

Mealybugs of the genera *Peliococcus* and *Peliococcopsis* from Russia and neighbouring countries (Homoptera: Coccinea: Pseudococcidae)

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The taxonomy of the genera *Peliococcus* Borchs. and *Peliococcopsis* Borchs. is discussed. Keys to species and descriptions and illustrations of most species are given. Three species are described as new: *Peliococcus rosae* sp. n. (Crimea and Hungary), *P. loculatus* sp. n. (W Caucasus) and *P. latitubulatus* sp. n. (Armenia, Uzbekistan). Lectotypes are designated for 13 nominal species. The following new synonymies are established: *Peliococcus balteatus* (Green) = *venustus* (Green) = *saratogensis* (Rau); *P. kimmericus* (Kir.) = *mesasiaticus* Borchs. & Kozarz. = *pseudozillae* Borchs. = *bitubulatus* Borchs. = *xerophilus* Baz.; *P. tritubulatus* (Kir.) = *darvasicus* Nurm. & Baz.; *P. turanicus* (Kir.) = *perfidiosus* Borchs. = *terrestris* Borchs. = *unispinus* Borchs. & Ter-Gr.; *P. daganae* (Bod.) = *armeniacus* Borchs.; *Peliococcopsis priesneri* (Laing) = *caucasicus* (Borchs.); *Phenacoccus hordei* (Lindeman) = *Ph. slavonicus* Laing = *Peliococcus unitubulatus* Borchs. & Ter-Gr.

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Introduction

3 genera of the mealybugs recognized in the world catalogue (Ben-Dov, 1994), *Peliococcus* Borchs., *Peliococcopsis* Borchs. and *Spinococcus* Borchs. (part of species), are characterized by similar clusters of multilocular disc pores and tubular ducts. The synonymy of the genera *Spinococcus* and *Peliococcus* was established earlier (Danzig, 1980a). The genus *Peliococcopsis* (including 2 species only) is distinguished by the presence of 5-locular disc pores on the dorsum. The type specimens of the new species described in this paper are kept in the Zoological Institute, St.Petersburg. Lectotype designations are made to provide the objective standard of reference for the application of names.

Genus *Peliococcus* Borchsenius, 1948

Borchsenius, 1948: 954; 1949: 241; Ferris, 1950: 115; Bazarov, 1971: 91; Ter-Grigorian, 1973: 175; Tereznikova, 1975: 200; Danzig, 1980a: 118 (= *Spinococcus*); Kosztarab & Kozár, 1988: 117; Goux, 1990: 77; Tang, 1992: 512. – *Acanthococcus* Kiritshenko, 1936: 155 (junior homonym of *Acanthococcus* Signoret, 1875; type species *Acanthococcus marrubii* Kiritshenko,

1936, by monotypy). – *Spinococcus* [Kiritshenko, 1931: 314 (nom. nud.)] Borchsenius, 1948: 953 (as new replacement name for *Acanthococcus* Kiritshenko, 1936); 1949: 203; Tereznikova, 1975: 257; Kosztarab & Kozár, 1988: 153. – *Parapedronia* Balachowsky, 1953: 283 (type species *Pedronia spinigera* Goux, 1937, by original designation); Danzig, 1960: 178 (= *Spinococcus*).

Type species: *Phenacoccus chersonensis* Kiritshenko, 1936, by original designation.

Description. Female ovate, dusted with white powdery secretion, all margins or only posterior extremity with short waxy tassels. Antennae 9-segmented (8- or 9-segmented in *P. balteatus*, 7-9-segmented in *P. calluneti*). Circulus present (absent in *P. daganae* and *P. marrubii*). Claw with denticle (without denticle in *P. daganae*). On dorsum, multilocular disc pores and tubular ducts mainly form clusters arranged in transverse rows. In some cases, multilocular disc pores absent from dorsum and clusters consist of tubular ducts only; tubular ducts either arranged in transverse rows (the type species of *Spinococcus* and allied species) or entirely absent from dorsum (*P. spinigerus* (Goux)); exceptionally, pores and ducts form on dorsum compact transverse bands not di-

vided into definite clusters. Tubular ducts on dorsum mainly of two sizes, rarely of one size. On venter, clusters of pores and ducts concentrated in submarginal zone, occasionally occurring in median areas of thorax and abdomen; multilocular disc pores and tubular ducts not arranged in clusters form transverse rows and bands on abdomen; tubular ducts in addition scattered in median thorax. 5-locular disc pores mainly numerous in median areas of thorax and abdomen, rarely only a few near labium or entirely absent; such variation has intraspecific character. Trilocular pores scattered on dorsum, marginal venter and also on median areas of posterior abdominal sternites. Cerarii numbering till 18 pairs on margin and sometimes one or several in midline of the body.

Discussion. Most of the species have cerarii of usual type for the *Phenacoccus* group. We named them "peliococcus type". In other cases (some populations of the type species and species of the former genus *Spinococcus*), cerarii have 2 conical setae set close together, with trilocular pores immediately near their base, elevated from surrounding derm. We named them "spinococcus type". Dorsal setae in these species are similar to cerarian setae, arranged in transverse rows. Such dorsal setae have also some species with cerarii of "peliococcus type", but usually dorsal setae are small, without trilocular pores near the base.

The genus includes more than 40 species (Ben-Dov, 1994). It is probably of world distribution, although the bulk of the known species are from the Palaearctic Region, mainly from Mediterranean and Irano-Turanian subregions. *P. balteatus* has a Holarctic range. Several species are known also from the Ethiopian Region and one from Australia. 19 species are distributed in the former USSR, 3 of them are described as new. Species of this genus are generally steppe inhabitants living in lowland and mountains, on roots and aerial parts of steppe shrubs, herbs and grasses, rarely on trees and bushes.

Phenacoccus slavonicus Laing described from Ukraine was included by Borchsenius (1949) in the genus *Peliococcus*. But he did not examine the types of this species, and its original description did not give grounds to such an action. Examination of the type material of this species deposited in the Natural History Museum of London and of the type series of *Peliococcus unitubulatus* Borchs. & Ter-Gr. allows establishment of the following synonymy: *Phenacoccus hordei* (Lindeman, 1886) = *Phenacoccus slavonicus* Laing, 1929, **syn. n.** = *Peliococcus unitubulatus* Borchsenius & Ter-Grigorian, 1956, **syn. n.**

The key to species given below does not include *P. orientalis* Baz. and *P. montanus* Baz. & Babaeva from Tajikistan not examined by the author.

Key to the species of *Peliococcus*

- 1(18). Cerarii with 2 or more setae set apart, not elevated from surrounding derm and without trilocular pores immediately at the base. Dorsal setae of various sizes, commonly smaller than cerarian setae and not arranged in transverse rows.
- 2(17). Circulus present. Claw with a denticle.
- 3(6). Multilocular disc pores and tubular ducts forming compact and round pore clusters on whole dorsum. Clusters include 2-6, mainly 3-4 multilocular pores.
- 4(5). A single small tubular duct present in the centre of each pore cluster; large ducts absent 1. *P. balteatus* (Green)
- 5(4). Each pore cluster includes a single small tubular duct and 5-6 or more large ducts 2. *P. manifestus* Borchs.
- 6(3). Pore clusters on dorsum not round and not compact, include 1 or 2, rarely 3 multilocular pores, or multilocular disc pores entirely absent from dorsum.
- 7(12). On dorsum, tubular ducts of larger type more than twice as wide as those of smaller type.
- 8(11). Multilocular disc pores on dorsum present, sometimes few and present almost exceptionally on abdomen.
- 9(10). Multilocular disc pores on dorsum few and present almost exceptionally on abdomen 3. *P. kimmericus* (Kir.)
- 10(9). Multilocular disc pores abundant on whole dorsum 5. *P. salviae* (Hadz.)
- 11(8). Multilocular disc pores entirely absent from dorsum. Clusters of tubular ducts include a single small and 1-3, mainly 2 large ducts 6. *P. tritubulatus* (Kir.)
- 12(7). On dorsum, tubular ducts of larger type less than twice as wide as those of smaller type.
- 13(16). On dorsum, multilocular disc pores and tubular ducts arranged in definite clusters, or multilocular disc pores entirely absent from dorsum and clusters include tubular ducts only.
- 14(15). Clusters wide apart. They include, in addition to a single small tubular duct, 2-4 large ducts and sometimes 1-2 multilocular disc pores. Dorsal cerarii absent. Dorsal setae rarely have trilocular pores near the base 7. *P. glandulifer* Borchs.
- 15(14). Clusters close together, on abdomen coalesced in compact bands. They include, in addition to a single small tubular duct, 4-5 or 6-7 large ducts; multilocular disc pores entirely absent from dorsum. Dorsal cerarii present, 2-5 in number. Dorsal setae commonly have trilocular pores near the base 8. *P. multitubulatus* Danzig
- 16(13). On dorsum, at least on abdomen, multilocular disc pores and tubular ducts not arranged in clusters, but form compact bands, multilocular disc pores numerous 9. *P. turanicus* Borchs.
- 17(2). Circulus absent. Claw without a denticle 10. *P. daganai* (Bod.)
- 18(1). Cerarii with 2 setae set close together, these elevated from surrounding derm and with 1-10 trilocular

- lar pores immediately at the base. Dorsal setae similar to cerarian setae, arranged in transverse rows. Setae usually large; if small (some populations of *P. chersonensis*), each pore cluster includes only a single tubular duct of small or large type.
- 19(20). Dorsal tubular ducts of two sizes 12. *P. chersonensis* (Kir.)
- 20(19). Dorsal tubular ducts of one size only.
- 21(26). Dorsal pore clusters numerous.
- 22(25). Dorsal pore clusters numerous on thorax, arranged in transverse rows. On ventral surface of thorax, marginal tubular ducts as wide as dorsal ducts.
- 23(24). Antennae 7-9-segmented; if 9-segmented, without constriction between segments 8 and 9. On plants of the families Ericaceae, Empetraceae and Pyrolaceae. 13. *P. calluneti* (Lndgr.)
- 24(23). Antennae 9-segmented, always with distinct constriction between segments 8 and 9. On *Rosa* ... 14. *P. rosae* sp. n.
- 25(22). Dorsal pore clusters a few on thorax. On ventral surface of thorax, marginal tubular ducts mainly as small as in median areas 15. *P. morrisoni* (Kir.)
- 26(21). Dorsal pore clusters entirely absent, or only a few present.
- 27(28). A few pore clusters present on dorsal and ventral abdomen 16. *P. loculatus* sp. n.
- 28(27). Pore clusters entirely absent from dorsum and venter.
- 29(32). Dorsal tubular ducts equal to or slightly wider than ventral ducts.
- 30(31). Circulus present. C₁-C₁₇ with 2-3 trilocular pores 17. *P. multispinus* (Sir.)
- 31(30). Circulus absent. C₁-C₁₇ with 1 trilocular pore. 18. *P. marrubii* (Kir.)
- 32(29). Dorsal tubular ducts more than twice as wide as ventral ducts 19. *P. latitubulatus* sp. n.

1. *Peliococcus balteatus* (Green, 1928)

(Fig. 1)

Green, 1928: 20 (*Phenacoccus*; England); Kiritshenko, 1940: 188 (*Phenacoccus*); Borchsenius, 1949: 244; Zahradník, 1956: 51; Williams, 1962: 32; Tereznikova, 1975: 201; Danzig, 1980a: 122. — *venustus* Green, 1931: 265 (*Phenacoccus*, Iceland), *syn. n.*; Ossianilsson, 1955: 5; Kosztarab & Kozár, 1988: 119. — *saratogensis* Rau, 1937: 198 (*Phenacoccus*; USA, New York State), *syn. n.*; Ferris, 1950: 116; Kosztarab & Kozár, 1988: 148.

Material. Syntypes of *P. venustus* and more than 10 series from Kaliningrad and Leningrad provinces, Kamchatka, Kunashir and Sakhalin Islands, and Crimea.

Comments. The new synonymy has been established by comparison of syntypes of *P. venustus* and the drawing of *P. saratogensis* given by Ferris (1950) with the drawing of *P. balteatus* from England (Williams, 1962) and specimens of this species from different regions of Russia. The differences between these species, mentioned by Green (1931) and Williams (1962), in the number of antennal seg-

ments and multilocular disc pores in clusters are within the range of intraspecific variation. *P. saratogensis* was collected only once, therefore it is not clear whether this species is native or introduced from the Old World. *P. cycliger* (Leon.) and *P. deserticola* Ben-Dov & Gerson from the Mediterranean are very similar to *P. balteatus*. In these species as well as *P. manifestus* and some Ethiopian species, in contrast to most species of *Peliococcus*, multilocular disc pores in clusters differ in the size and structure from usual pores not collected in clusters. The tubular ducts in clusters in this group of species are very small, smaller than the ventral ones.

Distribution. Russia (Kaliningrad and Leningrad provinces, Kamchatka, Kunashir and Sakhalin Islands), Ukraine (Crimea), Iceland, England, Slovakia, Germany, Poland, USA (New York State).

Host plants. Oligophagous on grasses. Lives on leaves and leaf sheaths.

2. *Peliococcus manifestus* Borchsenius, 1949

(Fig. 2)

Borchsenius, 1949: 245 (Azerbaijan, Armenia; lectotype, designated here: ♀, "*Peliococcus manifestus* Borch., Geok-Tapa, Elisab[etpolskaya] guberniya [= Khanlar near Gyandzha, Azerbaijan], on *Chrysanthemum*, 21.VIII.1912, Shelkovnikov", slide No. 371-39; paralectotypes: 15 ♀ with labels as in lectotype, 1 ♀ from Armenia: Megri; Matesova, 1968: 111; Ter-Grigorian, 1973: 177; Marotta, 1992: 80.

Material. In addition to the types, 3 ♀ from Krasnodar Terr.

Description. Female. Pore clusters compact, round, consisting of 2-6, mainly 3-4 multilocular disc pores and 6-3 large tubular ducts; a single small tubular duct present in centre of each cluster. Large ducts more than twice as wide as small ducts. Multilocular pores and small tubular ducts in clusters similar to those in *P. balteatus*. On dorsum clusters form transverse rows, on venter, arranged around margin. 5-locular disc pores numerous. Cerarii of "pelio-coccus type", numbering 18 pairs on body margin and one or two in the midline. C₁₈ with 2-3 setae and 9-11 trilocular pores on sclerotized plate. Other cerarii with 2 setae and several pores. Dorsal setae of various sizes; larger setae with 1-3 trilocular pores near the base.

Distribution. Russia (Krasnodar Terr.: Verkhnebakanskiy), Armenia, Azerbaijan, Kazakhstan, Sweden, Italy.

Host plants. The species lives on the stems of *Chrysanthemum*, *Helichrysum*, *Ancanthia igniaria* and *Thymus*.

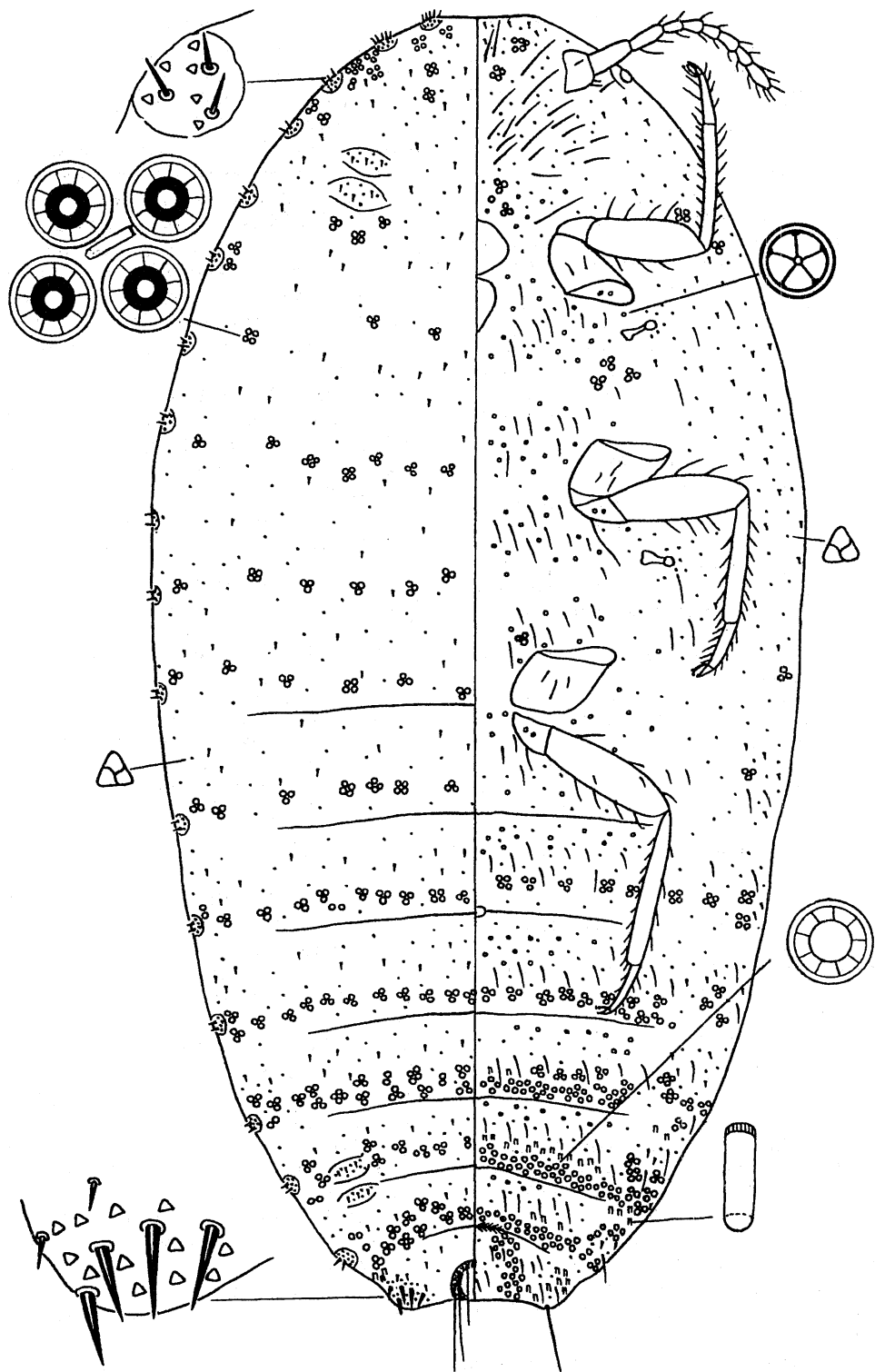


Fig. 1. *Peliococcus balteatus* (Green), female, after Danzig (1960), with corrections.

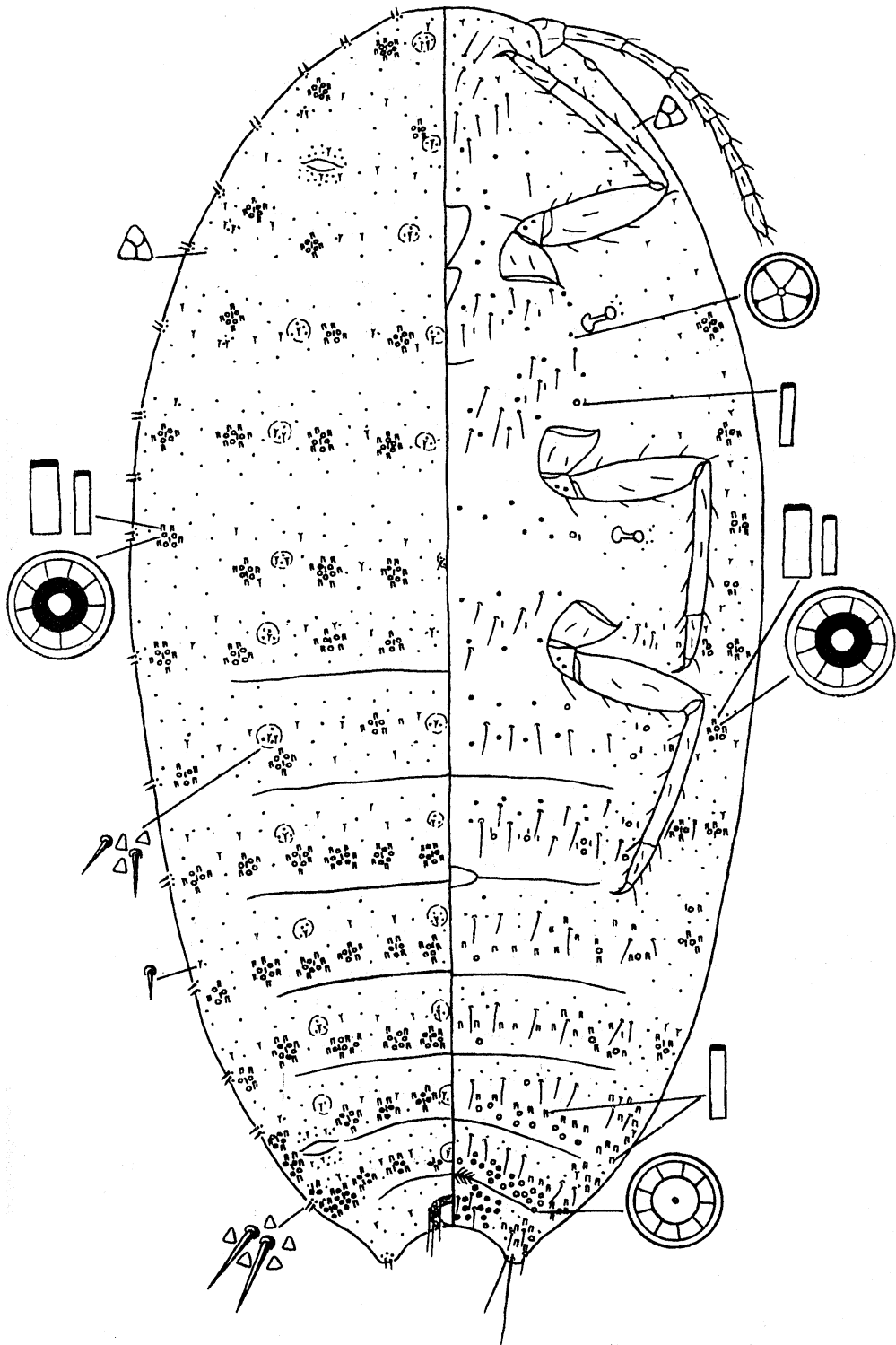


Fig. 2. *Peliococcus manifestus* Borchs., female, paralectotype, Azerbaijan.

3. *Peliococcus kimmericus* (Kiritshenko, 1940) (Fig. 3)

Kiritshenko, 1940: 189 [*Phenacoccus*; lectotype, designated here: ♀, "*Peliococcus kimmericus* (Kir.), Crimea, Yalta Distr., Ayu-Dag, on twigs of *Astragalus*, 7.VI.1938, A. Kiritshenko", slide No. 99, on the same slide is 1 ♀ of *Peliococcus tritubulatus*; paralectotypes: 6 ♀ from Yalta Distr., Crimea, collected by Kiritshenko, June 1938]; Borchsenius, 1949: 247; Tereznikova, 1975: 203. — *pseudozillae* Borchsenius, 1949: 248 (Kazakhstan: NW Tien Shan; Uzbekistan: near Samarkand; lectotype, designated here: ♀, "*Peliococcus pseudozillae* Borchs., Konstantinovka, 30 verst [N] of Tashkent, NW Tien Shan, 27.V.1913, Chernyavin, t. 48", slide No. 286-39), *syn. n.* — *bitubulatus* Borchsenius, 1949: 251 (Tajikistan: near Shaartuz; Armenia: Megri; lectotype, designated here: ♀, "*Peliococcus bitubulatus* Borchs., Armenia, Megri, on stone, 25.V.1947, N. Borchsenius", slide No. 29-48; paralectotypes: 2 ♀ on 2 slides from Megri, collected 24 and 26.V.1947, and 1 ♀ from Tajikistan, near Shaartuz), *syn. n.*; Ter-Grigorian, 1973: 182. — *mesasiaticus* Borchsenius & Kozarzhevskaya, 1966: 40 [= *zillae* (non Hall, 1926): Borchsenius, 1949; Turkmenistan: Chuli, Geok-Tepe Distr., Ashkhabad], *syn. n.* — *xerophilus* Bazarov, 1971: 92 (Turkmenistan: Kugitang), *syn. n.* — *zillae* (non Hall, 1926): Borchsenius, 1949: 246.

Material. Types of *P. kimmericus*, *P. pseudozillae*, *P. bitubulatus*, *P. mesasiaticus*, and more than 20 series from Central Asia, 1 series from Afghanistan.

Description. Female. Pore clusters not round, consisting of 0-3 multilocular disc pores (usually absent on thorax), a single small tubular duct and 1, rarely 2 large ducts. Large ducts more than twice as wide as small ducts. On dorsum clusters form transverse rows, on venter, arranged on margin. 5-locular disc pores numerous. Cerarii of "peliococcus type", usually numbering 18 pairs on body margin; sometimes thoracic pairs weakly developed or entirely absent. C₁₈ with 2-3, C₃ with 3, other cerarii with 2 setae; all cerarii with several trilocular pores. Sometimes there are 2 or 3 incomplete rows of dorsal cerarii with 1-2 small setae and 3-4 trilocular pores. Dorsal setae minute, some of them with 1-3 trilocular pores near the base.

Comments. The synonymy of *P. pseudozillae*, *P. bitubulatus* and *P. mesasiaticus* with *P. kimmericus* has been established by comparison of types. Differences mentioned by Borchsenius (1949) and Borchsenius and Kozarzhevskaya (1966) are within the range of intraspecific variation. The author did not examine the types of *P. xerophilus* deposited probably in the collection of Institute of Zoology and Parasitology of Tajikistan (Dushanbe).

The synonymy of *P. xerophilus* with *P. kimmericus* has been established by comparison of the types of *P. kimmericus* with the description and the drawing of Bazarov (1971). *P. talhouki* (Matile-Ferrero, 1984) described from Saudi Arabia is apparently identical with *P. kimmericus*. On the other hand, the species from Saudi Arabia described by Matile-Ferrero (1980) under the name *P. kimmericus* was certainly misidentified.

Distribution. Ukraine (Crimea), Armenia, mountains of Central Asia (Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan), Afghanistan (near Jalalabad), Saudi Arabia.

Host plants. The species lives on the leaves, stems, fruits, twigs and trunks of *Morus alba*, *M. nigra*, *Haplophyllum atriplicoides*, *Ampelopsis vitifolia*, *Berberis vulgare*, *Astragalus*, *Glycyrrhiza*, *Lycium ruthenicum*, *Phlomis*, *Centaurea*, *Artemisia* and some other herbs. Pest of *Morus*.

4. *Peliococcus montanus* Bazarov & Babaeva, 1981 (Fig. 4)

Bazarov & Babaeva, 1981: 323 (Tajikistan: southern slope of Hissar Range, Ziddy).

Material. Holotype only.

Comments. This species comes closest to *P. kimmericus*, but differs in the higher number of large tubular ducts: 2-3 in each pore cluster. *P. montanus* lives on roots, whereas *P. kimmericus* was found on aerial parts of plants. It is also close to *P. glandulifer*, but can be distinguished by the greater difference in the sizes of large and small dorsal ducts.

Distribution. Tajikistan: southern slope of Hissar Range (Ziddy), Kuraminsky Range (Asht Distr., Oshoba).

Host plants. The species has been collected from the roots of *Astragalus* at altitude of 1900-2100 m.

5. *Peliococcus salviae* Hadzibejli, 1963 (Fig. 5)

Hadzibejli, 1963: 425 (East Georgia: Vardziya).

Material. 1 ♀, paratype.

Description. Female. Pore clusters not round, consisting of 2-4, mainly 3-4 multilocular disc pores and a single small tubular duct; there are some large tubular ducts near each cluster. Large tubular ducts more than twice as wide as small ducts. Dorsal rows of clusters interrupted in median areas on anterior part of

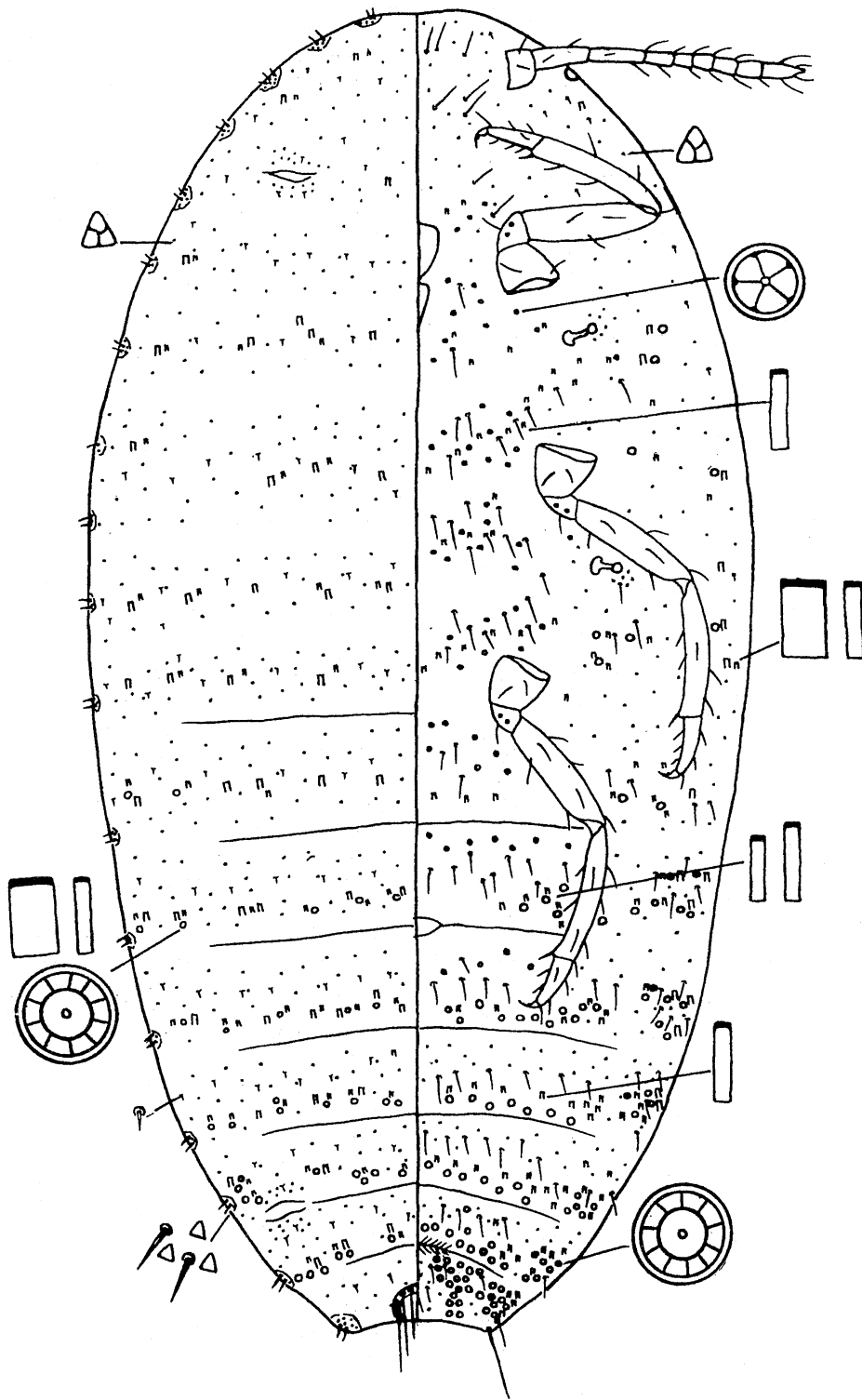


Fig. 3. *Peliococcus kimmericus* (Kir.), female, lectotype.

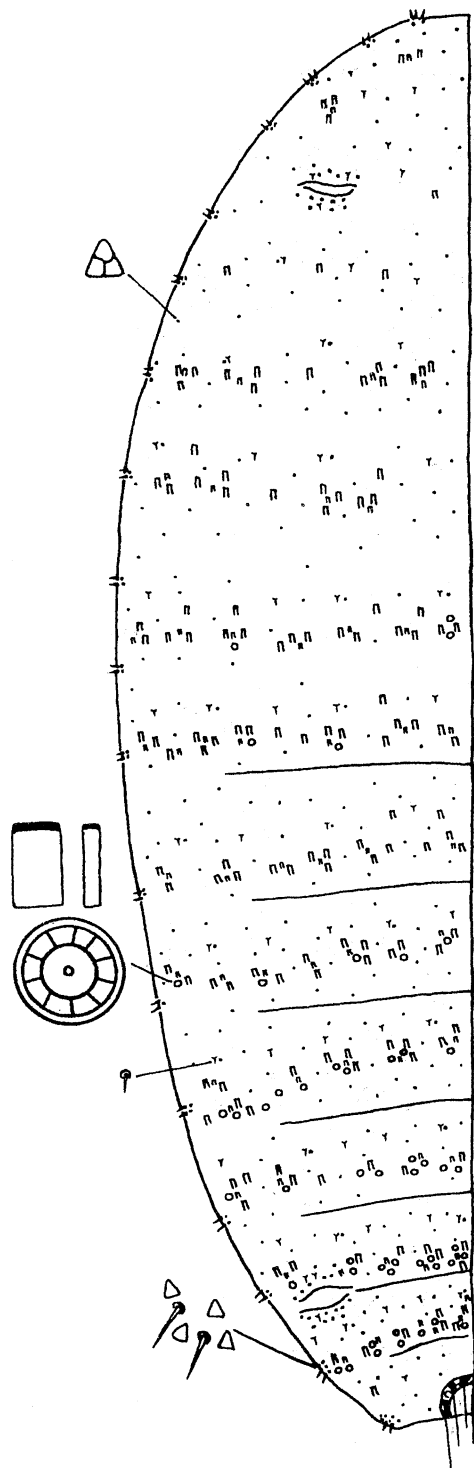


Fig. 4. *Peliococcus montanus* Bazarov & Babaeva, female, holotype, dorsal part.

body; on venter, pore clusters arranged in a wide band around body margin. 5-locular disc pores numerous. Cerarii of "peliococcus type", numbering 18 pairs on body margin and one in the middle of tergite VII. C_{18} with 3, other cerarii with 2 setae; all cerarii with several trilocular pores. C_{18} born on sclerotized plate. Dorsal setae minute, some of them with 1, rarely 2 trilocular pores near the base.

Distribution. Known from the type series only.

Host plant. Collected on roots of *Salvia verticillata*.

6. *Peliococcus tritubulatus* (Kiritshenko, 1940) (Fig. 6)

Kiritshenko, 1940: 190 (*Phenacoccus*; Ukraine, Crimea, Yalta Distr., Degermenkoy and Partenit, on roots of *Genista albida*); Borchsenius, 1949: 250; Tereznikova, 1975: 206. — *darvasicus* Nurmamatov & Bazarov, 1989: 606 (Tajikistan: Darvaz Range, near Tavil'dara), *syn. n.*

Material. 1 ♀ from Crimea (Yalta Distr., Ayu-Dag, on stem of *Astragalus*, 7.VI.1938, A. Kiritshenko); 1 ♀ paratype of *P. darvasicus*; 10 ♀ from Dagestan, Georgia and Azerbaijan.

Description. Female. Multilocular disc pores absent from dorsum. Clusters of tubular ducts consisting of a single small tubular duct and 1-3 large ducts: on thorax mainly 1-2, on abdomen 2-3. Large ducts more than twice as wide as small ducts. On dorsum clusters form transverse rows, on venter, arranged around margins. 5-locular disc pores present on thorax and anterior segments of abdomen, sometimes near labium only. Cerarii of "peliococcus type", till 18 pairs on body margin, sometimes not developed on thorax. C_{18} with 2 large conical setae and 10-12 trilocular pores. Other cerarii with 2 (C_3 with 3) very small setae and 2-4 trilocular pores. Sometimes 2 dorsal incomplete rows of cerarii present; dorsal cerarii with 1-2 small setae and 2-3 trilocular pores. Dorsal setae minute, without trilocular pores.

Comments. The species is very close to *P. kimmericus*, but differs in the total absence of multilocular pores on dorsum and ventral margin, more compact clusters of tubular ducts on abdomen, and also in the inhabited part of plants (on roots, not on aerial parts). In the collection of Kiritshenko, only one female remained which according to morphological characters belongs to *P. tritubulatus*. But this specimen is mounted on the same slide as the lectotype of *P. kimmericus* and has consequently the same label, with the locality and the host plants differing from those indicated

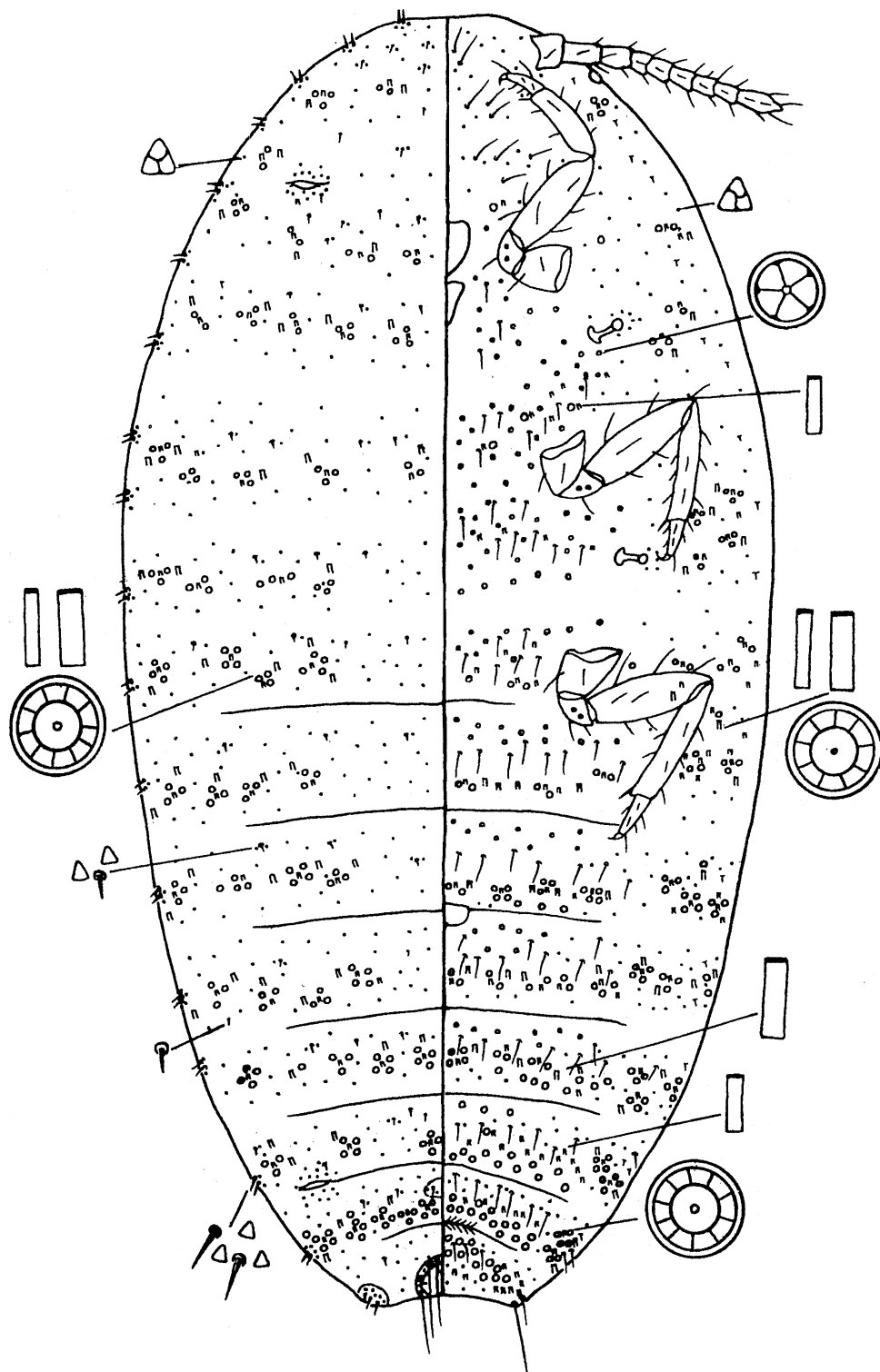


Fig. 5. *Peliococcus salviae* Hadz., female, paratype.

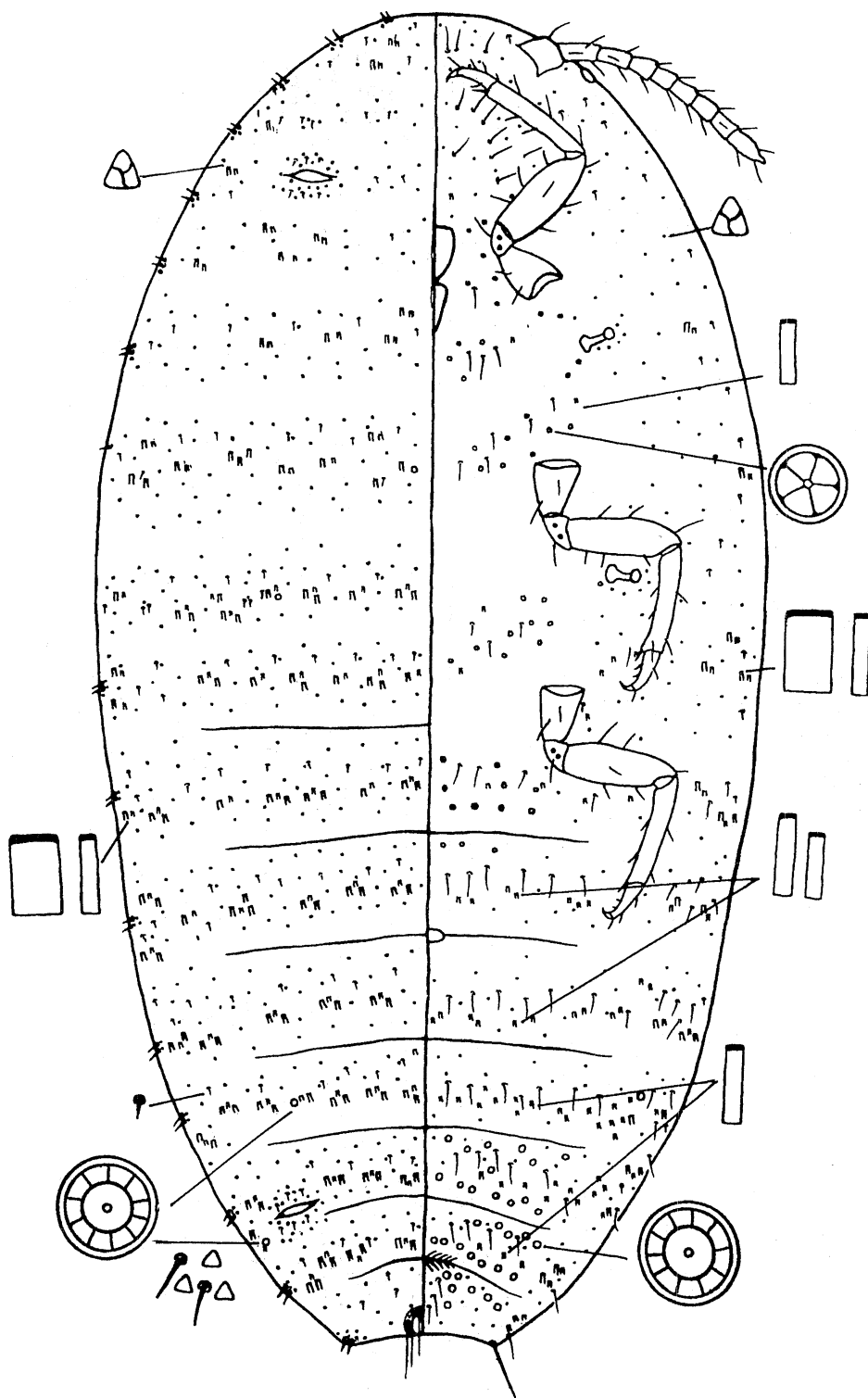


Fig. 6. *Peliococcus tritubulatus* (Kir.), female, Dagestan.

by Kiritshenko in the original description of *P. tributulatus*. It is possible that a mislabelling occurred. Borchsenius (1949) indicated (on the slide) this specimen as type and based on it the redescription of the species.

The synonymy of *P. darvasicus* and *P. tributulatus* has been established by comparison of the paratype of *P. darvasicus* with the material of Kiritshenko from Crimea. *P. darvasicus* differs in the more numerous large tubular ducts in clusters (on abdomen occur clusters with 3 ducts instead of 1-2) and by fewer 5-locular disc pores (near labium only). As both these characters are variable within other species of the genus, I synonymize the two names.

Distribution. Russia (Dagestan), Ukraine (S Crimea), Georgia, Azerbaijan, Tajikistan.

Host plants. The species lives on the roots of *Genista alba*, *Teucrium*, *Suaeda*, *Scorzonera criosperma* on dry slopes.

7. *Peliococcus glandulifer* Borchsenius, 1949 (Fig. 7)

Borchsenius, 1949: 259 (Azerbaijan, South Armenia; lectotype, designated here: ♀, "*Peliococcus glandulifer* Borchs., dry valley, 3 km from Ordubad, *Euphorbia*, roots, 15.VII.1939, Znoiko, t. 46", slide No. 217-39, specimen in black circle; paralectotypes: 4 ♀ on the same slide; a series from Armenia, "near Erevan, on lower part of stem on *Euphorbia*, 20.V.1947, N. Borchsenius, No. 378", slide No. 139-48); Ter-Grigorian, 1973: 193 (description, but not the figure). – *terrestris* (non Borchsenius, 1949): Ter-Grigorian, 1973: 187 (figure, but not the description).

Material. In addition to the types, 9 ♀ from Armenia.

Description. Female. Pore clusters consisting of 1-2 multilocular disc pores, a single small tubular duct and 1-4, mainly 2 large ones. Large ducts less than twice as wide as small ducts. On dorsum clusters form transverse rows, on venter, arranged around margins of thorax and anterior abdomen, scattered also on median areas of anterior segments of abdomen. The number of 5-locular disc pores as well as multilocular disc pores widely variable: they may be numerous on thorax and anterior abdomen (see Ter-Grigorian, 1973, fig. 108), a few near labium only or entirely absent (for example in the type series). Strong correlation between number of multilocular and 5-locular disc pores absent. Cerarii of "*Peliococcus* type", numbering 13-15 pairs on body margin. C₁₈ with 2-3 conical setae and 1-2 minute ones, other cerarii with 2 conical setae. C₁₈ with 10-12, other cerarii with 2-4 trilocular pores. Dorsal setae of various sizes, some of them as

large as cerarian setae, but only occasionally with trilocular pores near the base.

Third-instar larva was described by Ter-Grigorian (1973).

Distribution. Armenia, Azerbaijan (Nakhichevan).

Host plants. Lives on the roots of *Euphorbia*.

8. *Peliococcus multitubulatus* Danzig, 1980 (Fig. 8)

Danzig, 1980b: 33 (Mongolia: East Aimak, Matad).

Material. Known from the type series only.

Description. Female. Multilocular disc pores absent from dorsum. Clusters of tubular ducts consisting of a single small and 4-7, mainly 4-5 large ducts. Large tubular ducts less than twice as wide as small ducts. Dorsal rows of clusters coalesced in compact bands; on venter, clusters arranged along margin of thorax. 5-locular disc pores numerous. Cerarii of "*Peliococcus* type", marginal cerarii numbering 18 pairs, dorsal 2-5. C₁₈ and C₃ with 3, other cerarii with 2 setae. C₁₇ and C₁₈ with 7-10, other cerarii with 3-5 trilocular pores. All cerarii born on sclerotized basal projections. Dorsal setae of similar size as cerarian setae, with 2-3 trilocular pores near the base, on sclerotized basal projection, forming transverse rows.

Distribution. Only the type series is known.

Host plant. Unknown.

9. *Peliococcus turanicus* (Kiritshenko, 1932) (Fig. 9)

Kiritshenko, 1932: 137 [*Phenacoccus*; Uzbekistan: Samarkand; Armenia: Kalahjm; lectotype, designated here: ♀, "*Peliococcus turanicus* Kir., Uzbekistan: Samarkand, on roots of *Descurainia sophia*, 22.V.28, A. Arch[angelskaya], slide without No., specimen in black circle; paralectotypes: 4 ♀ on the same slide; 8 ♀ from Samarkand on *Sisymbrium*; 4 ♀ from "Turkistan", on *Stenophragma* (= *Descurainia*); 5 ♀ from Uzbekistan, on *Astragalus bactrianus*; 11 ♀ from Armenia, on roots of cotton]; Archangelskaya, 1937: 129 (*Phenacoccus*); Borchsenius, 1937: 53 (*Phenacoccus*); 1949: 256 (= *hilarius*); Matesova, 1968: 111; Ter-Grigorian, 1973: 191; Tereznikova, 1975: 208. – *hilarius* Kiritshenko, 1936: 136 (*Phenacoccus*; Crimea, Kekeneiz (now Sokolinoe); lectotype, designated here: ♀, "*Phenacoccus ilarius* [sic], Krim, Kekeneiz, *Seseli dichotomum*, A. Kiritshenko", slide without No., specimen in black circle; paralectotypes: 3 ♀ on the same slide]. – *perfidiosus* Borchsenius, 1949: 257 (= *latipes* sensu Kiritshenko; Ukraine, including Crimea, North Caucasus; lectotype, designated here: ♀, "*Peliococcus perfidiosus* Borchs., North Caucasus Terr., Alexandr. Distr., on potatoes, 1.IX.1935, Umrikhin, t. 47", slide No. 57-36, specimen in black circle; paralectotypes: 2

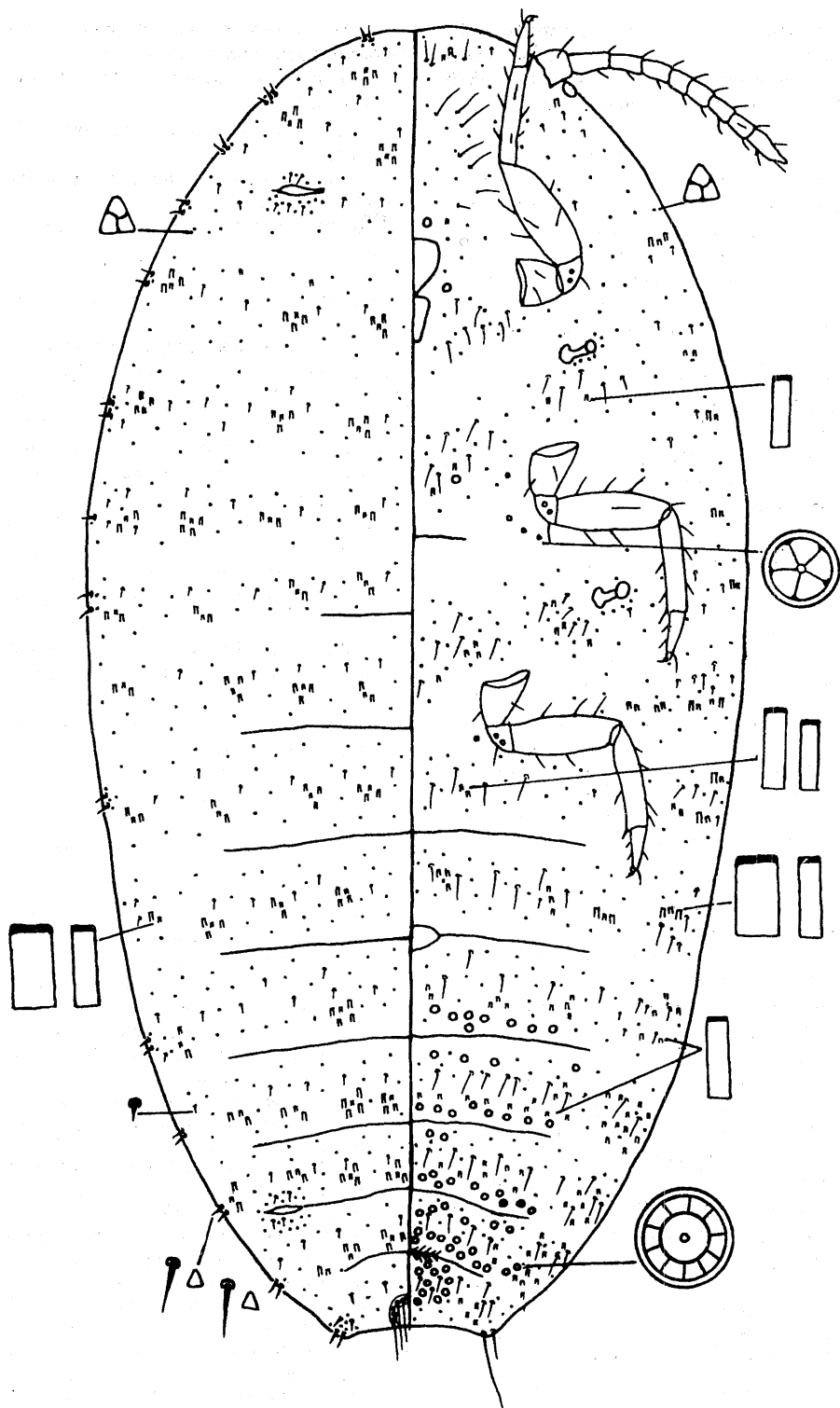


Fig. 7. *Peliococcus glandulifer* Borchs., female, lectotype.

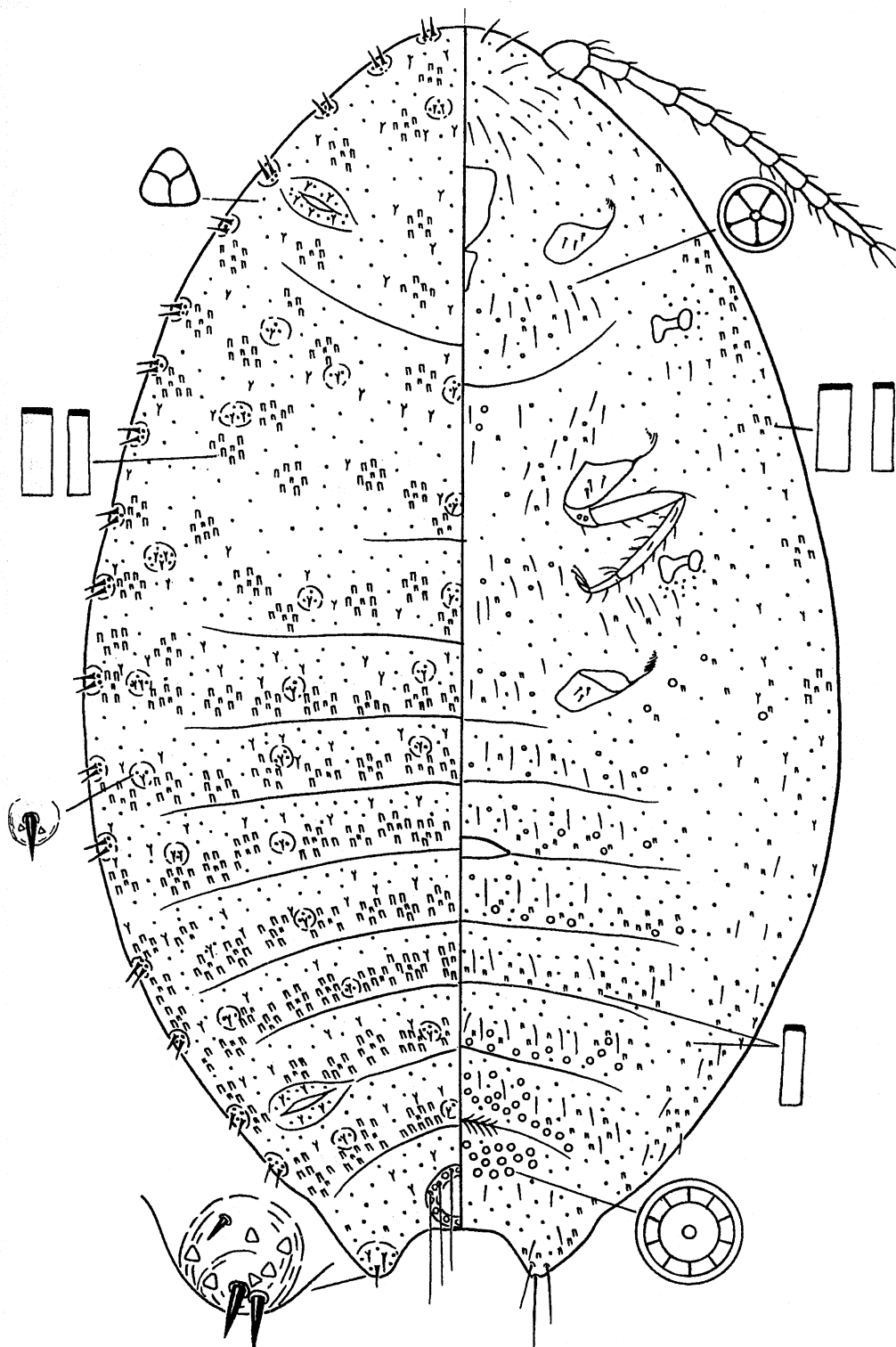


Fig. 8. *Peliococcus multitubulatus* Danzig, female, after Danzig (1960), with corrections.

♀ on the same slide; 4 ♀ with the label "Kerch, garden, *Nasturtium*, 28.VII.1930, N. Borchsenius"; 4 ♀ on the slide with the label "*Peliococcus perfidiosus* Borchs., type" without any other data, probably the drawing accompanying the description of this species was made from one of these specimens), **syn. n.**; Tereznikova, 1975: 209. – *terrestris* Borchsenius, 1949: 254 [Georgia: Tbilisi; lectotype, designated here: ♀, "*Peliococcus* (*Phenacoccus*) *terrestris* Borchs., Georgia, Tiflis (now Tbilisi), road to Kodzhory, on *Euphorbia*, 16.VII.1934, No. 22, t. 44", slide without No., specimen in black circle; paralectotypes: 2 ♀ on the same slide and 1 ♀ on other slide with identical label], **syn. n.** – *unispinus* Borchsenius & Ter-Grigorian, 1956: 23 (Armenia: Agin Distr., lectotype, designated here: ♀, "*Peliococcus unispinus* Borchs. et Tg., ArmSSR, Landzhik, roots of wild grasses, 21.VI.1951, M. Ter-Grigorian; paralectotypes: 2 ♀ from Landzhik and Karaberd), **syn. n.**; Ter-Grigorian, 1973: 188. – *latipes* (non Green, 1923): Kiritshenko, 1931: 313 (*Phenacoccus*); Borchsenius, 1937: 53 (*Phenacoccus*); Kiritshenko, 1940: 120 (*Phenacoccus*). – *glandulifer* (non Borchsenius, 1949): Ter-Grigorian, 1973: 193 (figure, but not description).

Material. The types of *P. turanicus*, *P. hilarius*, *P. perfidiosus*, *P. terrestris*, *P. unispinus* and more than 20 series from Russia and republics of the former USSR, 1 ♀ from Hungary.

Description. Female. Multilocular disc pores and tubular ducts on dorsum arranged in transverse rows or bands, in anterior part of body is often possible to recognize separate clusters. On venter, pores and ducts form large groups on margin. Dorsal ducts of two sizes, but predominate small type, difference in size of large and small ducts minor. 5-locular disc pores mainly entirely absent, or a few are near labium, but sometimes are numerous on thorax and abdomen. Cerarii of "peliococcus type", numbering 12-18 pairs on body margin. C₁₈ with 2 conical setae, 1-2 minute setae and 6-8 trilocular pores. Other cerarii with 2 conical setae and 1-3 pores. Dorsal setae of various sizes, some of them as large as cerarian setae and usually with one trilocular pore near the base.

Second- and third-instar larvae were described by Ter-Grigorian (1973).

Comments. The new synonymy has been established by examination of types. Presence or absence of 5-locular disc pores and trilocular pores near the base of some dorsal setae are within the range of intraspecific variation.

Distribution. Russia (Rostov city, Krasnodar and Stavropol territories), Ukraine (including Crimea), Moldova, Georgia, Armenia, Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan, Greece, Italy, Bulgaria, Hungary.

Host plants. The species lives on the roots of different perennial herbs and bushes (*Achillea*, *Artemisia*, *Centaurea*, *Tragopogon*, *Euphorbia*,

Lamium, *Astragalus*, *Atraphaxis*, *Physalis*), recorded also from *Nicotiana*, cotton, tubers of potatoes and roots of wheat and wild grasses.

10. *Peliococcus daganae* (Bodenheimer, 1926) (Fig. 10)

Bodenheimer, 1926: 191 (*Pseudococcus*; Israel: Deganya); Ben-Dov, 1991: 11 (design. lectotype). – *armeniacus* Borchsenius, 1949: 253 (Armenia; lectotype, designated here: ♀, "*Peliococcus armeniacus* Borchs., Armenia, southern environs of Erevan, on the base of the leaf of *Cynodon dactylon*, 1.IX.1948, N. Borchsenius, No. 651", slide No. 283-48; paralectotypes: 2 ♀ on 2 slides with identical labels), **syn. n.**; Ter-Grigorian, 1973: 184.

Material. In addition to the types of *P. daganae* and *P. armeniacus*, 9 ♀ from Armenia, Tajikistan (Dushanbe) and Hungary.

Description. Female. As opposed to other species, circulus absent and claw without a denticle. Multilocular disc pores arranged in transverse rows on dorsum, part of them groups by 2-3 together in median areas and by 4-6 on margin. On venter, pores concentrated around margin, a few present in median areas on head and thorax, on abdomen they form transverse rows and bands. Tubular ducts situated among multilocular disc pores on dorsum, distributed everywhere but not forming clusters on venter. Difference in size between larger and smaller ducts inconspicuous. 5-locular disc pores numerous on the whole venter, except segment VIII. Cerarii of "peliococcus type", numbering 18 pairs on body margin. C₃ with 3 setae, other cerarii with 2. Setae of C₆-C₁₁ wide apart. C₁₈ with 3-4, other cerarii with 2, rarely with 1 or 3 trilocular pores. Dorsal setae minute, without trilocular pores near the base.

Comments. The new synonymy has been established by examination of types. This species is not typical of *Peliococcus*. It can be distinguished by the inconspicuous difference in size of dorsal tubular ducts, absence of a denticle on claw and absence of circulus. There are no definite clusters of pores and ducts. It is left in this genus for the time being pending further research.

Distribution. Armenia, Tajikistan, Italy, Israel.

Host plants. The species lives on the leaf sheaths of *Cynodon dactylon*.

11. *Peliococcus orientalis* Bazarov, 1971

Bazarov, 1971: 93 (Tajikistan: Gorno-Badakhshan Distr., Vanch Range).

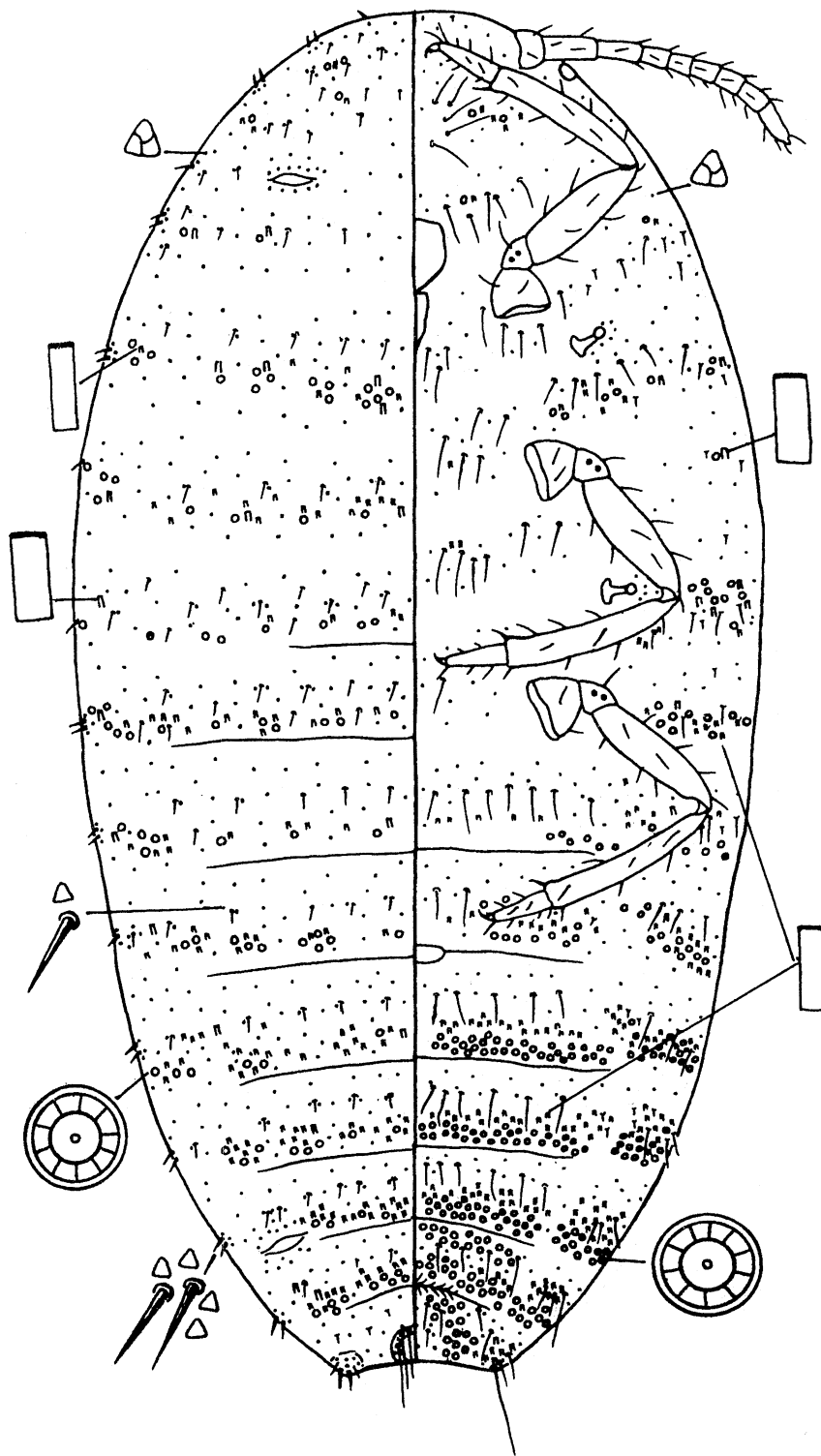


Fig. 9. *Peliococcus turanicus* (Kir.), female, Kazakhstan.

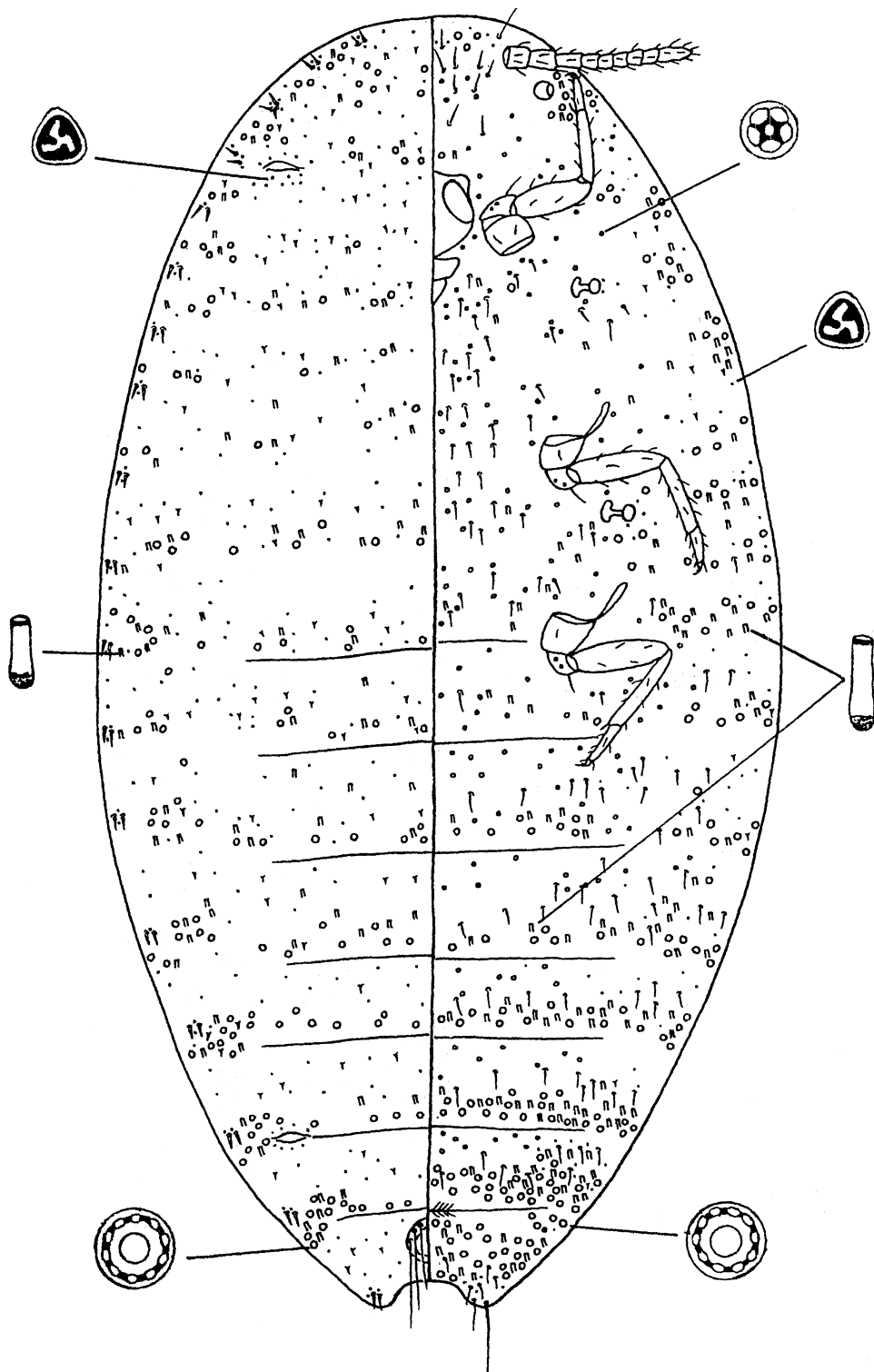


Fig. 10. *Peliococcus daganae* (Bod.), female, after Ter-Grigorian (1973, as *armeniacus*).

Description. Female. Multilocular disc pores absent from dorsum. Clusters of tubular ducts on dorsum consisting of two small and a single large duct. Large ducts less than twice as wide as small ducts. 5-locular disc pores numerous. Cerarii of "peliococcus type", numbering 18 pairs on body margin and one on segment VII. C₁-C₃ with 2-4 setae; other cerarii with 2 setae. C₁₈ with 10-11, other cerarii with 3-6 trilobular pores. Some dorsal setae of the same size as cerarian setae, with single trilobular pore near the base, form longitudinal rows.

Comments. The author did not examine this species. The types are probably deposited in the collection of Institute of Zoology and Parasitology of Tajikistan (Dushanbe). It differs from all known species of the genus *Peliococcus* in having two small tubular ducts in clusters.

Distribution. Known from the type series only.

Host plants. Collected from *Cousinia* at altitude of 1800 m.

12. *Peliococcus chersonensis* (Kiritshenko, 1936) (Fig. 11)

Kiritshenko, 1931: 314 (*Phenacoccus*, nom. nud.); 1936: 138 (*Phenacoccus*; Ukraine: env. of Odessa and the Crimea); Borchsenius, 1949: 249; Ter-Grigorian, 1973: 181; Tereznikova, 1975: 203 (= *artemisiae*); Danzig, 1980a: 120; Tang, 1988: 61; 1992: 51. — *artemisiae* Tereznikova, 1968: 281 (*Spinococcus*; Ukraine: Kher-son).

Material. In addition to the types of *P. chersonensis* and *P. artemisiae*, several series from Ukraine (env. of Odessa, Crimea), Kazakhstan (West, Central, East), Turkmenistan, Mongolia, Primorsk Terr. and North Korea.

Description. Female. Pore clusters not round, consisting of 1-2, rarely 3 multilocular disc pores and a single small or large tubular duct. Large ducts more than twice as wide as small ducts. Dorsal rows of clusters sometimes coalesced in compact bands; on venter, clusters arranged around body margin and also occur on median areas of thorax and anterior segments of abdomen. 5-locular disc pores numerous. Cerarii numbering 18 pairs on body margin and till 10 on midline of dorsum. All cerarii with 2 setae set close together; C₁₈ with 2-3 trilobular pores near the base; other cerarii with 1 pore. Dorsal setae of different sizes, larger ones similar to cerarian setae, with trilobular pore near the base, forming transverse rows.

Variation. The sizes of cerarian and dorsal setae and cuticular projections at the base of

them as well as the number of dorsal cerarii increase in some populations, especially in those from the Far East.

Distribution. Russia (Dagestan, Orenburg Prov., southern Primorsk Terr.), Ukraine (including Crimea), Armenia, Turkmenistan, Kazakhstan, Turkey, Mongolia, North Korea, China (Inner Mongolia).

Host plants. The species occurs most often on *Artemisia* (*A. austriaca*, *A. gmelinii*, *A. frigida*, *A. salicis*, etc.); it is recorded also from *Tanacetum achilleifolium*, *Hippolytia*, etc. Usually lives on roots; in Primorsk Territory, once collected from leaves.

13. *Peliococcus calluneti* (Lindinger, 1912), comb. n. (Fig. 12)

Lindinger, 1912: 90 (*Pseudococcus*; Germany); Schmutterer, 1952: 390 (*Spinococcus*); Danzig, 1960: 176 (*Spinococcus*); Williams, 1962: 56 (*Spinococcus*); Tereznikova, 1975: 259 (*Spinococcus*); Kosztarab & Kozár, 1988: 154 (*Spinococcus*).

Material. More than 20 series from Russia, single series from Latvia, Ukraine and Germany.

Description. Female. Antennae 7- or 8-segmented. Sometimes a second circulus present. Pore clusters consist of 1-4, mainly 2-3 multilocular disc pores and a single tubular duct. Clusters in dorsal rows sometimes coalesced in bands. On venter, clusters form marginal band, situated near each coxa, and arranged in transverse rows on abdominal segments II-IV. Dorsal tubular ducts of one size; dorsal and marginal ventral ducts twice as wide as median venter ducts. 5-locular disc pores numerous. Cerarii of "spinococcus type", numbering 18 pairs on margin and forming a row on midline of the body. C₁₈ with 10 trilobular pores and 1 or 2 minute auxiliary setae, on a large sclerotized plate. Other cerarii with 2-3 pores. Dorsal setae of various sizes, some of them similar to cerarian setae, each with 1 trilobular pore near the base, forming transverse rows.

Distribution. Russia (N Caucasus, Leningrad, Kaliningrad and Irkutsk provinces), Latvia, Ukraine, England, Denmark, Netherlands, Poland, Germany, Czech Republic, Sweden.

Host plants. Oligophagous on plants of the families Ericaceae, Empetraceae and Pyrolaceae (*Vaccinium*, *Erica*, *Calluna*, *Oxycoccus*, *Empetrum*, *Orthilia*). Lives mainly on roots.

14. *Peliococcus rosae* sp. n. (Fig. 13)

- *morrisoni*: Kiritshenko, 1936: 141 (part.); Tereznikova, 1975: 261.

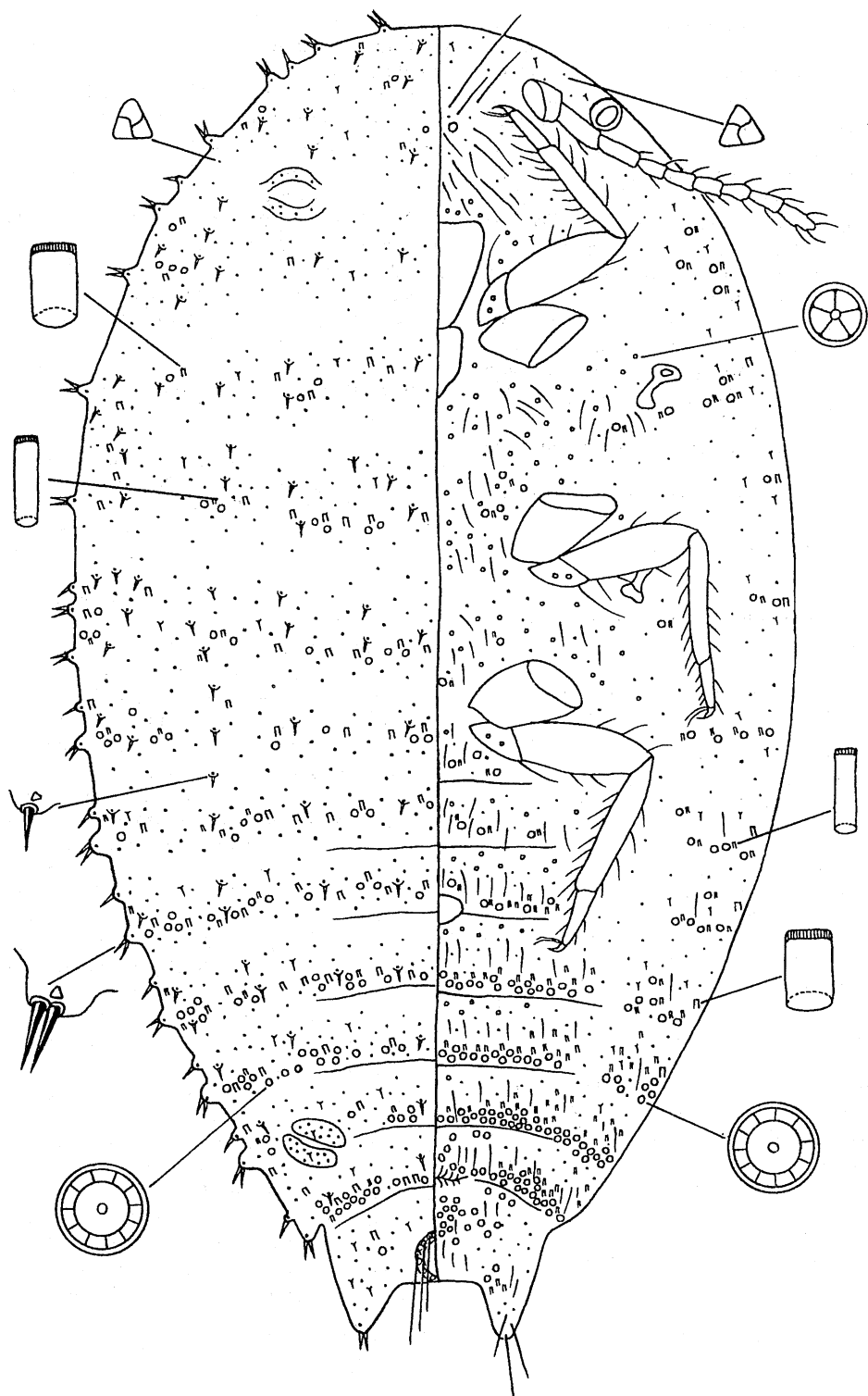


Fig. 11. *Peliococcus chersonensis* (Kir.), female, after Danzig (1980a), with corrections.

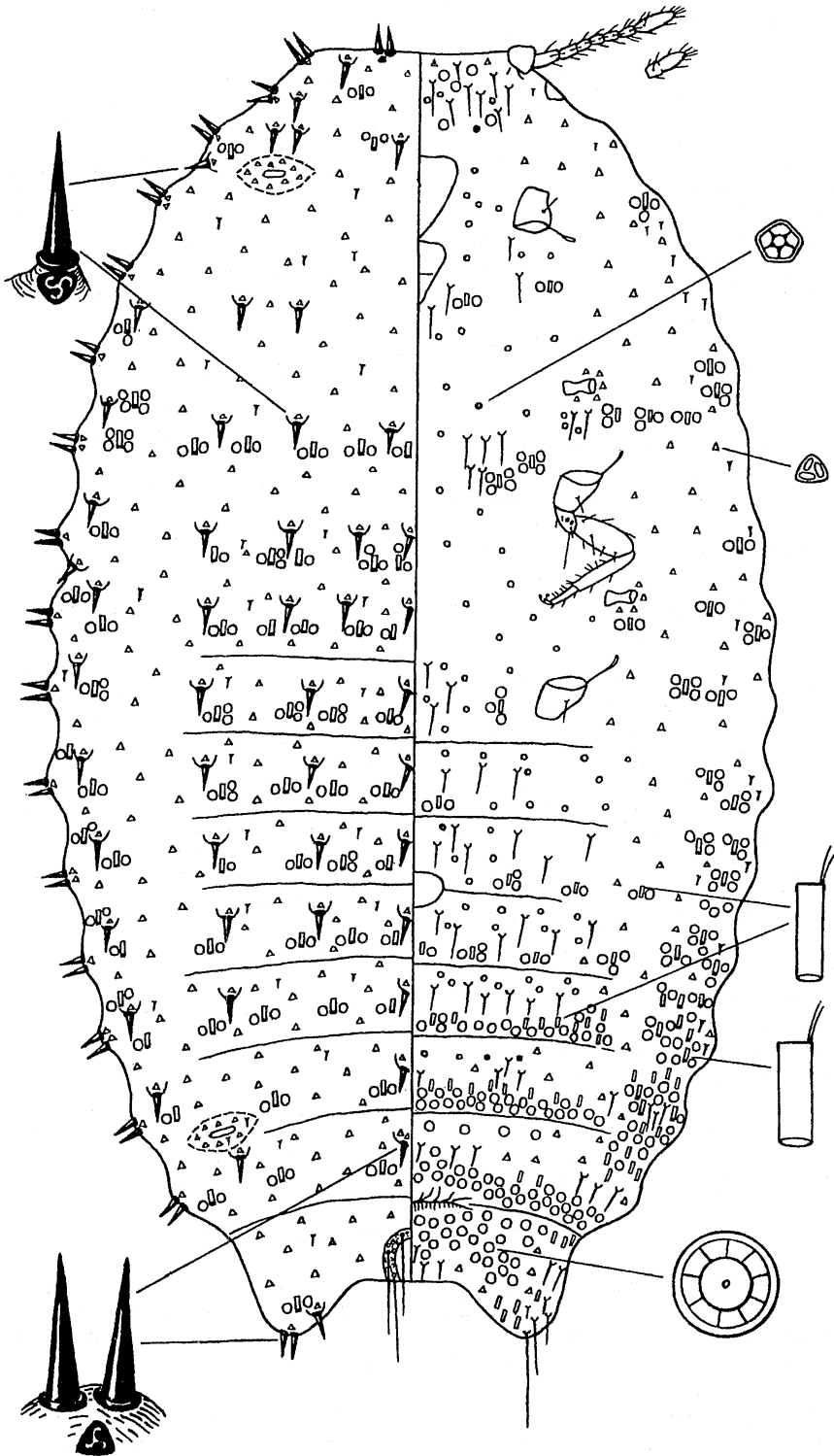


Fig. 12. *Peliococcus calluneti* (Lndgr.), female, after Danzig (1960), with corrections.

Holotype: ♀, "*Phenacoccus morrisoni* mihi, on *Rosa*, Crimea, southern coast, Yalta, 16.X.1932, Skorkin", slide without No., specimen in black circle.

Paratypes: 2 ♀ on the same slide as holotype; 2 ♀, "*Phenacoccus morrisoni* mihi, southern coast [of Crimea], road from Yalta to Nikitskiy Sad, 26.VIII.1932, Skorkin"; 2 ♀, "*Phenacoccus morrisoni* mihi, on base of stem of *Rosa*, Crimea, Degermenkoy, Yalta District, 27.VIII.1938, Alexis Kiritshenko det. No. 527", 2 ♀, same data, but 19.IX.1939, No. 72.

Description. Female. Pore clusters consisting of 2-6, mainly 3-5 multilocular disc pores with a single tubular duct, arranged in transverse rows on dorsal thorax and 3 anterior abdominal segments; on posterior segments (except VIII), clusters coalesced in compact bands. On venter, similar clusters form marginal band (on abdomen, clusters coalesced), a few scattered on head, near each coxa, and also on abdominal segments II and III. Dorsal tubular ducts of one size. Ventral tubular ducts on thorax margin of one size, as wide as dorsal ducts and nearly twice as wide as other ventral ducts. 5-locular disc pores numerous. Cerarii and dorsal setae as in *P. calluneti*. Marginal cerarii with 2-3, dorsal ones with 1-2 trilocular pores.

Comments. Kiritshenko described *P. morrisoni* based on specimens from bark of *Carpinus* from Batumi (Georgia) and from stem of *Rosa canina* from the Crimea. By examination of this material deposited in the collection of Zoological Institute, St.Petersburg, we found that it contains 2 very similar, but different species. The specimens from *Carpinus* correspond to the description of Kiritshenko and prevailing subsequent interpretation of this species (Borchsenius, 1949; Ter-Grigorian, 1973). This species is certainly oligophagous on *Carpinus* and widespread in the Palaearctic. The specimens from *Rosa* from the Crimea represent a new species differing from *P. morrisoni* in having far more clusters forming dorsal rows not only on abdomen but also on thorax; marginal tubular ducts on ventral thorax are of one size, similar to dorsal ducts (of two sizes and mainly similar to medial ventral ones in *P. morrisoni*).

There is an ecological difference between the 2 species: *P. morrisoni* is mesophilous, living in forests, whereas *P. rosae* is xerophilous, inhabiting open places.

The description and drawing given by Tereznikova (1975) under the name *Spinococcus morrisoni* belong to *P. rosae* sp. n.

Distribution. Ukraine (Crimea), Hungary (F. Kozár, personal communication).

Host plants. Described from *Rosa* in the Crimea; in Hungary, recorded on *Rosa* and *Berberis* (F. Kozár, personal communication), xerophilous.

15. *Peliococcus morrisoni* (Kiritshenko, 1936) (Fig. 14)

Kiritshenko, 1936: 141 (part.; *Phenacoccus*; Georgia: Adzharia; lectotype, designated here: ♀, "*Phenacoccus morrisoni* mihi, Batum, 1 rab., Borchsenius, 4", slide without No., specimen in black circle; paralectotype: 1 ♀ on the same slide); Borchsenius, 1949: 206 (*Spinococcus*); Ter-Grigorian, 1973: 130 (*Spinococcus*).

Material. In addition to the types, more than 20 series from Georgia, Armenia and Azerbaijan.

Description. Female. Pore clusters consisting of 1-6 multilocular disc pores (1-3 on thorax and 4-6 on abdomen) and a single tubular duct. Dorsal clusters a few, scattered on thorax and two anterior segments of abdomen, but arranged in transverse rows on segments III-VII; the number of pores in clusters increases posteriorly. On venter, a few clusters are on median thorax, on margin they form large elongate groups. Dorsal tubular ducts of one size, only slightly wider than most of ventral ducts. Marginal tubular ducts on ventral thorax of 2 sizes, mainly as wide as other ventral ducts, only a few are similar to dorsal ducts. 5-locular disc pores numerous. Cerarii and dorsal setae as in *P. calluneti*. C₁₈ with 8-10 trilocular pores; other marginal cerarii with 5-6, dorsal ones with 3-5 pores.

Distribution. Russia (Krasnodar Terr.), Ukraine, Georgia, Armenia, Azerbaijan. The records from Hungary belong to *P. rosae* (F. Kozár, personal communication).

Host plants. Probably oligophagous on *Carpinus*. Records from *Rosa* and *Berberis* refer to *S. rosae* sp. n. Lives on trunks and twigs, mesophilous.

16. *Peliococcus loculatus* sp. n. (Fig. 15)

Holotype: ♀, **Russia**, Karachaevo-Cherkessia, W. Caucasus, 10 km S of Arkhyz, Kazgach river, 1600 m, from *Ribes*, 4.VIII.1976 (E. Danzig), No. 57191, slide No. 44-76, specimen in black circle.

Paratypes: 2 ♀ on the same slide.

Description. Female. A few pore clusters, consisting of 1-3 multilocular disc pores and 1-2 tubular ducts, present on both sides of abdomen. On dorsum they are on margin, on venter occur on marginal and medial parts. Other multilocular disc pores absent from dorsum. Dorsal tubular ducts a few on head and thorax, arranged in transverse, partly doubled rows on abdomen. On venter, tubular ducts forming submarginal bands on thorax and anterior segments of abdomen and transverse, partly doubled rows on posterior abdomen, except seg-

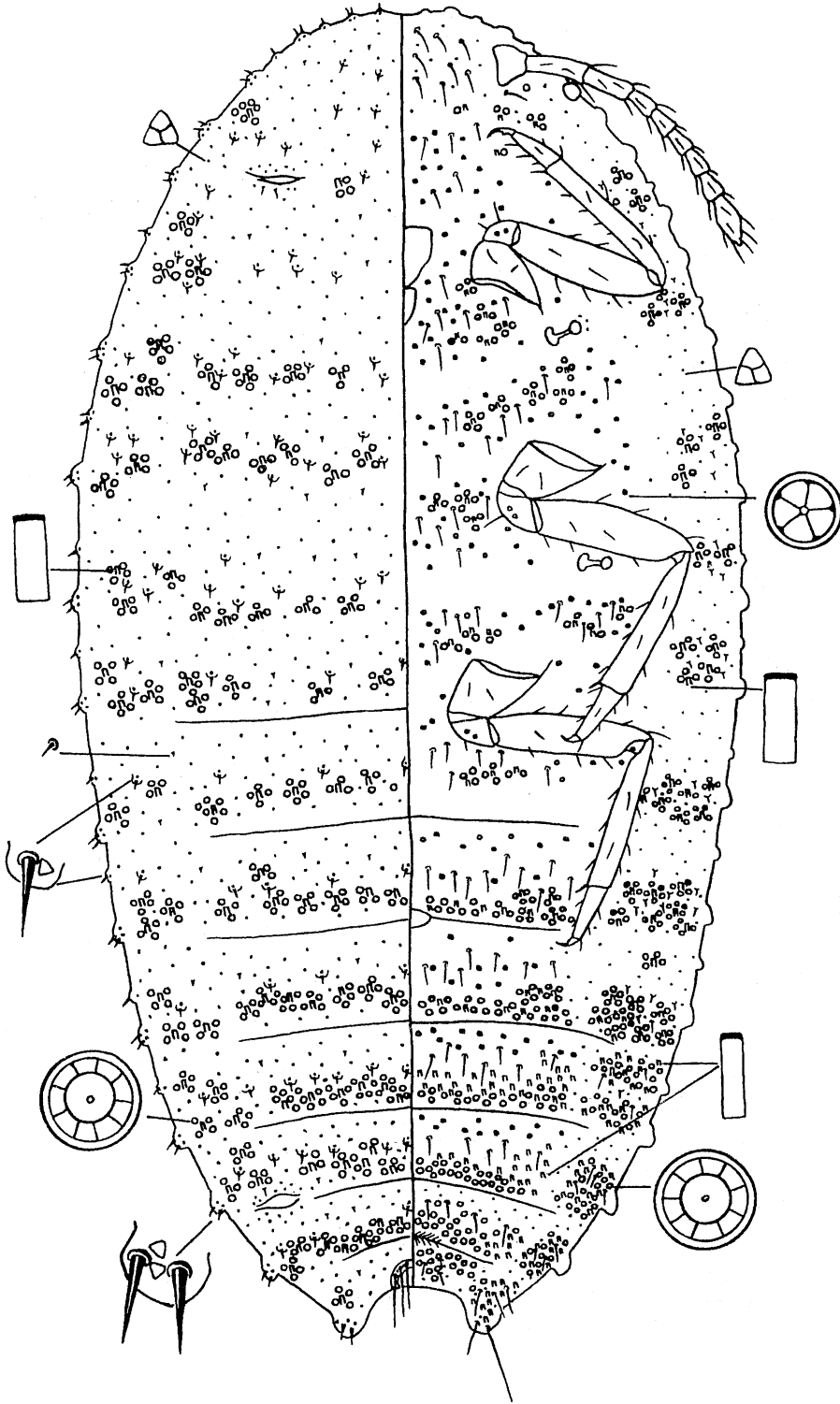


Fig. 13. *Peliococcus rosae* sp. n., female, paratype.

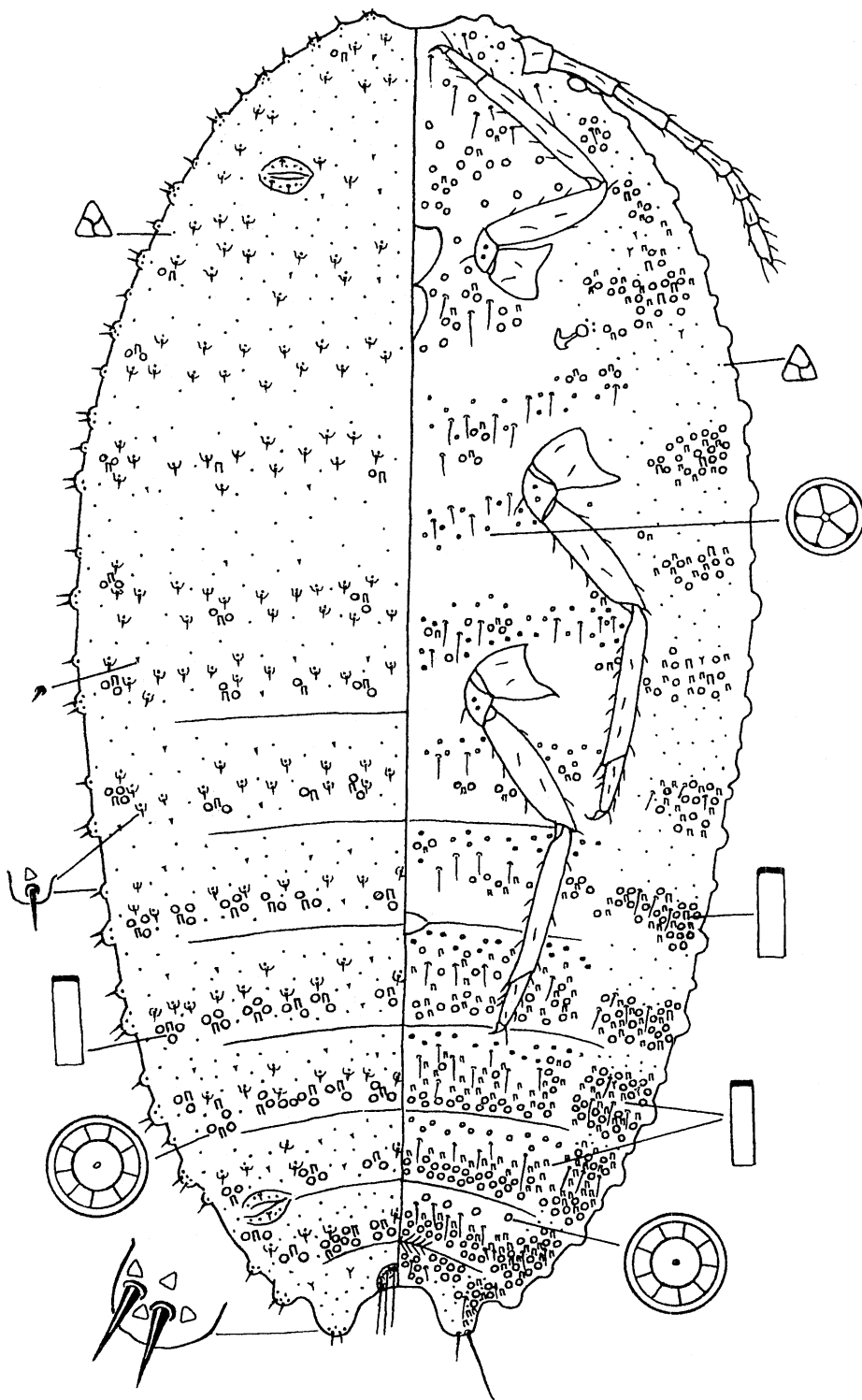


Fig. 14. *Peliococcus morrisoni* (Kir.), female, Georgia.

ment VIII. Dorsal tubular ducts of one size, ventral ducts of the same size as dorsal, only ducts in clusters and on anterior segments of abdomen are much smaller. 5-locular disc pores numerous. Cerarii and dorsal setae as in *P. calluneti*, but median cerarii on segments VII or VI and VII only. All cerarii with 2 or 3 trilocular pores.

Comments. The new species is very close to *P. multispinus*, but differs in the presence of a few clusters of multilocular pores and tubular ducts.

17. *Peliococcus multispinus* (Siraiwa, 1939) (Fig. 16)

Siraiwa, 1939: 66 (*Synacanthococcus*; Sakhalin: Korsakov); Danzig, 1978: 12 (*Spinococcus*; = *tuberculus*); 1980a: 120. – *tuberculus* Borchsenius, 1949: 207 (*Spinococcus*; Amur Prov.: Blagoveshchensk).

Material. In addition to the types of *P. tuberculus*, 7 series from Yakutia and Sakhalin.

Description. Female. Pore and duct clusters absent. Multilocular disc pores absent from dorsum. Dorsal tubular ducts in transverse, partly doubled rows. On venter, tubular ducts scattered in median and marginal zones of thorax and anterior segments of abdomen, forming a marginal band and transverse, in part doubled rows on posterior segments, except VIII. Dorsal and marginal ventral tubular ducts only slightly wider than median ventral ducts. 5-locular disc pores numerous. Cerarii and dorsal setae as in *P. calluneti*. All cerarii with 2-4 trilocular pores. Spines of thoracic and of some abdominal cerarii in marginal and dorsal rows wide apart.

Distribution. Russia: central and northern Yakutia (to Verkhoyansk), Amur Prov., Sakhalin.

Host plants. Polyphagous, lives on *Populus*, *Lonicera*, *Rosa*, *Saxifraga*, *Ledum* in forests and on ornamental plants.

18. *Peliococcus marrubii* (Kiritshenko, 1931) (Fig. 17)

Kiritshenko, 1931: 314 (*Spinococcus*; nom. nud.); 1936: 156 (*Acanthococcus*; Ukraine: Odessa; lectotype, designated here: ♀, "Phenacoccus marrubii mihi, Ukraine, near Odessa, Kholodnaya Balka, on roots of *Marrubium praecox*, 2.VI.1929, A. Kiritshenko"; paralectotype: 1 ♀ with identical label); 1940: 188 (*Phenacoccus*); Borchsenius, 1949: 204 (= *multispinosus*); Matesova, 1968: 109; Ter-Grigorian, 1973: 128; Tereznikova, 1975: 257; Kosztarab & Kozár, 1988: 155. – *multispinosus* Borchsenius, 1937: 55 (*Phenacoccus*; Georgia; lectotype, designated here: ♀, "Phenacoccus multispinosus Borchs., Georgia, Sadzhevakhlo, slopes of

hills, on roots of herbs, 30.VI.1932, No. 814", slide No. 154, specimen in black circle; paralectotypes: 2 ♀ on the same slide).

Material. In addition to the types, 7 series from republics of the former USSR.

Description. Female. Body light yellow. Circulus absent. Pore clusters absent. Multilocular disc pores entirely absent from dorsum, or a few present on posterior segments. Tubular ducts on dorsum in transverse rows and bands, more numerous on body margin. On venter, they form a marginal band, sparse in median thorax and arranged in transverse rows and bands on abdomen. Dorsal and marginal ventral ducts only slightly wider than median ventral ducts. 5-locular disc pores numerous. Cerarii and dorsal setae as in *P. calluneti*. C₁₈ with 5-7, other marginal cerarii with 1, dorsal ones with 1-3 trilocular pores.

Distribution. Ukraine (with Crimea), Georgia, Armenia, Azerbaijan (Nakhichevan), E Kazakhstan, Hungary, Bulgaria.

Host plants. Lives on the roots and near the base of the stems of herbs, commonly Lamiaceae (*Marrubium*, *Thymus*).

19. *Peliococcus latitubulatus* sp. n. (Fig. 18)

Holotype. ♀, Armenia, Azizbekov [now Vaik] Distr., Gerger, forest, roots of wild grasses, 23.V.1953, M. Ter-Grigorian, No. 513, slide No. 294-53.

Paratypes. Uzbekistan, Bukhara Prov.: 7 ♀, Aktau Hills, northern slope, Asteraceae, 8.V.1965 (Danzig), No. 4392, slide No. 6-67.

Description. Female. Pore and duct clusters absent. Multilocular disc pores entirely absent from dorsum. Dorsal tubular ducts of one size, sparse in anterior part of the body and arranged in transverse rows on metathorax and abdomen, except VIII segment. On venter, a single duct similar to dorsal ones set on margin of each segment; smaller ducts scattered on thorax and 2 anterior segments of abdomen, form a row interrupted in the middle on segment III, a wide marginal band and transverse rows and bands in median areas of segments IV-VII, and a marginal group on segment VIII. Dorsal tubular ducts more than twice as wide as ventral ducts. Cerarii and dorsal setae as in *P. calluneti*. C₁₈ with several trilocular pores, other marginal and dorsal cerarii with 1, rarely 2 pores.

Comments. The new species, like *P. marrubii* and *P. multispinus*, has cerarii of "spinococcus type" and lacks pore and duct clusters. It differs from both species in the considerably wider dorsal tubular ducts.

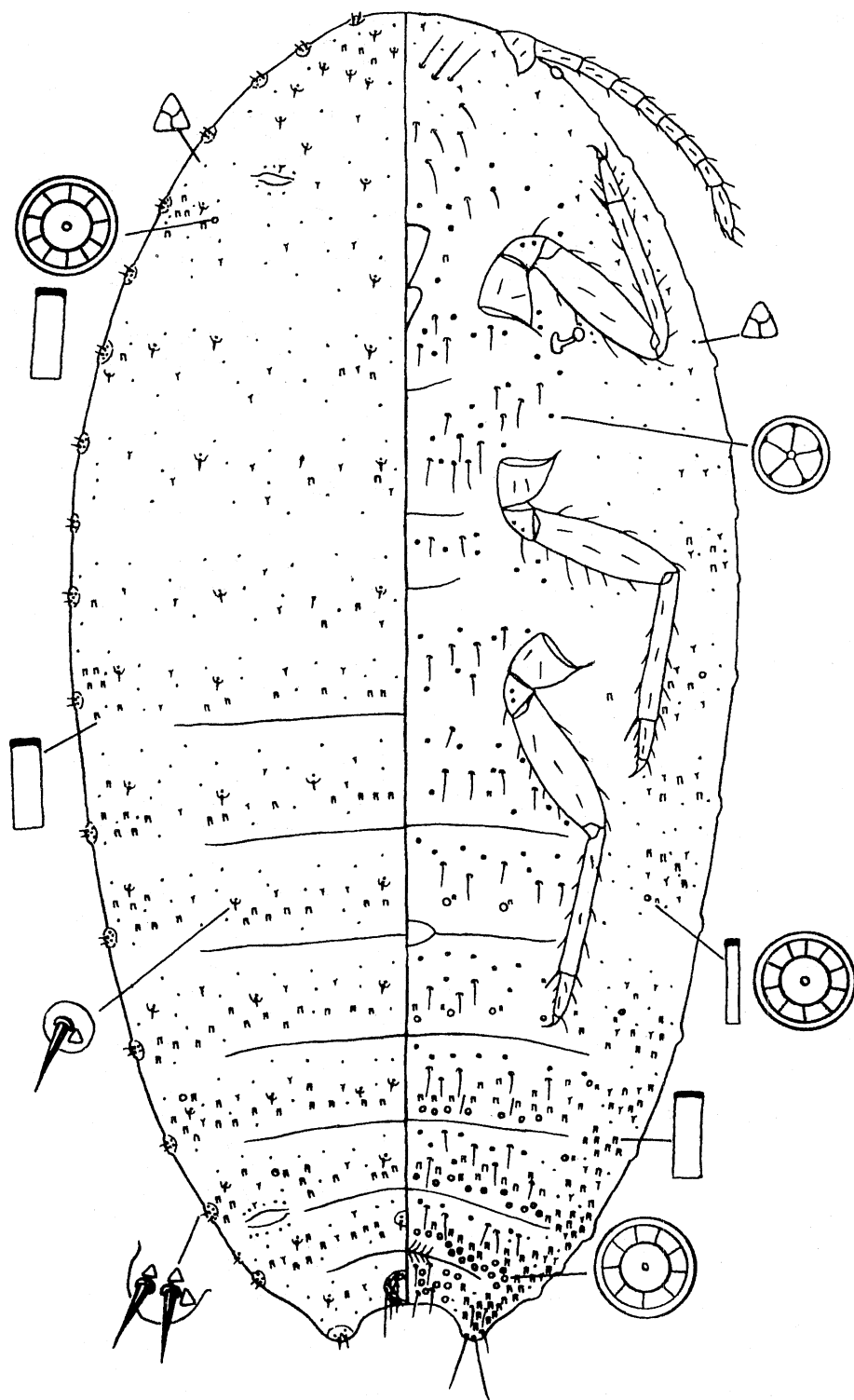


Fig. 15. *Peliococcus loculatus* sp. n., female, holotype.

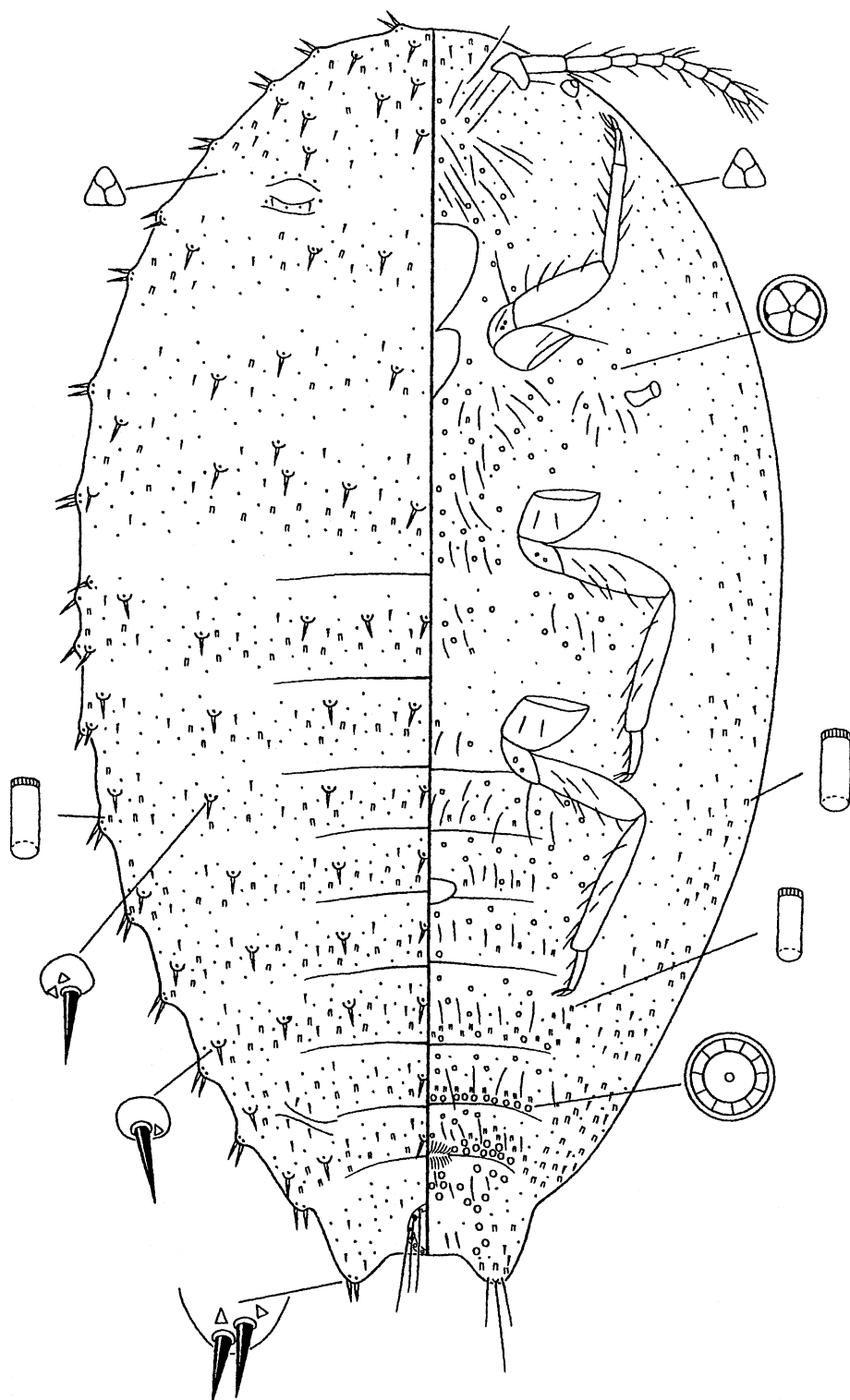


Fig. 16. *Peliococcus multispinus* (Sir.), female, after Danzig (1980a).

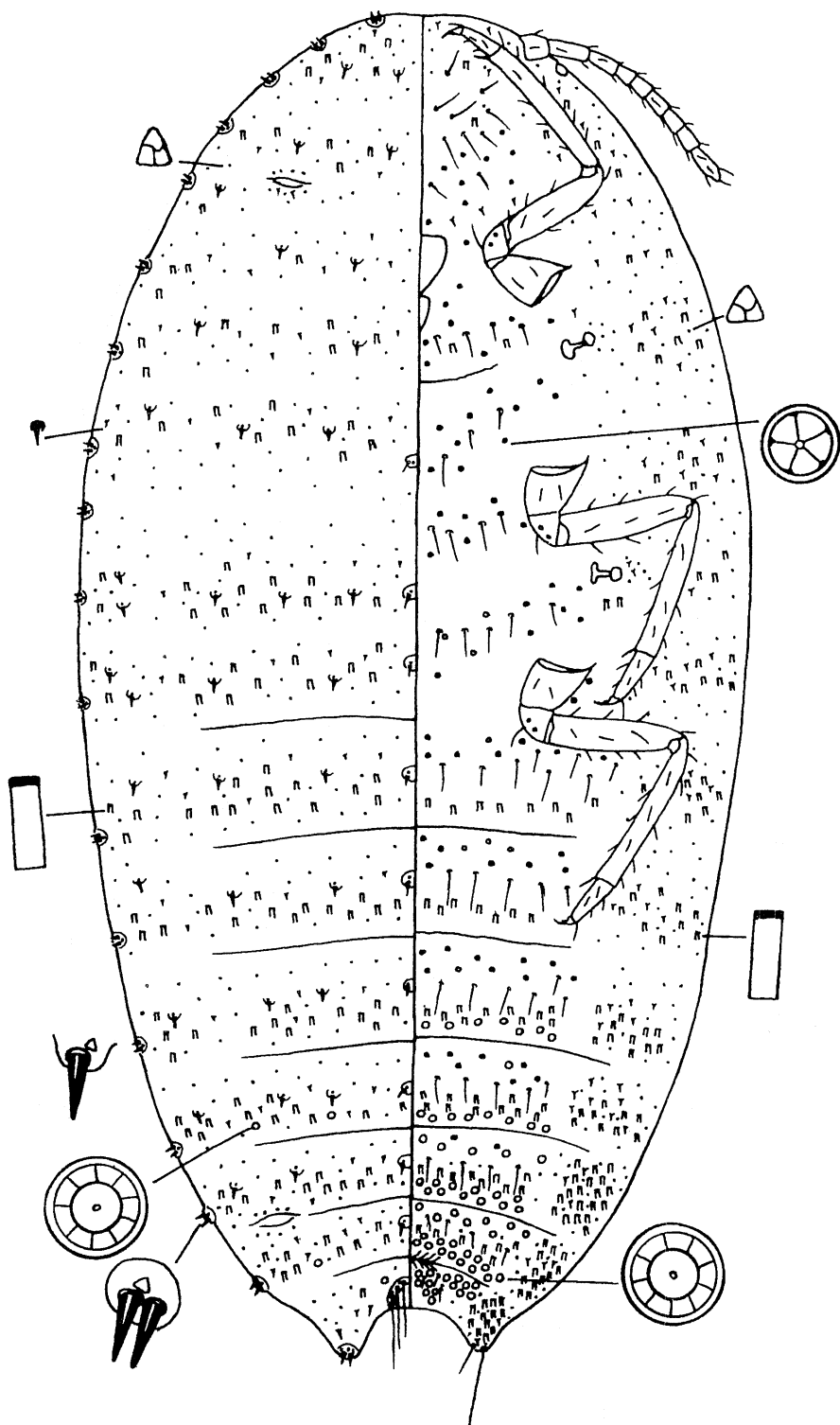


Fig. 17. *Peliococcus marrubii* (Kir.), female, Georgia.

Genus *Peliococcopsis* Borchsenius, 1948

Borchsenius, 1948: 954; 1949: 262; Ter-Grigorian, 1973: 196; Tereznikova, 1975: 198; Kosztarab & Kozár, 1988: 115; Tang, 1992: 509.

Type species: Phenacoccus caucasicus Borchsenius, 1939 (= *priesneri* Laing, 1936), by original designation.

Description. The appearance of the female as in *Peliococcus*. Antennae 9-segmented. Circulus absent in both known species. Multilocular disc pores form compact clusters with a single slender tubular duct in the centre.

Multilocular disc pores in clusters a little larger than usual pores and differ in structure, as in *Peliococcus balteatus* and *P. manifestus*. Clusters arranged in transverse rows on dorsum, on venter concentrated on margin, a few situated in median areas of thorax and anterior segments of abdomen. Multilocular disc pores and tubular ducts also form transverse rows and bands on posterior segments of venter. Dorsal tubular ducts of one size, smaller than ventral ducts. 5-locular disc pores numerous on both body surfaces. Trilocular pores concentrated in cerarii, near ostioles and spiracles, not numerous on dorsum. Cerarii of "peliococcus type", on body margin only. Dorsal setae minute, without trilocular pores near the base.

The genus includes 2 species distributed in the Western Palaearctic and living on grasses.

Key to species of the genus *Peliococcopsis*

- 1(2). Pore clusters consisting of 4-8, commonly 5 multilocular disc pores; on posterior dorsal segments they are coalesced in bands. Trilocular pores sparse on all dorsum 1. *P. priesneri* (Laing)
- 2(1). Pore clusters consisting of 2-6, commonly 3-4 multilocular disc pores; all clusters wide apart. Trilocular pores a few on dorsum 2. *P. parviceraria* (Goux)

1. *Peliococcopsis priesneri* (Laing, 1936)

(Fig. 19)

Laing, 1936: 80 (*Phenacoccus*; Egypt, Giza); Ezzat, 1960: 51 (*Peliococcus*). – *caucasicus* Borchsenius, 1937: 54 (*Phenacoccus*; without mention of the type locality, which was indicated in a subsequent paper; lectotype, designated here: ♀, "Phenacoccus caucasicus Borchs., type, Sukhumi, street, 10.IX.1932, No. 2171, T. 10", slide without No.; paralectotype: 1 ♀ with same data, but on a leaf of grass); *syn. n.*; 1939: 45 (*Phenacoccus*; described again as a new species; Georgia: Abkhazia, Sukhumi); 1949: 261; Ter-Grigorian, 1973: 196.

Material. In addition to the types of *P. caucasicus*, 7 series from Dagestan, Crimea, Armenia and Hungary.

Description. Female. Pore clusters consisting of 4-8, commonly 6 multilocular disc pores.

On posterior dorsal segments, clusters coalesced in bands. Trilocular pores in cerarii, near ostioles and spiracles, sparse over all dorsum. Cerarii numbering 18 pairs. C₃ with 3, other cerarii with 2 setae. C₁₇ and C₁₈ with 3-5, anterior cerarii with 1-2 trilocular pores. Sometimes thoracic and anterior abdominal cerarii absent.

Comments. The new synonymy has been established by comparison of the types of *P. caucasicus* with the redescription of *P. priesneri* by Ezzat (1960).

Distribution. Russia (Dagestan), Ukraine (Crimea), Armenia, Italy, Greece, Hungary, Israel, Egypt.

Host plants. Commonly on *Cynodon dactylon*, recorded also from *Agropyron*.

2. *Peliococcopsis parviceraria* (Goux, 1937)

(Fig. 20)

Goux, 1937: 223 (*Phenacoccus*; France: Corsica); Danzig, 1959: 445; 1960: 178; Tereznikova, 1975: 200; Kosztarab & Kozár, 1988: 117.

Material. Leningrad Prov.: Podporozh'e on Svir River.

Description. Female. Pore clusters consisting of 2-6, commonly of 3-4 multilocular pores. All clusters distinctly wide apart. Trilocular pores in cerarii, near ostioles and spiracles, a few on dorsum. Cerarii numbering 5 pairs (C₃, C₄ and C₁₆-C₁₈), all with 2 setae. C₁₈ with 4-5, other cerarii with 2 trilocular pores.

Distribution. Russia (Leningrad Prov.), Ukraine, France, Italy, Poland, Morocco.

Host plants. The species was collected from *Poa pratensis*, *Cynodon dactylon* and some other grasses.

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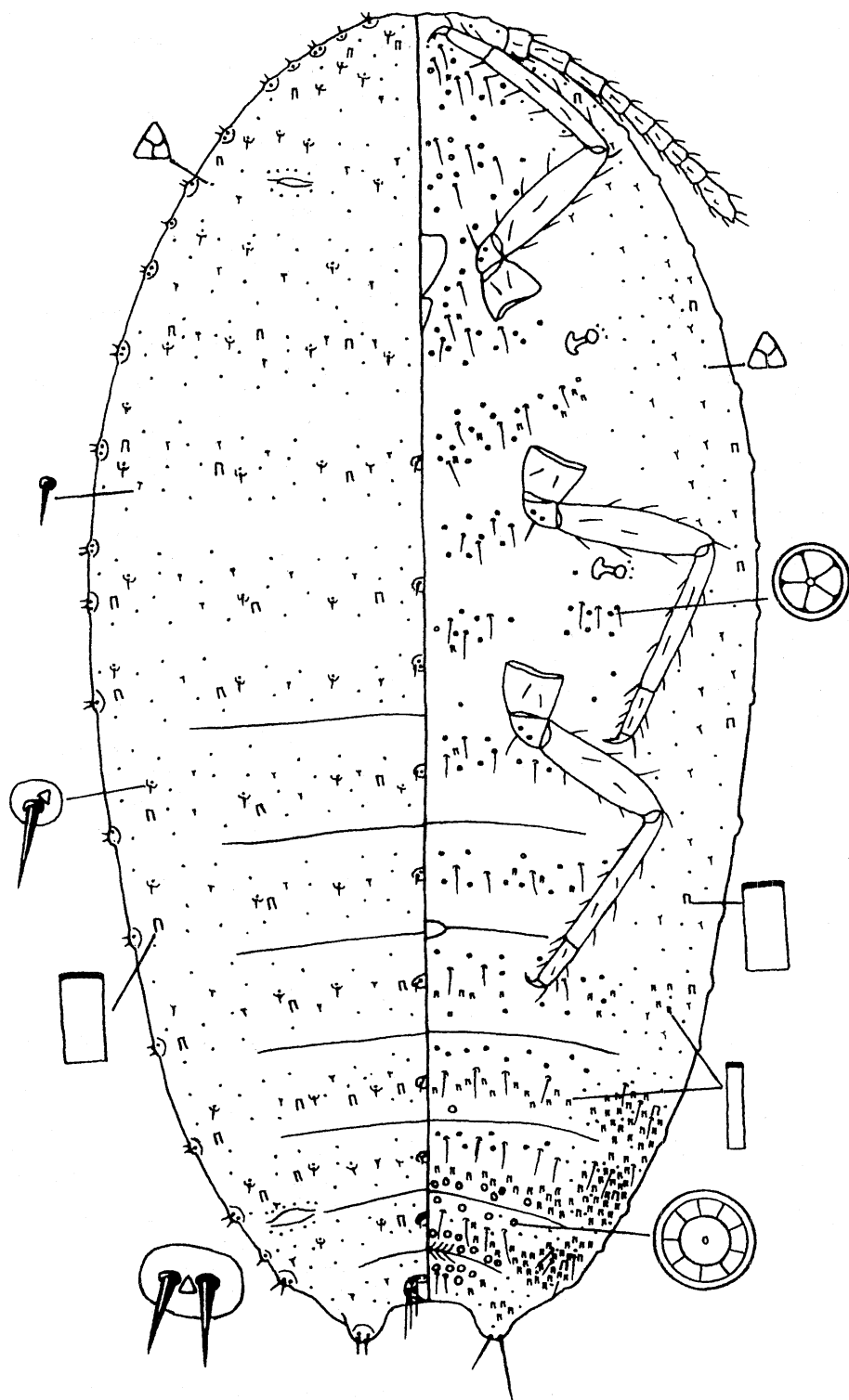


Fig. 18. *Peliococcus latitubulatus* Danzig, sp. n., female, holotype.

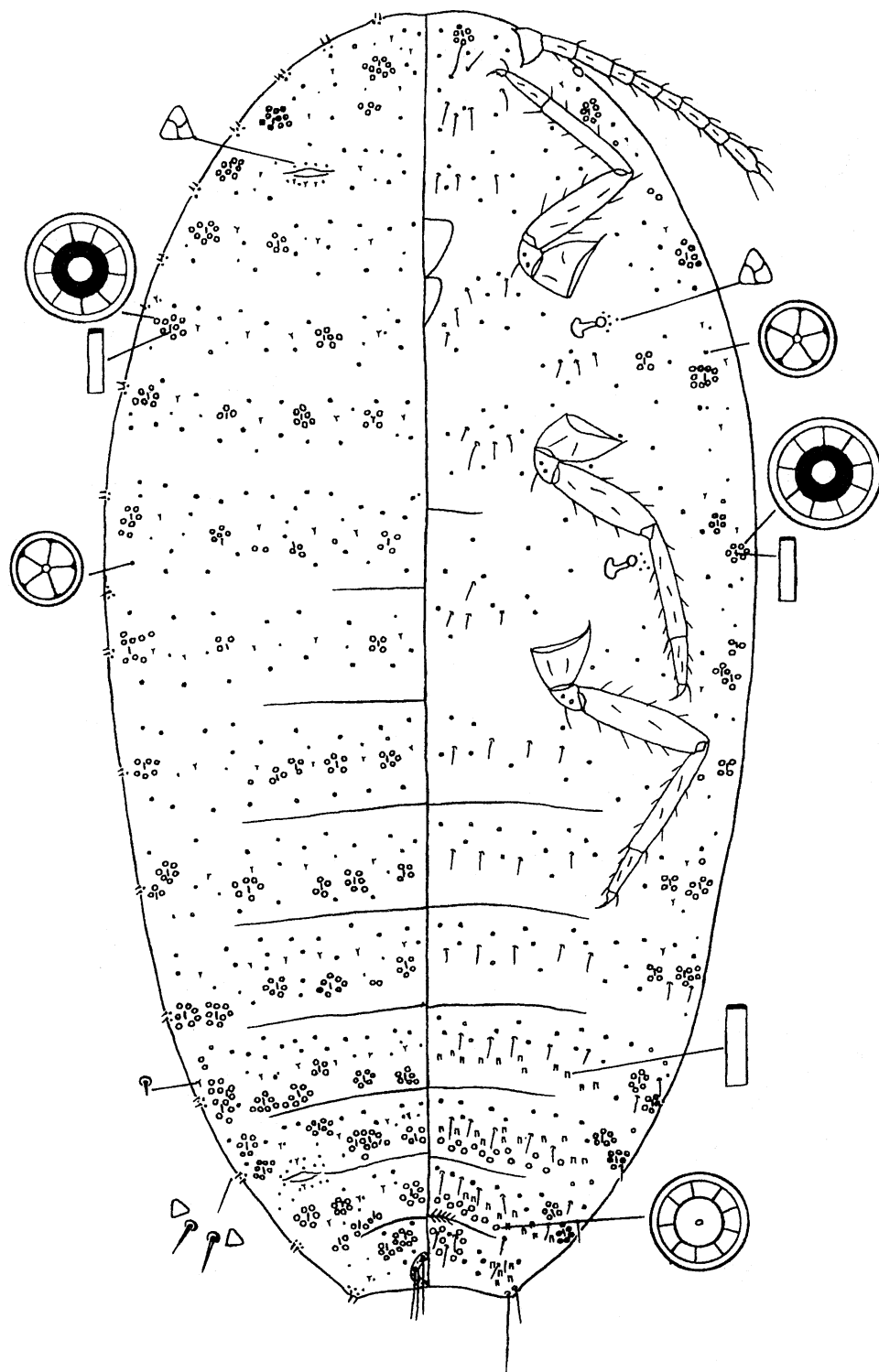


Fig. 19. *Peliococcopsis priesneri* (Laing), female, Dagestan.

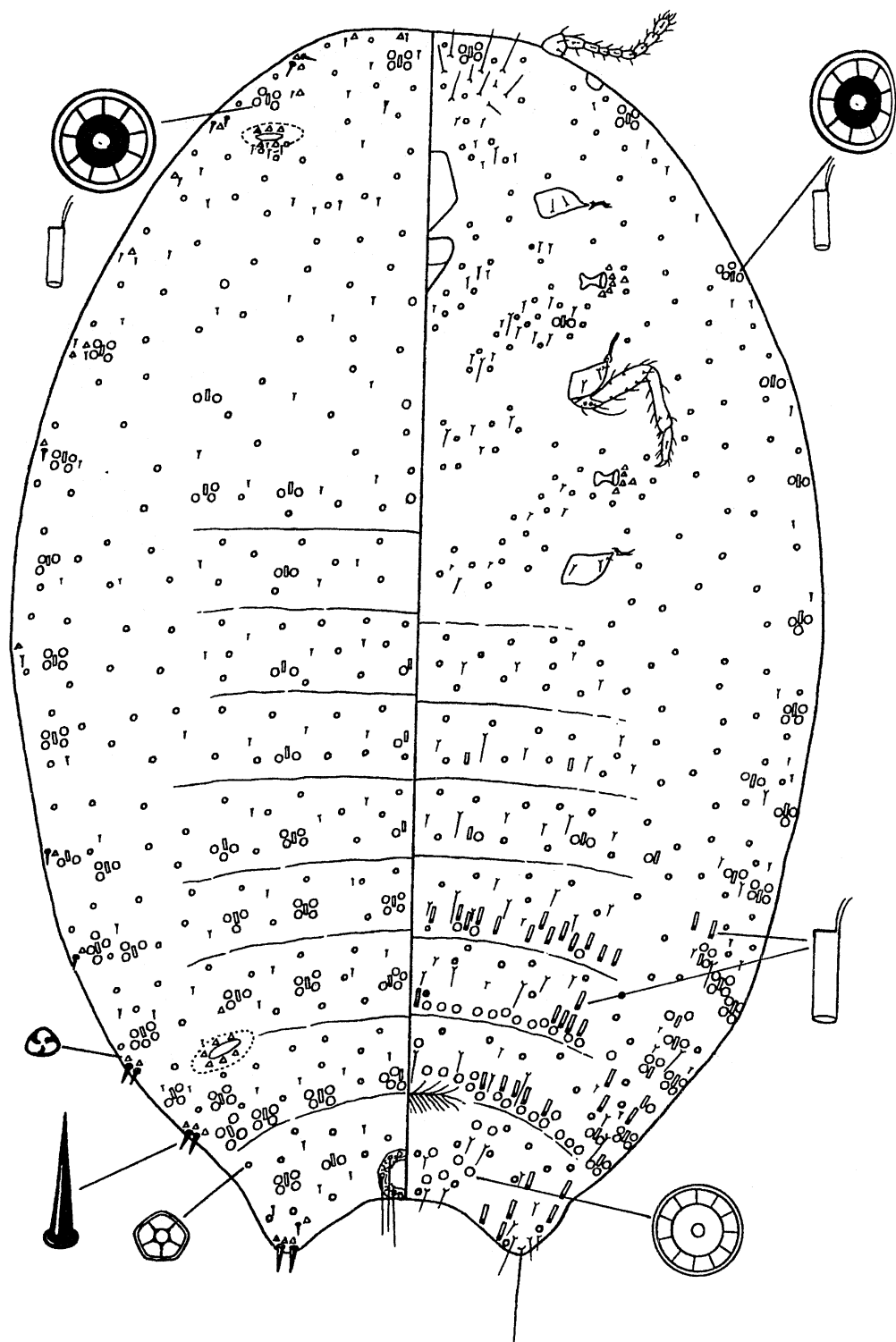


Fig. 20. *Peliococcopsis parvicraria* (Goux), female, after Danzig (1960), with corrections.

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