

GRZEGORZ GABRYŚ

A key to postlarval Erythraeidae (Acari, Actinotrichida) of Poland

Department of Zoology, Faculty of Biological Sciences, University of Zielona Góra, ul. Z. Szafrana 1,
65-516 Zielona Góra, e-mail: g.gabrys@wnb.uz.zgora.pl

Abstract: The present work contains the first ever full key to all species of Erythraeidae known from active postlarval instars and recorded in Poland. Until present, more than 60 species of Erythraeidae were confirmed from Poland. 30 species are known from postlarval forms (adulti and/or deutonymphs). The remaining species are known exclusively as larvae.

Key words: Taxonomy, Parasitengona, Erythraeoidea, diagnostic characters

INTRODUCTION

The systematics of Erythraeidae needs stabilization. Erythraeidae suffer from “dual systematics”, which is also a problem in other groups of terrestrial Parasitengona because some postlarval and larval instars described as separate species have never been synonymized. Therefore, it is a common practice to create separate keys for larvae and active postlarval instars (deutonymphs and adults) (cf. WOHLTMANN *et al.* 2007). Until present, more than 60 species of Erythraeidae were confirmed from Poland. 30 species are known from postlarval forms (adulti and/or deutonymphs) (GABRYŚ 1990, 2016a, b, GABRYŚ & MĄKOL 2008, MĄKOL *et al.* 2011, GABRYŚ & ROLAND 2016). The remaining species are known exclusively as larvae (GABRYŚ & MĄKOL 2008). The present work contains the first ever full key to all 30 species of Erythraeidae known from active postlarval instars and recorded in Poland.

MATERIAL AND METHODS

The key was constructed on the basis of multiyear field research in Poland, material from various collections and material collected by other investigators (GABRYŚ 1990). The present work contains illustrations of diagnostic morphological characters that are useful in the interpretation of individual species. The terminology related to morphology is given after SOUTHCOTT (1961), GABRYŚ (1989, 1992, 1999, 2000a, 2000b), MĄKOL & GABRYŚ (2005), WOHLTMANN *et al.* (2007) and GABRYŚ & ROLAND (2016).

In the key, dimentions in parentheses refer to adults; if they deal also with deutonymphs, then are marked by symbols “Ad” – adult, or “N” – deutonymph.

All measurements related to the specimens collected in Poland and are given in µm.

LIST OF POSTLARVAL ERYTHRAEIDAE RECORDED FROM POLAND:

Erythraeidae ROBINEAU-DESVOIDY, 1828
Erythraeinae ROBINEAU-DESVOIDY, 1828

Erythraeus LATREILLE, 1806

- E. adpendiculatus*** (SCHRANK, 1781)
- E. cinereus*** (DUGÈS, 1834)
- E. goricensis*** GABRYŚ, 2016
- E. opilionoides*** (C. L. KOCH, 1837)
- E. phalangoides*** (DE GEER, 1778)
- E. regalis*** (C. L. KOCH, 1837)
- E. rupestris*** (LINNAEUS, 1758)

Curteria SOUTHCOTT, 1961

- C. episcopalalis*** (C. L. KOCH, 1837)
- C. southcotti*** GABRYŚ, 1992

Kamertonia GABRYŚ, 2000

- K. polonica*** GABRYŚ, 2000

Leptinae BILLBERG, 1820

Leptus LATREILLE, 1796

- L. longipilis*** (BERLESE, 1910)
- L. molochinus*** (C. L. KOCH, 1837)
- L. phalangii*** (DE GEER, 1778)
- L. rubricatus*** (C. L. KOCH, 1837)
- L. trimaculatus*** (ROSSI, 1794)
- L. vertex*** (KRAMER, 1886)

Callidosomatinae SOUTHCOTT, 1957

Charletonia OUDEMANS, 1910

- Ch. cardinalis*** (C. L. KOCH, 1837)
- Ch. globigera*** (BERLESE, 1885)

Abrolophinae WITTE, 1995

Abrolophus BERLESE, 1891

- A. artemisiae*** (SCHRANK, 1803)
- A. crassitarsus*** (SCHWEIZER, 1951)
- A. miniatus*** (HERMANN, 1804)
- A. norvegicus*** (THOR, 1900)
- A. passerinii*** (BERLESE, 1904)
- A. quisquiliarus*** (HERMANN, 1804)
- A. rhopalicus*** (C. L. KOCH, 1837)
- A. strojnyi*** GABRYŚ, 1992
- A. tardus*** (HALBERT, 1915)

Balaustiinae GRANDJEAN, 1947

Balaustium von HEYDEN, 1826

- B. murorum*** (HERMANN, 1804)
- B. unidentatum*** (TRÄGARDH, 1904)
- B. xerothermicum*** GABRYŚ, 2000

KEYS TO ERYTHRAEIDAE OF POLAND

A key to developmental instars and sexes of Erythraeidae

- 1(2). Three pairs of legs, crista metopica absent, aspidosoma with oval or polygonal scutum **larva.**
- 2(1). Four pairs of legs, linear crista metopica present (sometimes reduced to a straight ‘keel’ or ‘rod’) with two pairs of trichobothria **3.**
- 3(4). Genital opening formed as a small cleft ‘urvulva’ (surrounded by scarce sclerite), always shorter than anus **deutonymph.**
- 4(3). Genital opening fully developed, surrounded by two pairs of valves, several times longer than anus **5.**
- 5(6). Strongly sclerotized genital sclerite present **adult, male.**
- 6(5). Genital sclerite absent **adult, female.**

A key to subfamilies, genera and species of postlarval Erythraeidae of Poland

- 1(22). Eyes double (Figs. 1, 2) **Erythracinae.**
- 2(17). Conalae present (Figs. 8, 9) **Erythraeus.**

- 3(4). Dorsal opisthosomal setae very long (Ad up to 370, N up to 220), setiform (Fig. 23); serratalae very strong and well developed (Fig. 30) *E. opilionoides*.
- 4(3). Dorsal opisthosomal setae shorter, never exceed 180 (Ad) and 160 (N) 5.
- 5(8). At least part of dorsal opisthosomal setae very short (40-50) and pineal; serratalae slim (Fig. 26, 27) 6.
- 6(7). All dorsal opisthosomal setae uniform, very short (25-50), pineal (Fig. 17); crista metopica with distinct scutum *E. phalangoides*.
- 7(6). Postdorsal setae much longer (up to 150) than middorsal setae; middorsal setae short (40-80) and pineal (Fig. 16); scutum absent *E. gorcensis*.
- 8(5). Very short (40-50) and pineal dorsal opisthosomal setae absent 9.
- 9(12). Serratalae narrow, poorly developed, on legs III and IV and never on legs I and II (Figs. 24, 25) 10.
- 10(11). Palptibia with 4-7 conalae and palpgenu with 4-7 conalae; semiconalae on palpgenu absent; crista metopica with strongly sclerotized, clavate scutum dilated anterad; dorsal setae of various lengths (40-160), spiniform (Fig. 21) *E. adpendiculatus*.
- 11(10). Palptibia with 3-5 conalae (Ad) and 2-3 (N), irregularly distributed; no conalae on palpgenu; semiconalae (Fig. 10) on palpgenu numerous both in Ad and N; scutum absent; dorsal opisthosomal setae uniform, setiform (50-90, rarely 120) (Fig. 18) *E. rupestris*.
- 12(9). Serratalae well developed on all legs 13.
- 13(14). Serratalae in all legs more or less uniform, lateral teeth elongate (Fig. 28); palptibia with 4-6 conalae (Ad) and 2-3 (N); palpgenu with 1-3 conalae (Ad); N without conalae on palpgenu; dorsal opisthosomal setae setiform, almost not narrowing apically (Fig. 22) *E. regalis*.
- 14(13). Serratalae on legs III and IV stouter than on I and II, robust, lateral teeth triangular, wide (Fig. 29); palptibia with 3-6 conalae (Ad) and 2-3 (N); no conalae on palpgenu; at least some dorsal opisthosomal setae short, lanceolate at apex 15.
- 15(16). Greater part of dorsal opisthosomal setae short (40-70), lanceolate (Fig. 19) *E. cinereus, male*.
- 16(15). Short (40-70) dorsal opisthosomal lanceolate setae (Fig. 19) distributed among considerably longer (40-170) setiform setae (Fig. 20) *E. cinereus, female*.
- 17(2). Conalae absent 18.
- 18(19). Dorsal idiosomal setae bifurcate, plumose, very short (up to 36) (Fig. 37); anterior sensillary setae (ASens) more or less equal to posterior sensillary setae (PSens), always shorter than 85 (Figs. 33, 35, 36); nonsensillary setae AL (= AM) bifurcate, short (up to 60) (Fig. 34); vestigiala on tibia I and genu I not dilate or swollen (Fig. 44) *Kamertonia, K. polonica*.
- 19(18). Dorsal idiosomal setae not bifurcate, spiniform; posterior sensillary setae (PSens) longer than anterior sensillary setae (ASens) (ASens always longer than 120, PSens always longer than 150); nonsensillary setae AL (= AM) not bifurcate, always longer than 70; vestigiala on tibia I and genu I always dilate or swollen *Curteria*.
- 20(21). More than 20 nonsensillary setae AL (= AM) (Fig. 31); dorsal opisthosomal setae spiniform, flexible (up to 95) (Figs. 40, 41); vestigiala on tibia I and genu I barrel swollen (Fig. 42) *C. southcotti*.

- 21(20). Less than 10 nonsensillary setae AL (= AM) (Fig. 32); dorsal opisthosomal setae spiniform, rigid (Ad up to 135, N up to 80) (Figs. 38, 39); vestigiala on tibia I and genu I only slightly dilate in middle (Fig. 43) *C. episcopal**s*.
 22(1). Eyes single (Figs. 3, 4, 5, 6) 23.
 23(56). Dorsal side of idiosoma without specific orbicular structures – urnulae (Figs. 6, 7); palptibial claw without denticle (Figs. 12, 13, 14) 24.
 24(35). Eyes at the level of anterior half of crista metopica (Fig. 3); setules on dorsal setae transformed into scales, teeth or fish-bone like; palptarsus cylindrical (Fig. 12) *Leptinae, Leptus*.
 25(26). Dorsal side of idiosoma with three big, roundish light spots (setae are pale), two of them symmetrically at ‘shoulders’ and one in middle of posterior part of opisthosoma (Fig. 45); dorsal opisthosomal setae spindle-shaped, covered with fish-bone setules, elongate (Fig. 46) *L. trimaculatus*.
 26(25). Light spots on dorsal side of idiosoma absent; dorsal opisthosomal setae of different shape 27.
 27(28). Dorsal opisthosomal setae very long (Ad up to 150, N up to 110), slender, setiform, truncate apically, with a ‘crown’ of rounded denticles at top (Fig. 53) *L. longipilis*.
 28(27). Dorsal opisthosomal setae shorter, of different shape 29.
 29(32). Dorsal opisthosomal setae very short, pineal (Ad up to 40, N up to 50) (Fig. 50) or plumose (Ad up to 32, N up to 35) (Fig. 51) 30.
 30(31). Dorsal opisthosomal setae pineal, wide, stout, short (20-40), different from ventral opisthosomal setae; seta stem stout, covered with several columns of setules transformed into elongate teeth strongly protruding sideways; setae at posterior end of opisthosoma with 4-5 teeth in each column (Fig. 50); in N setae up to 50, more slender and teeth more adherent *L. vertex*.
 31(30). Dorsal opisthosomal setae plumose (16-32), similar to ventral opisthosomal setae; seta stem thinner and covered with several columns of setules transformed into gentle fish-bones; setae at posterior end of opisthosoma with 8-9 fish-bones in each column (Fig. 51); in N setae up to 35, more slender *L. molochinus*.
 32(29). Dorsal opisthosomal setae longer, if plumose then up to 65; if of different shape Ad up to 70, N up to 60 33.
 33(34). Dorsal opisthosomal setae of two types: 1/ in middle of opisthosoma shorter, spindle-shaped, covered with fish-bone setules (Fig. 49), 2/ near anterior region of crista metopica, at body sides and in posterior part of opisthosoma longer (Ad 45-70, N up to 60), cylindrical, covered with setules transformed into fish-bones and teeth; teeth arranged into columns at three sides of seta, the fourth side is a characteristic row lacking teeth (Figs. 47, 48) *L. phalangii*.
 34(33). Dorsal opisthosomal setae of one type, plumose, varying in length (25-65), setules transformed into fish-bones; at the posterior part of opisthosoma setae truncate apically, with 10-12 fish bones in each column (Fig. 52) *L. rubricatus*.
 35(24). Eyes at the level of posterior half of crista metopica (Figs. 4, 5); dorsal opisthosomal setae simple – smooth or plumose; palptarsus spherical or conical (Figs. 13, 14) 36.

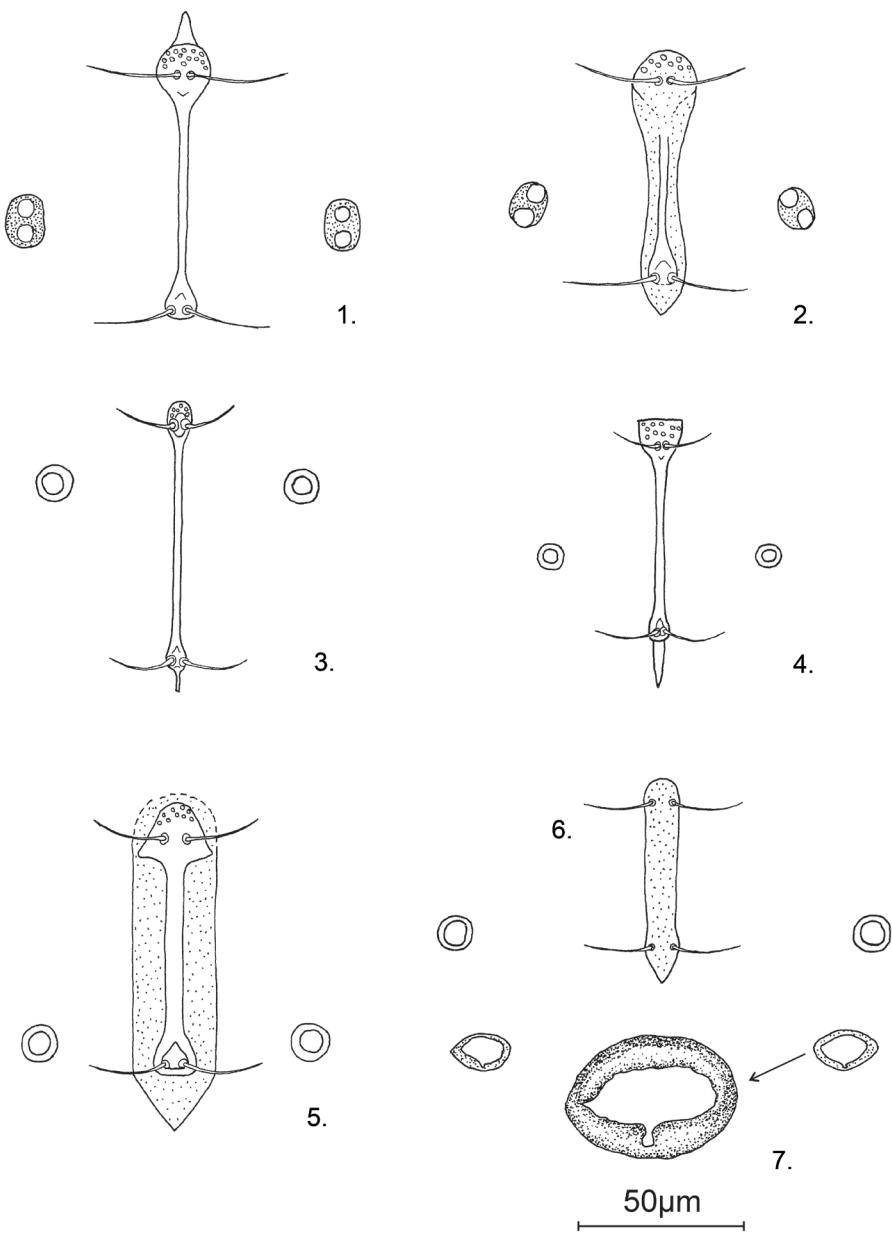
- 36(39). Palptarsus disproportionately enlarged, spherical in outline, considerably protruding behind apex of palptibial claw (Fig. 13); eyes closer to the level of middle part of crista metopica (Fig. 4) ***Callidosomatinae, Charletonia.***
- 37(38). Dorsal opisthosomal setae of one type (Fig. 63) ***Ch. globigera.***
- 38(37). Dorsal opisthosomal setae of two types: among basic setae (Fig. 64), there are strong, long (Ad 70-120, N up to 70) spiniform setae (Fig. 65) ***Ch. cardinalis.***
- 39(36). Palptarsus not enlarged, conical, if protruding behind palptibial claw then only slightly (Fig. 14); eyes closer to the level of posterior part of crista metopica (posterior sensillary area) (Fig. 5) ***Abrolophinae, Abrolophus.***
- 40(41). Dorsal posterior opisthosomal setae rod-shaped, rounded at apex, covered with setules excluding base and apex; anterior sensillary area of crista metopica triangular in outline, incised at middle, sharpened apically ***A. tardus.***
- 41(40). Dorsal posterior opisthosomal setae of different shape; if anterior sensillary area of crista metopica triangular in outline, then always narrowly rounded at apex 42.
- 42(47). Anus weakly sclerotized, bare (Fig. 54) 43.
- 43(44). Dorsal opisthosomal setae spiniform, smooth, stout and slightly curved, at most with a few slight spikes on the outer edge (Fig. 69) ***A. norvegicus.***
- 44(43). Dorsal opisthosomal setae plumose (Figs. 73, 74) 45.
- 45(46). Palptarsus unusually shortened, always over twice as wide as long at base (Fig. 58); crista metopica short (ISD Ad below 150, ISD N below 100), posterior process absent, ASens distinctly shorter than PSens ***A. strojnyi.***
- 46(45). Palptibia not shortened, always less than 1.4 times as wide as long at base (Fig. 59); crista metopica long (ISD Ad above 180, ISD N above 130), posterior process distinct, long, ASens longer or equal PSens ***A. passerinii.***
- 47(42). Anus well sclerotized, setulose (Fig. 55) 48.
- 48(51). Dorsal opisthosomal setae plumose, with not numerous setules at the seta stem (up to 12 setules altogether); setules relatively long, their thickness comparable to seta stem (Figs. 70, 71, 72) 49.
- 49(50). Dorsal opisthosomal setae (excluding the most posterior ones) covered with setules up to 2/3, the apex of seta stem strongly dominating over setules (Figs. 71, 72); palptarsus slender and elongate, about three times as long as wide; anterior sensillary area of crista metopica widely rounded; in males, lateral anterior processes of genital sclerite situated at anterior part of sclerite and very slightly curved anterad (Fig. 57) ***A. artemisiae.***
- 50(49). Dorsal opisthosomal setae (excluding the most posterior ones) covered with setules almost up the apex of seta stem, which equals the last setules or slightly dominates (Fig. 70); palptarsus hemispherical, about two times as long as wide; anterior sensillary area of crista metopica rhomboidal in outline with slightly convex sides, narrowly rounded at apex; in males, lateral anterior processes of genital sclerite situated at half length of sclerite and strongly curved anterad (Fig. 56) ***A. rhopalicus.***
- 51(48). Dorsal opisthosomal setae needle-like, awl-shaped, dagger-like, with numerous setules; setules minute, short, considerably thinner than seta stem (Figs. 66, 67, 68) 52.

- 52(53). Dorsal opisthosomal setae (also at posterior part of opisthosoma) thin, elongate, delicate, needle-like, very indistinctly setulose (Fig. 68); anterior sensillary area of crista metopica large, rhomboidal in outline, slightly flattened anteriorly and widely rounded (Fig. 62); palptarsus almost as wide at base as at apex *A. crassitarsus*.
- 53(52). Dorsal opisthosomal setae (particularly at posterior part of opisthosoma) wider, stout, awl-shaped or dagger-like, distinctly setulose on whole surface (Figs. 66, 67); anterior sensillary area of crista metopica of different shape; palptarsus wider at base than at apex 54.
- 54(55). Anterior sensillary area of crista metopica elongate, triangular, almost acuminate at apex, usually with 1-2 (Ad) and 0-2 (N) nonsensillary setae AL (= AM); rod of crista metopica dilated towards posterior sensillary area; posterior process, if present, slightly marked and short (Fig. 60); palptarsus very wide, short, widely rounded at apex, palpgenu more or less as wide as long; ventral opisthosomal setae distinctly, densely setulose *A. quisquiliaris*.
- 55(54). Anterior sensillary area of crista metopica wide, widely rounded, usually with 3-4 (Ad) and 1 (N) nonsensillary setae AL (= AM); rod of crista metopica long, thin, equal all along; posterior process always present, distinct, long and equal all along (Fig. 61); palptarsus conical, more slender, narrowly rounded at apex, palpgenu always 1/3 times longer than wide; ventral opisthosomal setae almost bare *A. miniatus*.
- 56(23). Dorsal side of idiosoma (behind eyes) with one pair of specific orbicular structures – urnulae (Figs. 6, 7); palptibial claw with denticle (Fig. 15) **Balaustiinae, Balaustum**.
- 57(58). Dorsal opisthosomal setae very short (up to 36) (Fig. 75); palpgenu (Fig. 79) lacking specific, pectinate setae – semipectinalae; ventral opisthosomal setae (excluding posterior opisthosomal setae) without ‘membrane’, needle-like, elongate, slender and almost bare (Fig. 76) **B. xerothermicum**.
- 58(57). Dorsal opisthosomal setae longer (up to 60) (Fig. 77); palpgenu with 5-7 (Ad) and 3-5 (N) specific pectinate setae – semipectinalae (Fig. 82); ventral opisthosomal setae (excluding posterior opisthosomal setae) with narrow ‘membrane’, similar to dorsal setae, but narrower, distinctly setulose (Fig. 78) 59.
- 59(60). Palps stout, palpgenu thick, as wide as long, ‘swollen’, twice wider than base of palptibia (Fig. 81) **B. murorum**.
- 60(59). Palps slender, palpgenu distinctly longer than wide, 1.3 times wider than base of palptibia (Fig. 80) **B. unidentatum**.

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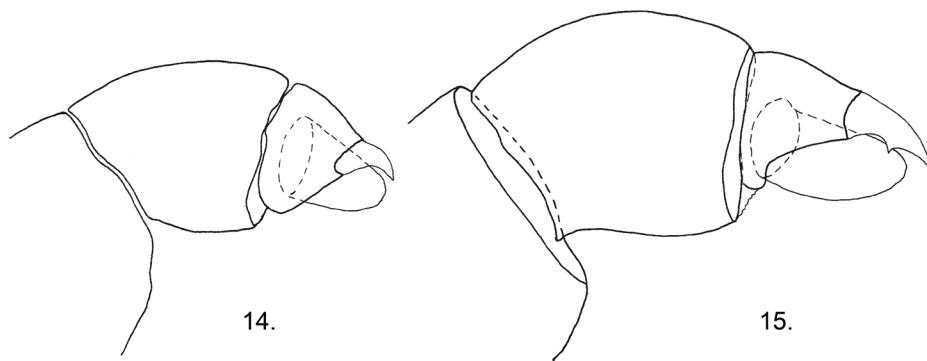
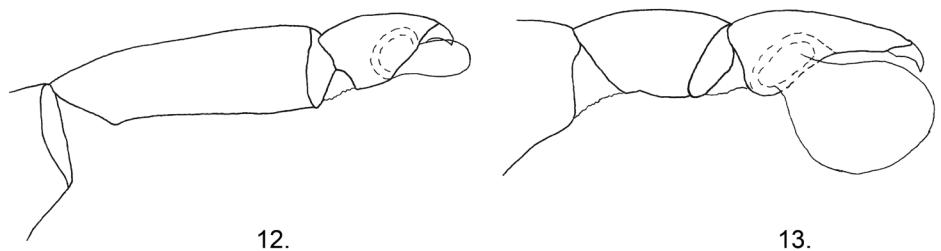
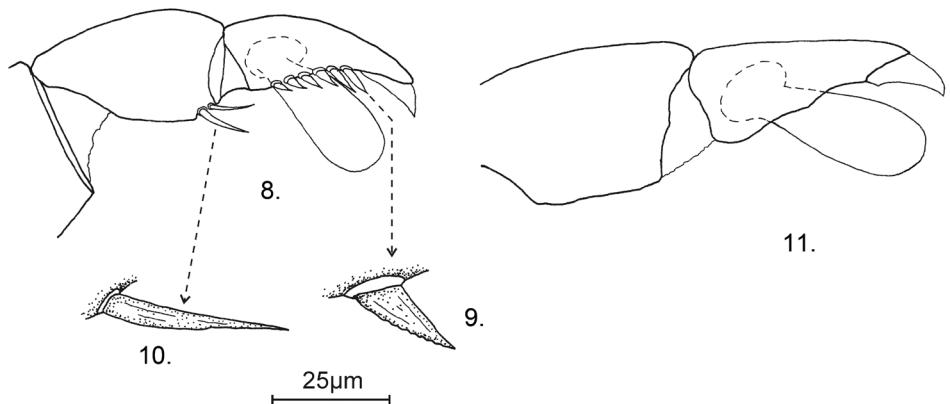
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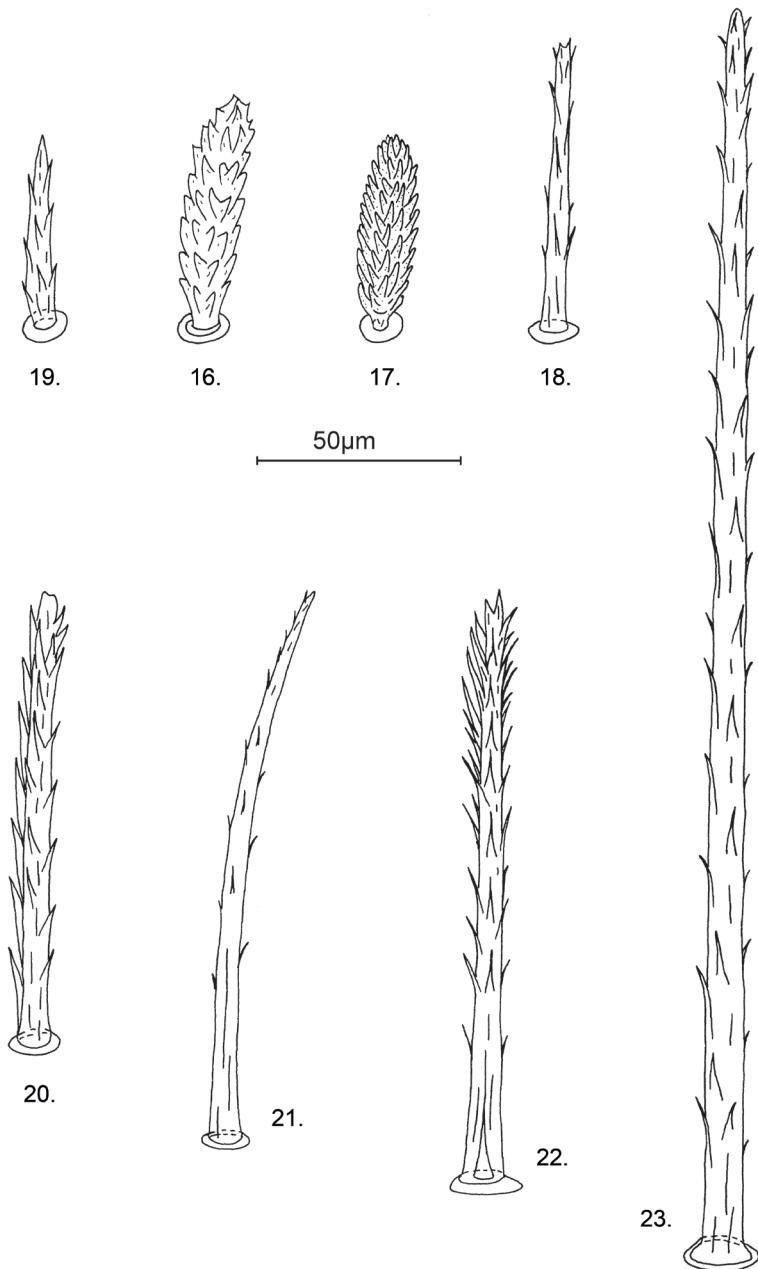
Figs 1–7. Crista metopica region (an outline, not in scale): 1. *Erythraeus*; 2. *Curteria/Kamertonia*; 3. *Leptus*; 4. *Charletonia*; 5. *Abrolophus*; 6. *Balaustium*; 7. *Urnula (Balaustium murorum)*.

Ryc. 1–7. Region crista metopica (schemat): 1. *Erythraeus*; 2. *Curteria/Kamertonia*; 3. *Leptus*; 4. *Charletonia*; 5. *Abrolophus*; 6. *Balaustium*; 7. *Urnula (Balaustium murorum)*.



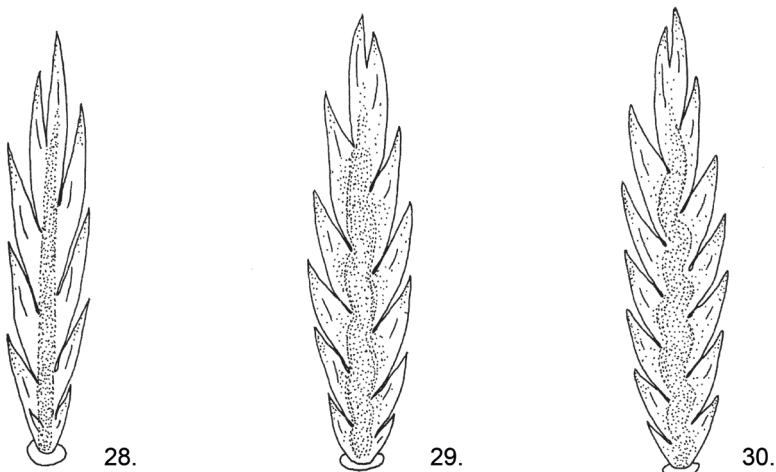
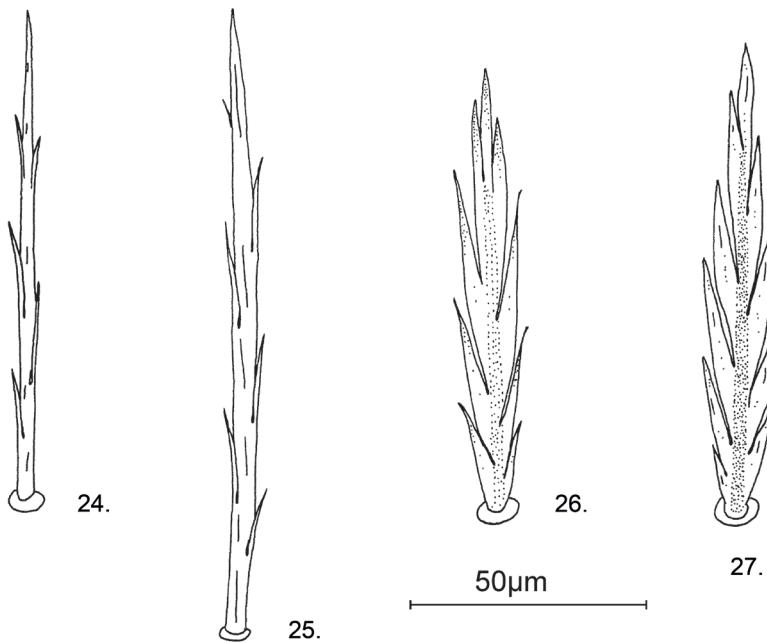
Figs 8–15. 8. *Erythraeus* – distal part of palp (an outline, not in scale); 9. Conala on palptibia (*Erythraeus*); 10. Semiconala on palpgenu (*Erythraeus*); 11.–15. Distal part of palp (an outline, not in scale): 11. *Curteria/Kamertonia*; 12. *Leptus*; 13. *Charletonia*; 14. *Abrolophus*; 15. *Balaustium*.

Ryc. 8–15. 8. *Erythraeus* – dystalna część pedipalpy (schemat); 9. Conala na goleni pedipalpy (*Erythraeus*); 10. Semiconala na kolanie pedipalpy (*Erythraeus*); 11.–15. Dystalna część pedipalpy (schemat): 11. *Curteria/Kamertonia*; 12. *Leptus*; 13. *Charletonia*; 14. *Abrolophus*; 15. *Balaustium*.



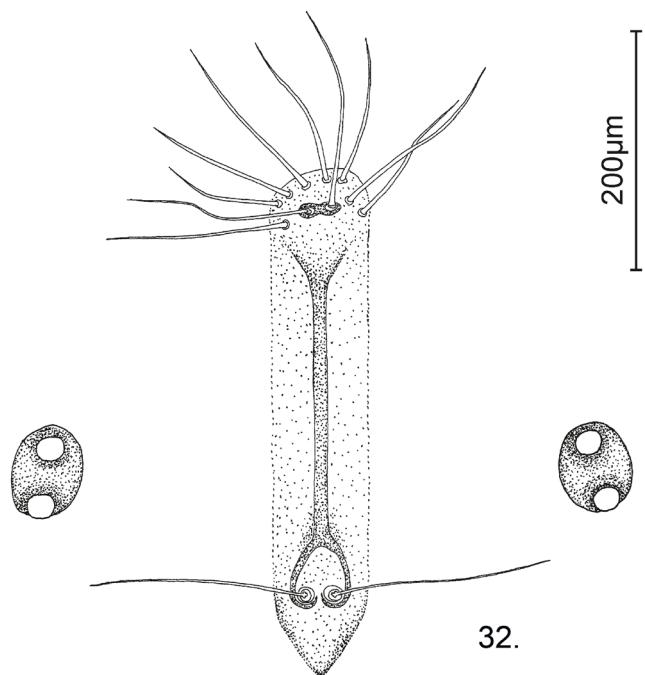
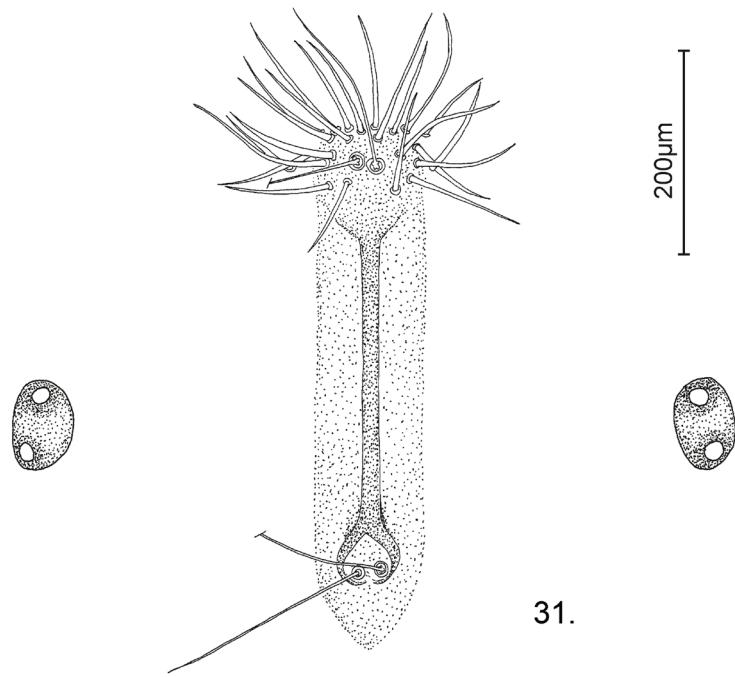
Figs 16–23. Dorsal opisthosomal seta: 16. *Erythraeus gorcensis*; 17. *Erythraeus phalangoides*; 18. *Erythraeus rupestris*; 19. *Erythraeus cinereus* (male); 20. *Erythraeus cinereus* (female); 21. *Erythraeus appendiculatus*; 22. *Erythraeus regalis*; 23. *Erythraeus opilionoides*.

Ryc. 16–23. Opistosomalna szczecina grzbietowa: 16. *Erythraeus gorcensis*; 17. *Erythraeus phalangoides*; 18. *Erythraeus rupestris*; 19. *Erythraeus cinereus* (samiec); 20. *Erythraeus cinereus* (samica); 21. *Erythraeus appendiculatus*; 22. *Erythraeus regalis*; 23. *Erythraeus opilionoides*.



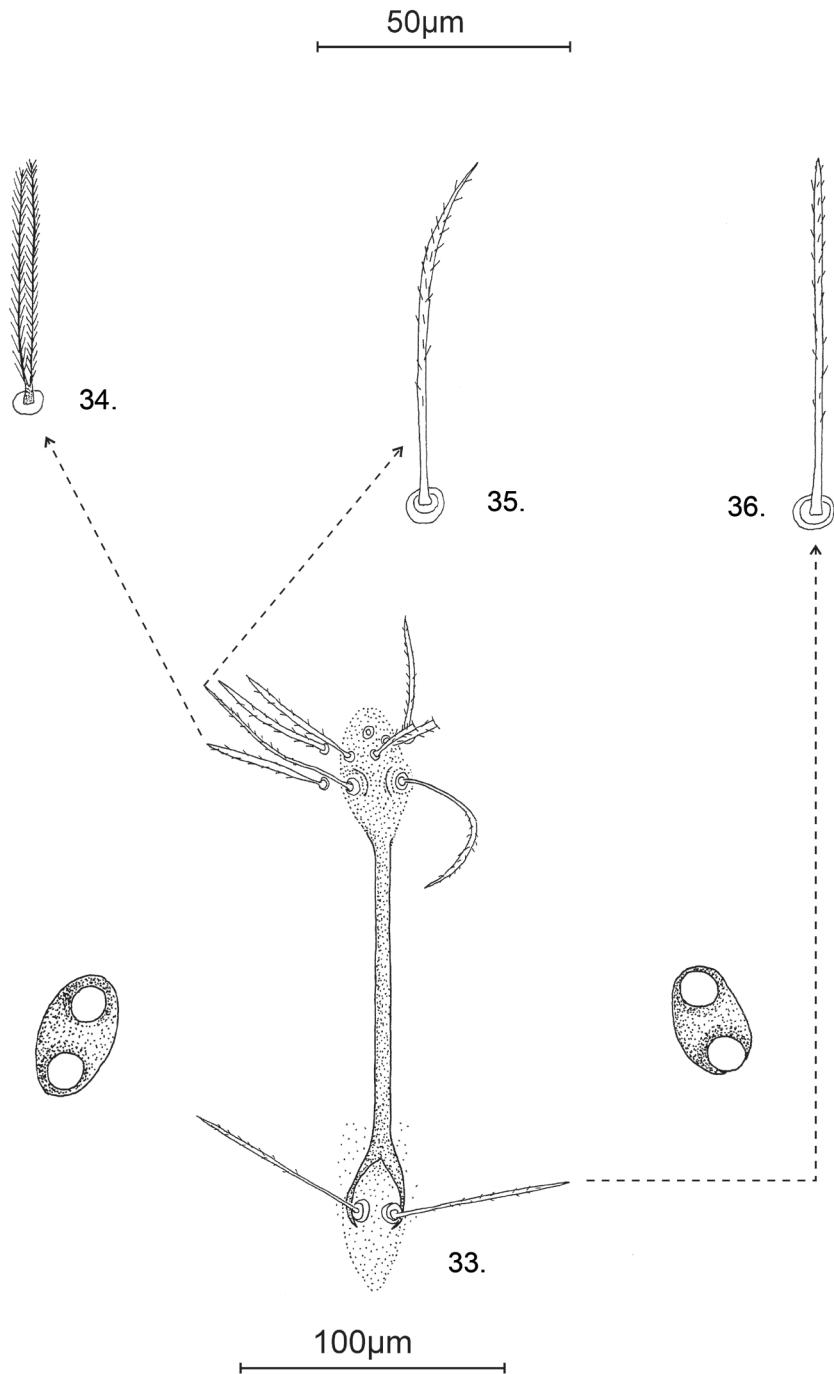
Figs 24–30. Serratala on genu IV: 24. *Erythraeus rupestris*; 25. *Erythraeus adpendiculatus*; 26. *Erythraeus phalangooides*; 27. *Erythraeus gorcensis*; 28. *Erythraeus regalis*; 29. *Erythraeus cinereus*; 30. *Erythraeus opilionoides*.

Ryc. 24–30. Serratala na kolanie IV nogi: 24. *Erythraeus rupestris*; 25. *Erythraeus adpendiculatus*; 26. *Erythraeus phalangooides*; 27. *Erythraeus gorcensis*; 28. *Erythraeus regalis*; 29. *Erythraeus cinereus*; 30. *Erythraeus opilionoides*.



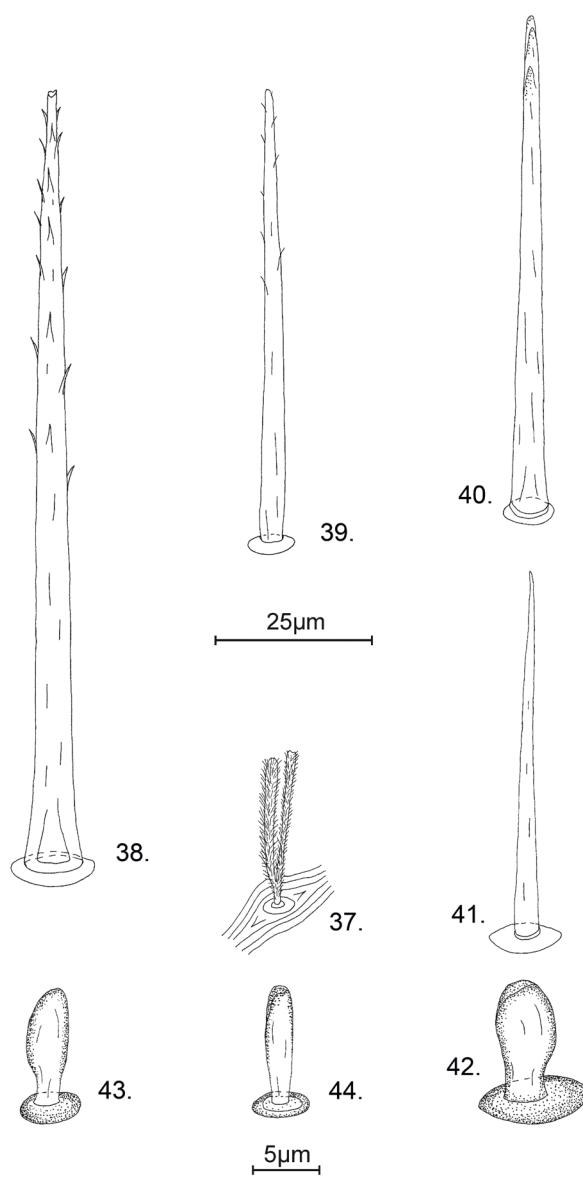
Figs 31–32. Crista metopica region: 31. *Curteria southcotti*; 32. *Curteria episcopalensis*.

Ryc. 31–32. Region crista metopica: 31. *Curteria southcotti*; 32. *Curteria episcopalensis*.



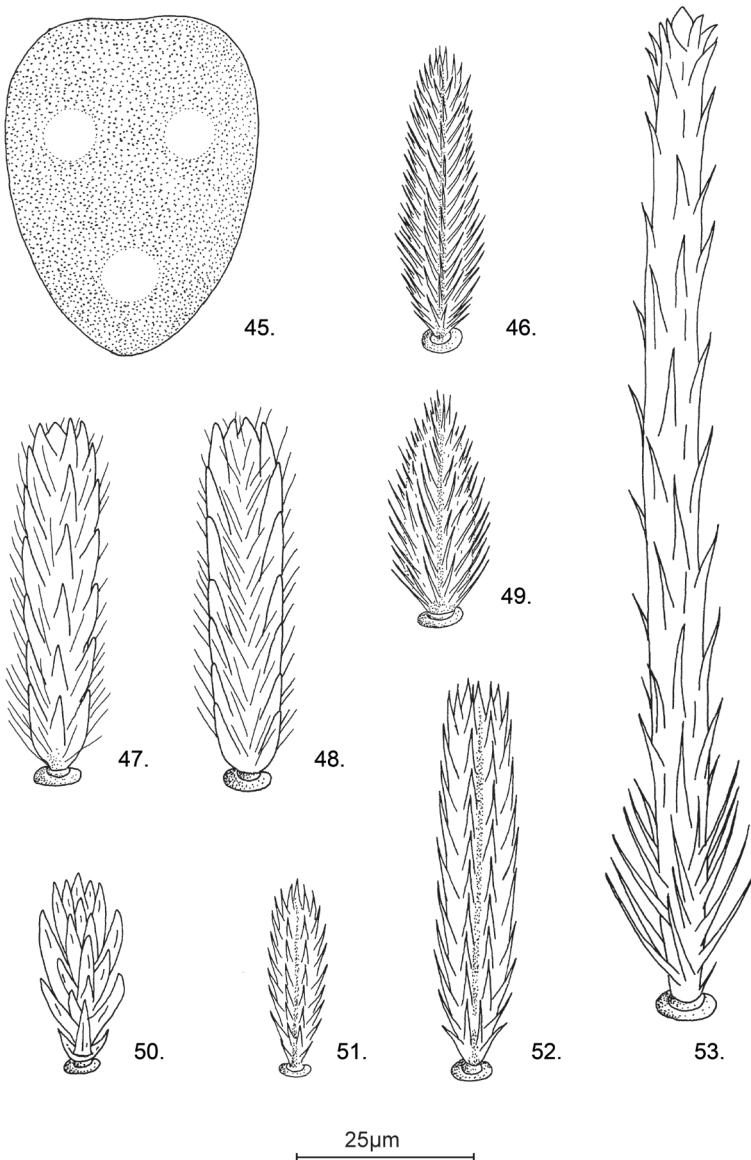
Figs 33–36. *Kamertonia polonica*: 33. crista metopica region; 34. nonsensillary seta AL (= AM); 35. anterior sensillary seta (ASens); 36. posterior sensillary seta (PSens).

Ryc. 33–36. *Kamertonia polonica*: 33. region crista metopica; 34. szczecina niesensoryczna AL (= AM); 35. przednia szczecina sensoryczna (ASens); 36. tylna szczecina sensoryczna (PSens).



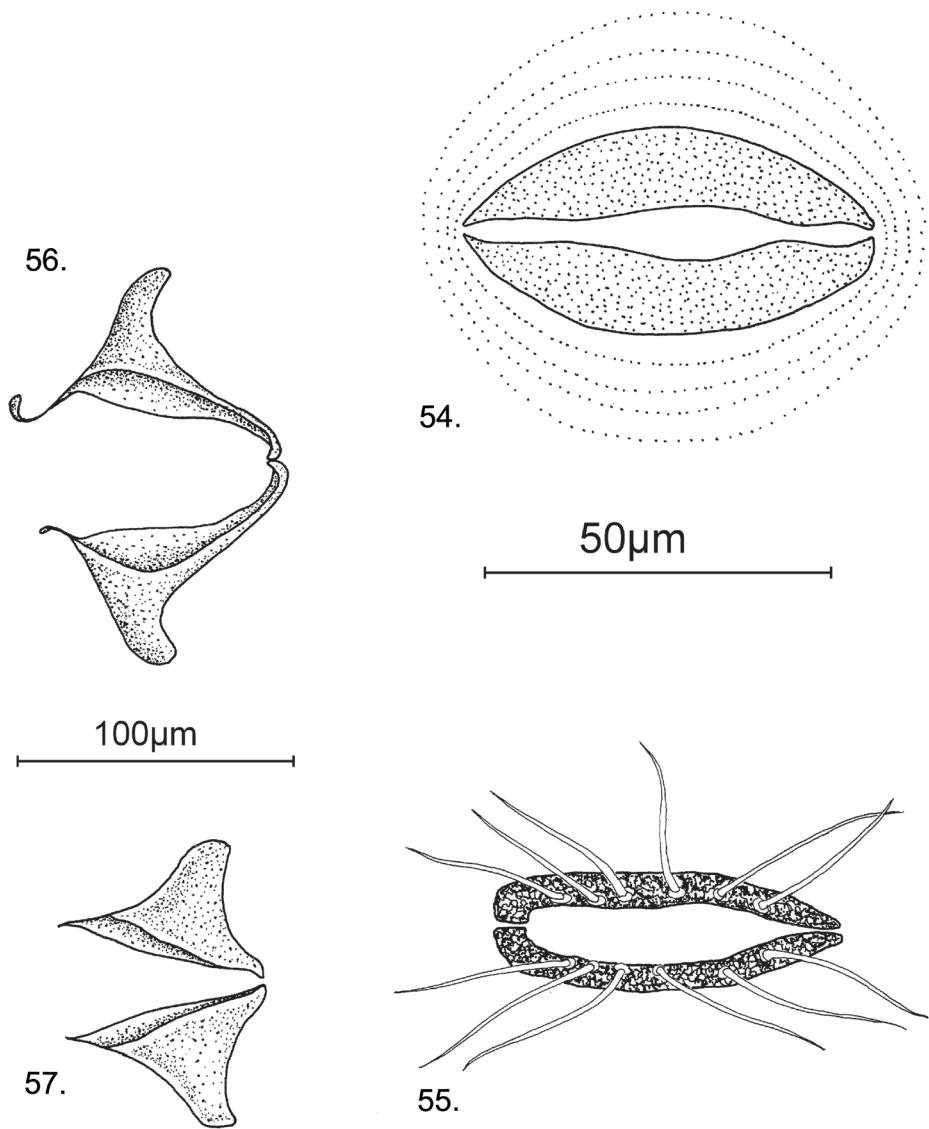
Figs 37–44. 37. *Kamertonia polonica* – dorsal opisthosomal seta; 38. *Curteria episcopalensis* – long dorsal opisthosomal seta; 39. *Curteria episcopalensis* – short dorsal opisthosomal seta; 40. *Curteria southcotti* – long dorsal opisthosomal seta; 41. *Curteria southcotti* – short dorsal opisthosomal seta; 42. *Curteria southcotti* – vestigiala on tibia I; 43. *Curteria episcopalensis* – vestigiala on tibia I; 44. *Kamertonia polonica* – vestigiala on tibia I.

Ryc. 37–44. 37. *Kamertonia polonica* – opistosomalna szczecina grzbietowa; 38. *Curteria episcopalensis* – dlonga opistosomalna szczecina grzbietowa; 39. *Curteria episcopalensis* – krótka opistosomalna szczecina grzbietowa; 40. *Curteria southcotti* – dlonga opistosomalna szczecina grzbietowa; 41. *Curteria southcotti* – krótka opistosomalna szczecina grzbietowa; 42. *Curteria southcotti* – vestigiala na goleni I nogi; 43. *Curteria episcopalensis* – vestigiala na goleni I nogi; 44. *Kamertonia polonica* – vestigiala na goleni I nogi.



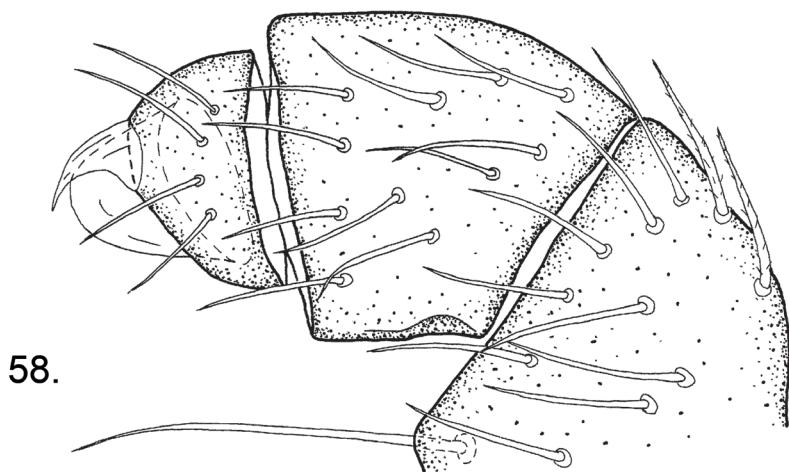
Figs 45–53. 53. *Leptus trimaculatus* – a pattern of light spots composed of pale setae, on dorsal side of idiosoma; 46–53. Dorsal opisthosomal seta: 46. *Leptus trimaculatus*; 47. *Leptus phalangii* (postdorsal seta, dorsal view); 48. *Leptus phalangii* (postdorsal seta, ventral view); 49. *Leptus phalangii* (middorsal seta); 50. *Leptus vertex*; 51. *Leptus molochinus*; 52. *Leptus rubricatus*; 53. *Leptus longipilis*.

Ryc. 45–53. 53. *Leptus trimaculatus* – układ jasnych plam utworzonych przez niewybarwione szczeciny na grzbietowej stronie idiosomy; 46–53. Opistosomalna szczecina grzbietowa: 46. *Leptus trimaculatus*; 47. *Leptus phalangii* (szczecina z tylnej części opistosomy, widok od strony grzbietowej); 48. *Leptus phalangii* (szczecina z tylnej części opistosomy, widok od strony brzusznej); 49. *Leptus phalangii* (szczecina ze środkowej części opistosomy); 50. *Leptus vertex*; 51. *Leptus molochinus*; 52. *Leptus rubricatus*; 53. *Leptus longipilis*.



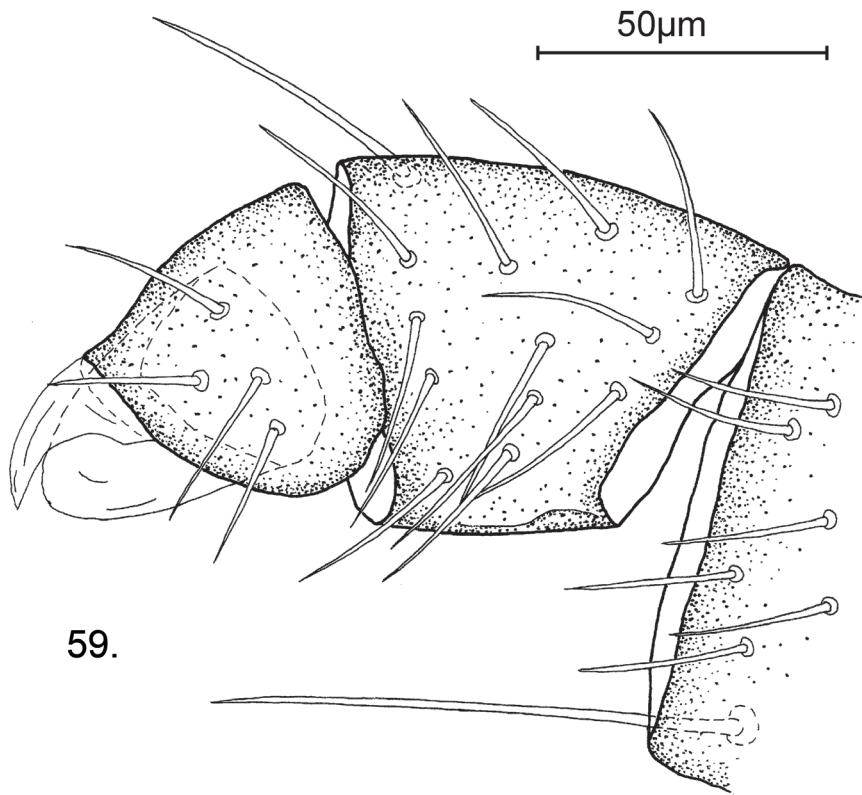
Figs 54–57. 54. *Abrolophus* – anus of the ‘*norvegicus-passerinii-strojnyi*’ group. 55. *Abrolophus* – anus of the ‘*quisquiliarus-miniatus-crassitarsus-rhopalicus-artemisiae*’ group; 56–57. Anterior part of male genital sclerite: 56. *Abrolophus rhopalicus*; 57. *Abrolophus artemisiae*.

Ryc. 54–57. 54. *Abrolophus* – anus (otwór odbytowy) charakterystyczny dla grupy gatunków ‘*norvegicus-passerinii-strojnyi*’; 55. *Abrolophus* – anus (otwór odbytowy) charakterystyczny dla grupy gatunków ‘*quisquiliarus-miniatus-crassitarsus-rhopalicus-artemisiae*’; 56–57. Przednia część męskiego sklerytu genitalnego (płciowego): 56. *Abrolophus rhopalicus*; 57. *Abrolophus artemisiae*.



58.

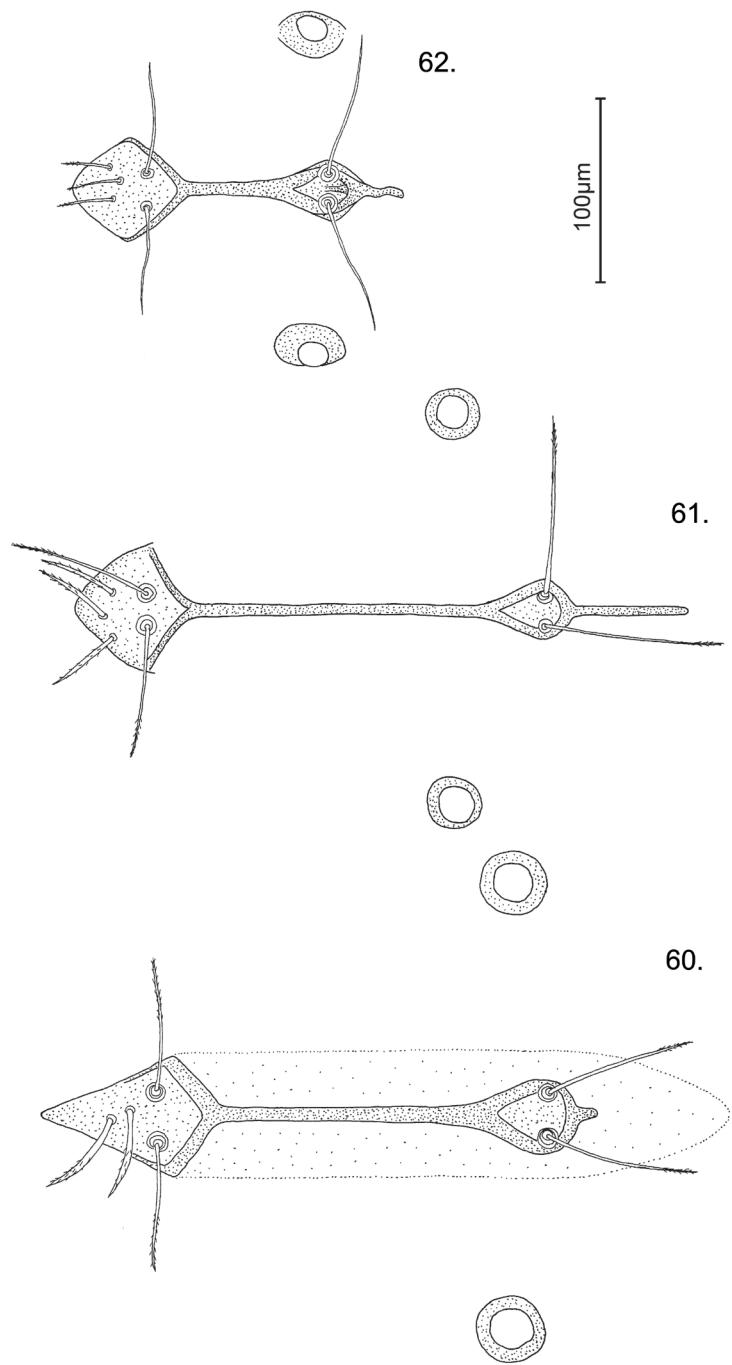
50µm



59.

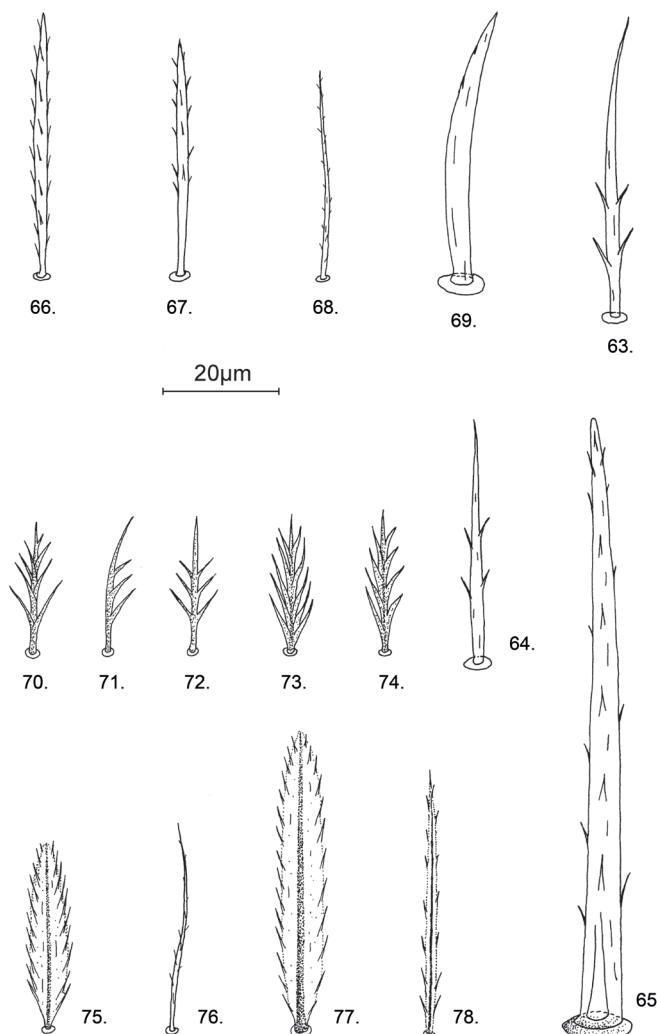
Figs 58–59. Medial side of right palp: 58. *Abrolophus strojnyi*; 59. *Abrolophus passerinii*.

Ryc. 58–59. Wewnętrzna część prawej pedipalpy: 58. *Abrolophus strojnyi*; 59. *Abrolophus passerinii*.



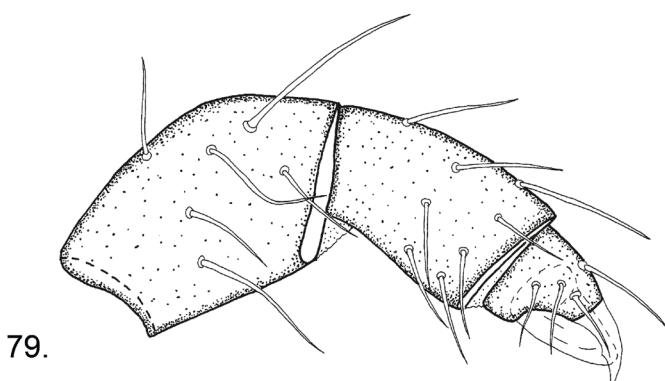
Figs 60–62. Crista metopica region: 60. *Abrolophus quisquiliarus*; 61. *Abrolophus miniatus*; 62. *Abrolophus crassitarsus*.

Ryc. 60–62. Region crista metopica: 60. *Abrolophus quisquiliarus*; 61. *Abrolophus miniatus*; 62. *Abrolophus crassitarsus*.

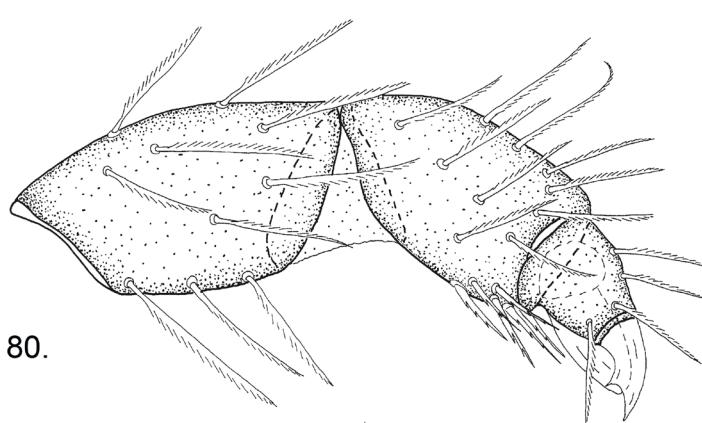


Figs 63–78. 63–74. Dorsal opisthosomal seta: 63. *Charletonia globigera*; 64. *Charletonia cardinalis* – (regular, basal seta); 65. *Charletonia cardinalis* – (spinelike seta); 66. *Abrolophus quisquiliarus*; 67. *Abrolophus miniatus*; 68. *Abrolophus crassitarsus*; 69. *Abrolophus norvegicus*; 70. *Abrolophus rhopalicus*; 71. *Abrolophus artemisiae* (lateral view); 72. *Abrolophus artemisiae* (dorsal view); 73. *Abrolophus passerinii*; 74. *Abrolophus strojnyi*; 75. *Balaustium xerothermicum* – dorsal opisthosomal seta; 76. *Balaustium xerothermicum* – ventral seta; 77. *Balaustium murorum* – dorsal opisthosomal seta; 78. *Balaustium murorum* – ventral seta.

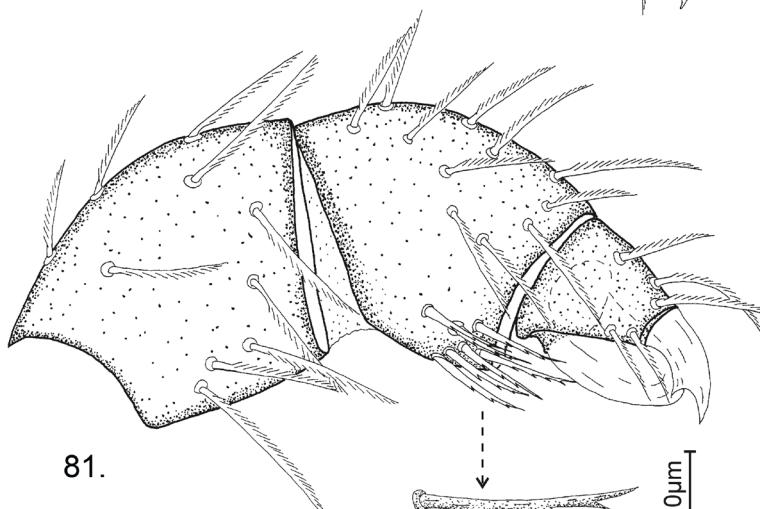
Ryc. 63–78. 63–74. Opistosomalna szczecina grzbietowa: 63. *Charletonia globigera*; 64. *Charletonia cardinalis* – (szczecina podstawowa); 65. *Charletonia cardinalis* – (szczecina kolcowata); 66. *Abrolophus quisquiliarus*; 67. *Abrolophus miniatus*; 68. *Abrolophus crassitarsus*; 69. *Abrolophus norvegicus*; 70. *Abrolophus rhopalicus*; 71. *Abrolophus artemisiae* (widok od strony grzbietowej); 72. *Abrolophus artemisiae* (widok od strony bocznej); 73. *Abrolophus passerinii*; 74. *Abrolophus strojnyi*; 75. *Balaustium xerothermicum* – opistosomalna szczecina grzbietowa; 76. *Balaustium xerothermicum* – szczecina brzuszna; 77. *Balaustium murorum* – opistosomalna szczecina grzbietowa; 78. *Balaustium murorum* – szczecina brzuszna.



79.



80.



81.



82.

Figs 79–82. 79–81. Medial side of left palp: 79. *Balaustium xerothermicum*; 80. *Balaustium unidentatum*; 81. *Balaustium murorum*; 82. *Semipectinala* (*Balaustium murorum*).

Ryc. 79–82. 79–81. Wewnętrzna część lewej pedipalpy: 79. *Balaustium xerothermicum*; 80. *Balaustium unidentatum*; 81. *Balaustium murorum*; 82. *Semipectinala* (*Balaustium murorum*).

STRESZCZENIE

Klucz do oznaczania postlarwalnych Erythraeidae (Acari, Actinotrichida) Polski

W niniejszej pracy zamieszczono po raz pierwszy pełny klucz, obejmujący wszystkie gatunki roztoczy z rodziny Erythraeidae, znane z aktywnych stadiów postlarwalnych z obszaru Polski. Dotychczas z Polski wykazano ponad 60 gatunków Erythraeidae, z czego 30 znanych jest z aktywnych form postlarwalnych (postaci dorosłych i/lub deutonimf). Pozostałe gatunki wykazane z Polski znane są wyłącznie ze stadiów larwalnych.

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