters given in diagnosis.

Genus monotypic.

Description. As for the species.

Kamertonia polonica sp. nov.
(Figs 1–18, Table 1)

Etymology. The species epithet is derived from the name of the country it is described and, till now, exclusively known from.

Diagnosis. Adult. As for the genus.

Description (based on holotype, supplemented by paratypes, metric data in Table 1).

Female. Medium sized Erythraeidae, body oval (Fig. 1), life coloration green metallic (structural coloration), brown-reddish in alcohol, moderately densely covered with, in general, uniform dorsal and ventral setae (some of the last ones of different shape) (Figs 6, 7, 11, 12).

Gnathosoma. Rostrum typical with scarce straight setae, more numerous on ventral side; chelicerae typical, dagger-like, contracted into idiosoma (Fig. 5); palps relatively slender, all segments elongate, palptarsus long, clavate, palptibial claw prominent with distinct denticle at base; all palpal segments covered with not very dense, api-

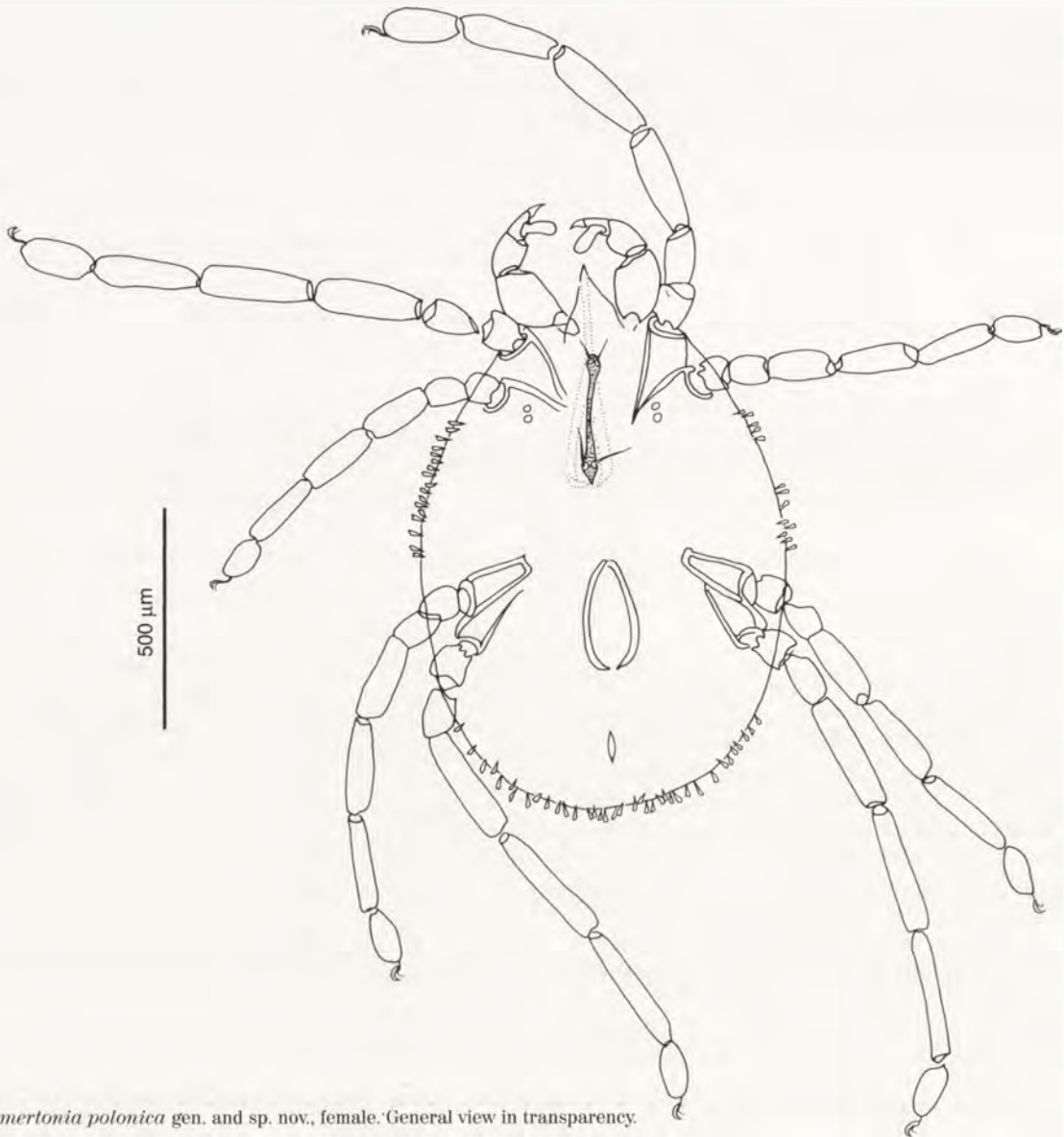


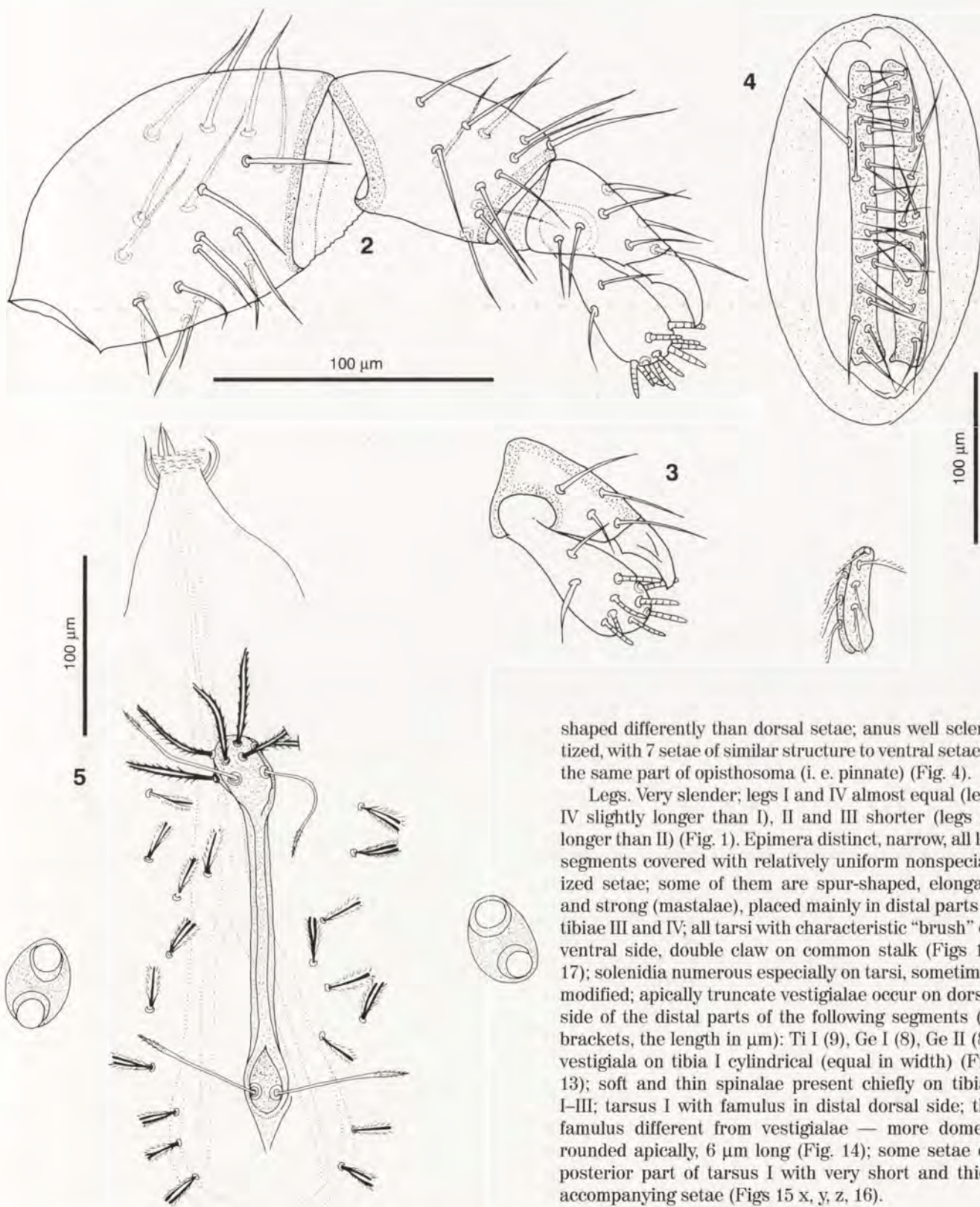
Figure 1. *Kamertonia polonica* gen. and sp. nov., female. General view in transparency.

cally pointed setae, numerous solenidia aggregated mainly at the tip of palptarsus; no conalae on any segment, no crescent cavity in palpgenu (Figs 2, 3).

Dorsal side of idiosoma. Border between aspidosoma and opisthosoma unclear; dorsal setae of characteristic structure, uniform, slightly asymmetrical, somewhat longer at the end of the body; in lateral view, a short stem starts at the base of the seta, then it divides into two branches, one of them straight and the other one slightly bent at base what makes it look shorter; the whole seta resembles a tuning fork; both branches covered with setulae; from above or from below the two rami seem to form one strongly hirsute element (Figs 6, 11). Crista metopica (Fig. 5) short, anterior sensillary area elongate oval with no clear borders, i. e. the rod of crista metopica is not a uniform sclerite in the anterior part and forms a weakly sclerotized anterior sensillary area which bears two sensillary setae ASens (Fig. 8) almost identical with PSens in structure and length; poste-

rior sensillary area oval in outline, not completely sclerotized posteriorly, bears two relatively short, rigid, setulose and slightly dilate apically sensillary setae PSens (Fig. 9). The nonsensillary setae AL (shorter than ASens and PSens) placed on the anterior sensillary area, and at the immediate proximity of sensillary area; the AL bear two branches like dorsal setae but are narrow, dagger-like, "pointed" apically and covered with setulae on both sides (Fig. 10). The holotype has two AL setae broken. The two sessile double eyes are at the sides of crista metopica, at $1/4$ its length from its posterior edge; the double eyes on each side placed on one common oval plate (Fig. 5).

Ventral side of idiosoma. Post-ventral setae similar to dorsal ones (Fig. 7), mid-ventral somewhat longer than dorsal ones, much slender, distance between branches (in lateral view) much shorter; post-ventral and mid-ventral setae differ in density and length of setulae (Fig. 12). Genital opening long, valves tapering, labialae thorn-like, almost smooth,



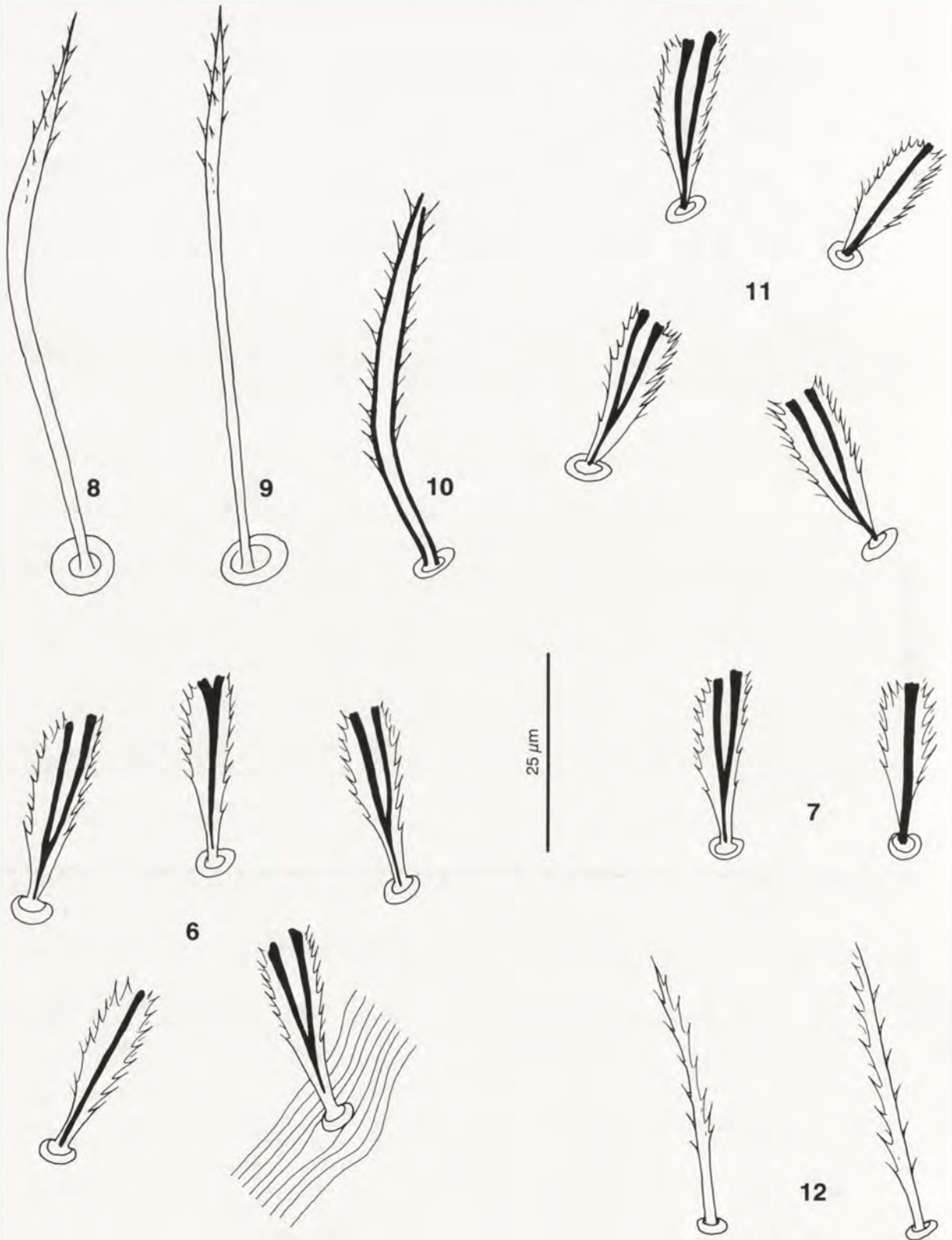
Figures 2–5. *Kamertonía polonica* gen. and sp. nov., female. (2) Left palp medially; (3) left palptarsus and palptibia laterally; (4) genital-anal region; (5) region of crista metopica.

shaped differently than dorsal setae; anus well sclerotized, with 7 setae of similar structure to ventral setae of the same part of opisthosoma (i. e. pinnate) (Fig. 4).

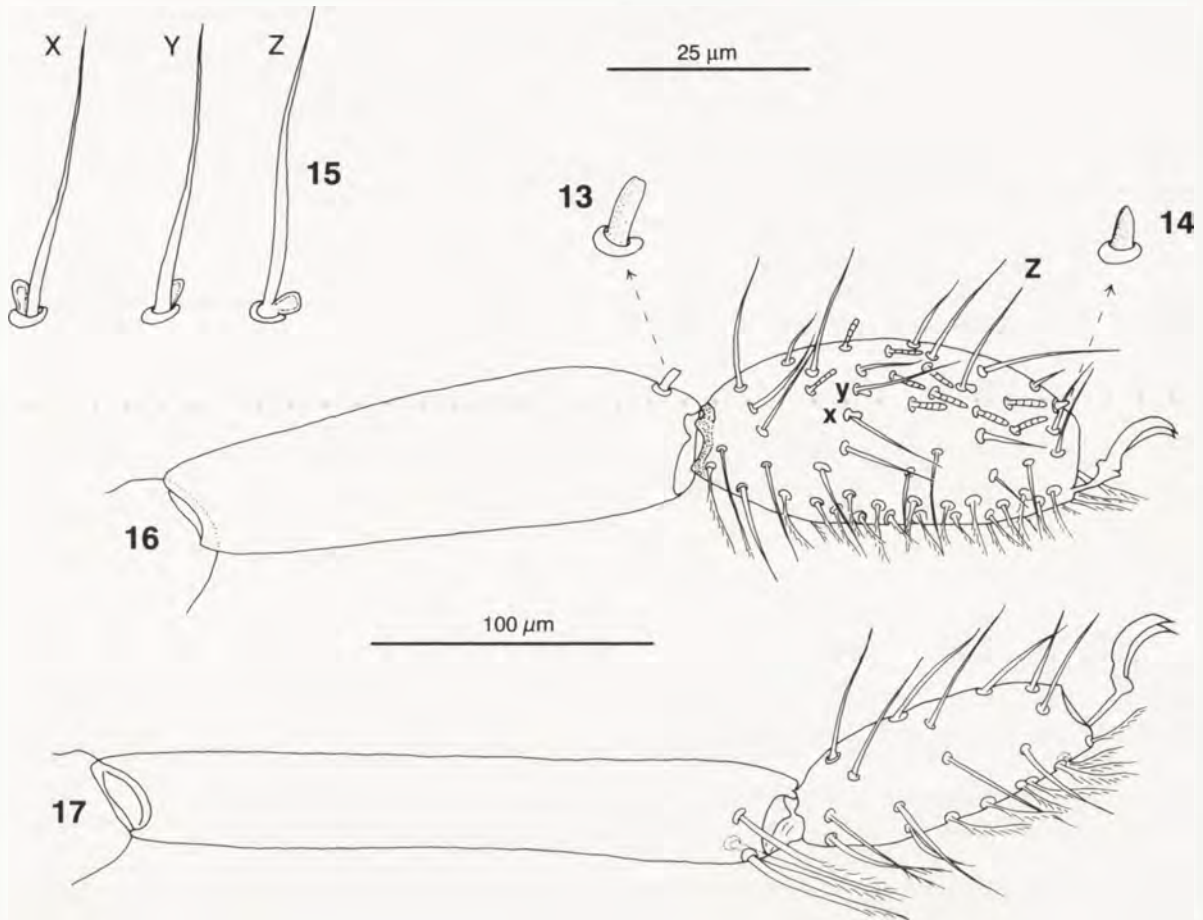
Legs. Very slender; legs I and IV almost equal (legs IV slightly longer than I), II and III shorter (legs III longer than II) (Fig. 1). Epimera distinct, narrow, all leg segments covered with relatively uniform nonspecialized setae; some of them are spur-shaped, elongate and strong (mastalae), placed mainly in distal parts of tibiae III and IV; all tarsi with characteristic “brush” on ventral side, double claw on common stalk (Figs 16, 17); solenidia numerous especially on tarsi, sometimes modified; apically truncate vestigialae occur on dorsal side of the distal parts of the following segments (in brackets, the length in μm): Ti I (9), Ge I (8), Ge II (8); vestigiala on tibia I cylindrical (equal in width) (Fig. 13); soft and thin spinalae present chiefly on tibiae I–III; tarsus I with famulus in distal dorsal side; the famulus different from vestigialae — more domed, rounded apically, 6 μm long (Fig. 14); some setae on posterior part of tarsus I with very short and thick accompanying setae (Figs 15 x, y, z, 16).

Male, nymph and larva not known.

Type material. Holotype — SL/6/1, female, collected 8 August 1988, Orzechowo near Ustka (Pomorskie Province, N Poland, see Fig. 18, loc. 1), *Empetro nigri-*



Figures 6–12. *Kamertonina polonica* gen. and sp. nov., female. (6) Post-dorsal setae; (7) post-ventral setae; (8) ASens seta; (9) PSens seta; (10) AL seta; (11) mid-dorsal setae; (12) mid-ventral setae.



Figures 13-17. *Kamertonia polonica* gen. and sp. nov., female. (13) Vestigial seta on Ti I; (14) famulus; (15 x, y, z) "double" setae — main setae with the accompanying ones on posterior part of Ta I; (16) tarsus and tibia I; (17) tarsus and tibia IV.

Pinetum, sand dune, leg. L. Borowiec; deposited in Museum of Natural History, Wrocław University (MU 815).

Five paratypes, females, collected 2–14 July 1986 near Gdańsk-Górki Wschodnie (Pomorskie Province, N Poland, see Fig. 18, loc. 2) on sand dune in pine forest (GD/4/1–GD/4/4) and sand beach (GD/5/4), leg. W. Jędrzykowski, distributed as follows: GD/4/2, GD/4/4 and GD/5/4 in author's collection, GD/4/1 in Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Germany, GD/4/3 in Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA.

Distribution. See "Type material" and Fig. 18.

KEY TO THE GENERA OF THE WORLD "CONALAE-LESS" ERYTHRAEINAE (BASED ON SOUTHCOTT 1961 AND WELBOURN AND YOUNG 1987)

- 1(2). Crista metopica obsolete, with no rod, only anterior and posterior sensillary areas present
 *Neosmaris* Hirst, 1926 (New Zealand)
- 2(1). Crista metopica normally developed 3

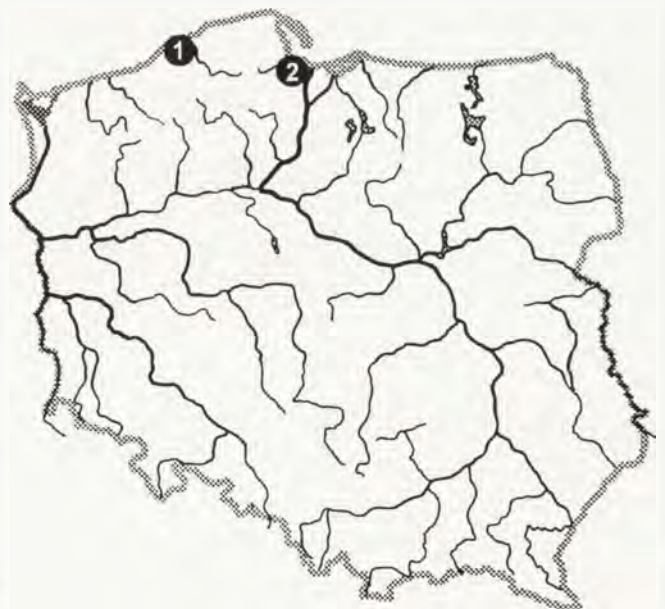


Figure 18. Localities of *Kamertonia polonica* gen. and sp. nov. in Poland; numbers correspond to those in the text: 1. holotype; 2. paratypes.

- 3 (4). Dorsal idiosomal setae modified to an imbricate scale-like ones *Erythrellus* Southcott, 1946 (Australia) 5
- 4 (3). Dorsal idiosomal setae of a different shape 5
- 5 (6). Dorsal idiosomal setae bifurcate *Kamertonia* gen. nov. (Europe) 7
- 6 (5). Dorsal idiosomal setae of a different shape 7
- 7 (8). Palptibia short, an equilateral cone, palptarsus short, hemispherical or almost globular *Rainbowia* Southcott, 1961 (Australia) 9
- 8 (7). Palptibia and palptarsus of a different shape ... 9
- 9(12). Legs provided with scattered modified serrate setae (serratae) 10
- 10(11). Dorsal idiosomal setae uniform in shape and size *Erythroides* Southcott, 1946 (Australia) 10
- 11(10). Dorsal idiosomal setae uniform in shape but of two distinct sizes *Paraphanolophus* Smiley 1968 (North America) 13
- 12 (9). Legs without modified serrate setae (serratae) 13
- 13(14). Posterior legs provided with a plume of elongate setae (plumalae) *Eatoniana* Cambridge, 1898 (Old World) 15
- 14(13). Posterior legs without a plume of elongate setae 15
- 15(16). Dorsal idiosomal setae of two distinct types, short setae with long basal setulae, palptibia long, slender, curved with small and slender palptibial claw *Erythraeus* Southcott, 1961 (North and Central America) 17
- 16(15). Dorsal idiosomal setae and palptibia different .. 17
- 17(18). Anterior sensillary area of crista metopica well behind rostrum, dorsal idiosomal setae setiform,

- not longer than 140 µm (adults) or 80 µm (nymphs) *Curteria* (Europe)
- 18(17). Anterior sensillary area at rostrum, if dorsal idiosomal setae setiform — their length up to 250 µm (adults) or 140 µm (nymphs) *Erythrites* Southcott, 1961 (Australia).

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Character	Holotype SL/6/1	Paratype GD/4/2	Paratype GD/5/4
1	2	3	4
LB	1078	1047	1448
WB	724	740	862
ASRo	193	163	133
PSG	221	210	448
GAn	158	101	233
GOp	304	258	446
AnOp	75	83	142
MDS	18–26	20–26	20–24
PDS	22–30	26–34	26–30
MVS	22–32	24–32	24–32
PVS	20–40	26–30	26–40
AL (n)	6	9	10
AL	47–52	42–50	46–58
ASE= ASens	72	71	80
PSE= PSens	72	80	82
CML	226	256	256
CMW	6	8	10
PSBp	28	36	36
ISD	166	200	197
ASBa	32	20	23
SBa	17	20	18
SBp	12	16	15
ASAL	–	51	–
ASAW	–	44	–
PSAL	55	59	67
PSAW	26	33	36
O/a/p	51/14/14	51/14/16	50/16/18
O-O	248	256	308
OCM	124	128	154
OAS	102	113	150
OPS	64	87	47
ExG (L)	198	227	230
ExGLa (L)	33–40	35–40	33–42
An (L)	67	63	65
AnLa (L)	25–28	26–30	29–32
Palps			
PaFe (W)	79	93	89
PaGe (W)	45	55	55
PaTi (W)	32	36	36
PaTa (L/W)	53/20	57/25	51/24
PaTr (L)	48	49	49

1	2	3	4
PaFe (L)	105	113	107
PaGe (L)	61	63	63
PaTi (L)	48	45	44
PaTiCl (L)	28	30	30
PaL (sum)	290	300	293
Legs (L)			
I Cx	154	186	166
Tr	51	59	59
Bf	103	107	111
Tf	182	201	201
Ge	190	217	205
Ti	178	201	194
Ta	126	146	146
Ta (H)	63	67	67
LI (sum)	984	1117	1082
II Cx	122	150	146
Tr	47	43	47
Bf	63	67	67
Tf	114	126	111
Ge	122	138	126
Ti	138	150	154
Ta	83	99	99
Ta (H)	41	47	47
LII (sum)	689	773	750
III Cx	142	150	142
Tr	47	51	51
Bf	63	79	67
Tf	142	158	146
Ge	150	178	166
Ti	174	194	197
Ta	95	100	107
Ta (H)	36	43	43
LIII (sum)	813	910	876
IV Cx	178	197	182
Tr	59	63	59
Bf	91	107	91
Tf	201	233	205
Ge	201	249	225
Ti	233	257	257
Ta	107	114	126
Ta (H)	36	48	44
LIV (sum)	1070	1220	1145
IP	3556	4020	3853

Table 1. Metric data of *Kamertonia polonica* gen. and sp. nov. for holotype and two paratypes.