

## SUPPLEMENTARY DESCRIPTION OF THREE SPECIES OF THE GENUS *SUCTOBELBELLA* JACOT, 1937 (ACARI, ORIBATIDA, SUCTOBELBIDAE)

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**ABSTRACT:** The supplementary description of three mite species of the genus *Suctobelbella* Jacot, 1937 (Oribatida, Suctobelbidae) is presented, based on the material from Russia. Typical materials from museum collections were used to redescribe two of the species. The main morphological traits for these species are summarized.

**KEY WORDS:** Suctobelbid mites, redescription, morphology, systematics.

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### INTRODUCTION

The main goal of our paper is to redescribe and illustrate three mite species of the genus *Suctobelbella* Jacot, 1937, all from the nominative subgenus (Oribatida, Suctobelbidae): *S. amurica* (Krivolutsky, 1966), *S. granifera* Chinone, 2003 and *S. opistodentata* (Goloso, 1970) based on the material from Russia.

*Suctobelbella amurica* (Krivolutsky, 1966) (Acari, Oribatida, Suctobelbidae) was described by Krivolutsky (1966) based on the specimens sampled from the soil in birch forest on the first terrace above the floodplain of the Amur River in the vicinity of Blagoveshchensk, Eastern Russia. Currently, this species is known from most of the Palaearctic Region (except North) and India (Tripura) (Subias 2017): e.g., the Amur Region (Krivolutsky 1966, Ryabinin 2015), the Primorsky Territory, the Khabarovsk Region (Ryabinin 1977, 2015, Golosova *et al.* 1983), Transnistria (Yavornitsky and Melamud 1991), the Volga Region (Gatilova and Krivolutsky 1968), Central Asia (Krivolutsky 1966; Rakhimbaeva 1995), Poland (Niedbala and Olszowski 2008), the Transcarpathian Region (Melamud 2009, Karppinen *et al.* 1992), Nizhny Novgorod (Ermilov 2008), the North of the Iberian Peninsula (Moraza 2009), and Tripura (Chakraborti and Bhattacharya 1991, 1992; Sanyal 2000).

*Suctobelbella granifera* was described by Chinone (2003) from the vicinity of Mt. Raus, on the Shiretoko Peninsula, Hokkaido, from the forest litter under *Betula ermani* and *Picea jezoensis*; from Shibetsu Toge, Hokkaido, from the forest litter under *Picea jezoensis*, *Quercus mongolica grosseserrata* and *Betula ermani*; and at Mt. Kiyosumi, Chibakenin, from the forest litter under *Abies firma*. It was also observed in the Caucasus (Shtanchaeva and Subias 2009; Abdurakhmanov and Davudova 2013)

and in Spain (Subias and Shtanchaeva 2011, 2012). This species has a number of morphological similarities with *S. amurica*, but their common features are not considered in the publications.

*Suctobelbella opistodentata* was described by Golosova (1970) from the Kuril Islands. So far, this species is known from the Palaearctic Region: e.g., the Kuril Islands (Goloso, 1970; Golosova and Pan'kov 1978; Ryabinin and Pan'kov 1987; Pan'kov 1989; Pan'kov *et al.* 1997; Ryabinin 2015), the Amur and Khabarovsk Regions, the Kamchatka Peninsula, the Sakhalin Island, and the Primorsky Territory (Goloso, *et al.* 1983; Golosova 1989; Ryabinin and Pan'kov 1987, 2009; Ryabinin 2015), West Siberia (Bragin *et al.* 2003, Tolstikov *et al.* 2003), the Caucasus (Gazaliev 2000; Shtanchaeva and Subias 2005, 2009; Shtanchaeva 2001), Mongolia (Lebedeva and Lebedev 2007), Central Asia (Rakhimbaeva 1995), the Transcarpathian Region (Karppinen *et al.* 1992), the Iberian Peninsula (Subias and Arillo 2001; Moraza 2009; Subias and Shtanchaeva 2011, 2012), Upper Silesia and Poland (Skubala and Duras 2008; Skubala and Marzec 2013; Skubala *et al.* 2016). It differs from *S. amurica* by the structure of the bothridial setae and by non-contiguous vertices of the rostrum teeth (Goloso, 1970; Krivolutsky 1975). Morphological comparison of this biological species with *S. granifera* is not provided. The redescription of this species was partially performed by Mahunka (1979) and Subias and Arillo (2001).

In this paper, we provide the first record of *S. amurica* in the Sakhalin Island and the Voronezh Region of Russia, and the first records of *S. granifera* in Sakhalin Island and the Kemerovo Region. We redescribe and illustrate *S. amurica* based on the type specimens and our personal collections; *S. opistodentata*—based on the type specimens; *S. granifera*—based on our personal collection.

## MATERIAL AND METHODS

**Material.** The type material of *S. amurica*, holotype (A-Or-02) and paratype, was received from the collection of the Zoological Institute of the Russian Academy of Sciences (ZIN). The paratype damaged, partly dried (Figs. 48, 50–56), the holotype dried, badly damaged, not informative (Fig. 49). In addition, we collected this species in two localities in Russia:

a) locality 1—3 specimens, Sakhalin Island, 47°4'1.47" N 142°4'13.47" E, thicket *Larix kurilensis* and 47°4'1.47" N 142°4'29.63" E, thicket *Sasa kurilensis*;

b) locality 2—2 specimens, Voronezh region, 51°53'58.21" N 39°17'3.01" E and 51°56'12.70" N 39°28'22.92" E, mixed forest (*Pinus silvestris* and *Quercus rubur*).

We studied the species *S. granifera* only on the basis of author collections in two localities in Russia:

a) locality 1—2 specimens, Sakhalin Island, 47°4'1.47" N 142°4'13.47" E, thicket *Larix kurilensis* and 47°4'1.47" N 142°4'29.63" E, thicket *Sasa kurilensis*;

b) locality 2—5 specimens, Kemerovo region, 52°49'21.96" N 87°56'21.27" E and 55°33'59.57" N 85°51'3.61" E, pine forest (*Pinus silvestris*).

The type material of *S. opistodentata*: holotype (A-Or-71) was received from the collection of the Zoological Institute of the Russian Academy of Sciences. The holotype is damaged, partly dried (Figs. 40–47, 57).

**Methods.** Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. The body length was measured in lateral view, starting with the tip of the rostrum to the posterior edge of the ventral plate. Notogastral width refers to the maximum width in dorsal aspect. Length of body setae was measured in lateral aspect. All body measurements are in micrometers.

Formulas for leg setation are given in parenthesis according to the sequence trochanter–femur–genu–tibia–tarsus (famulus included). Formulas for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus. Morphological terminology used in this paper follows that of F. Grandjean: see Travé and Vachon (1975) for references, Norton (1977) for leg setal nomenclature, and Norton and Behan-Pelletier (2009) for overview.

Drawings were made with a drawing tube using a transmission light microscope “Biomed 6 variant.3”.

## SYSTEMATICS

### *Suctobelbella (Suctobelbella) amurica* (Krivolutsky, 1966)

(Figs. 1–16, 48–56)

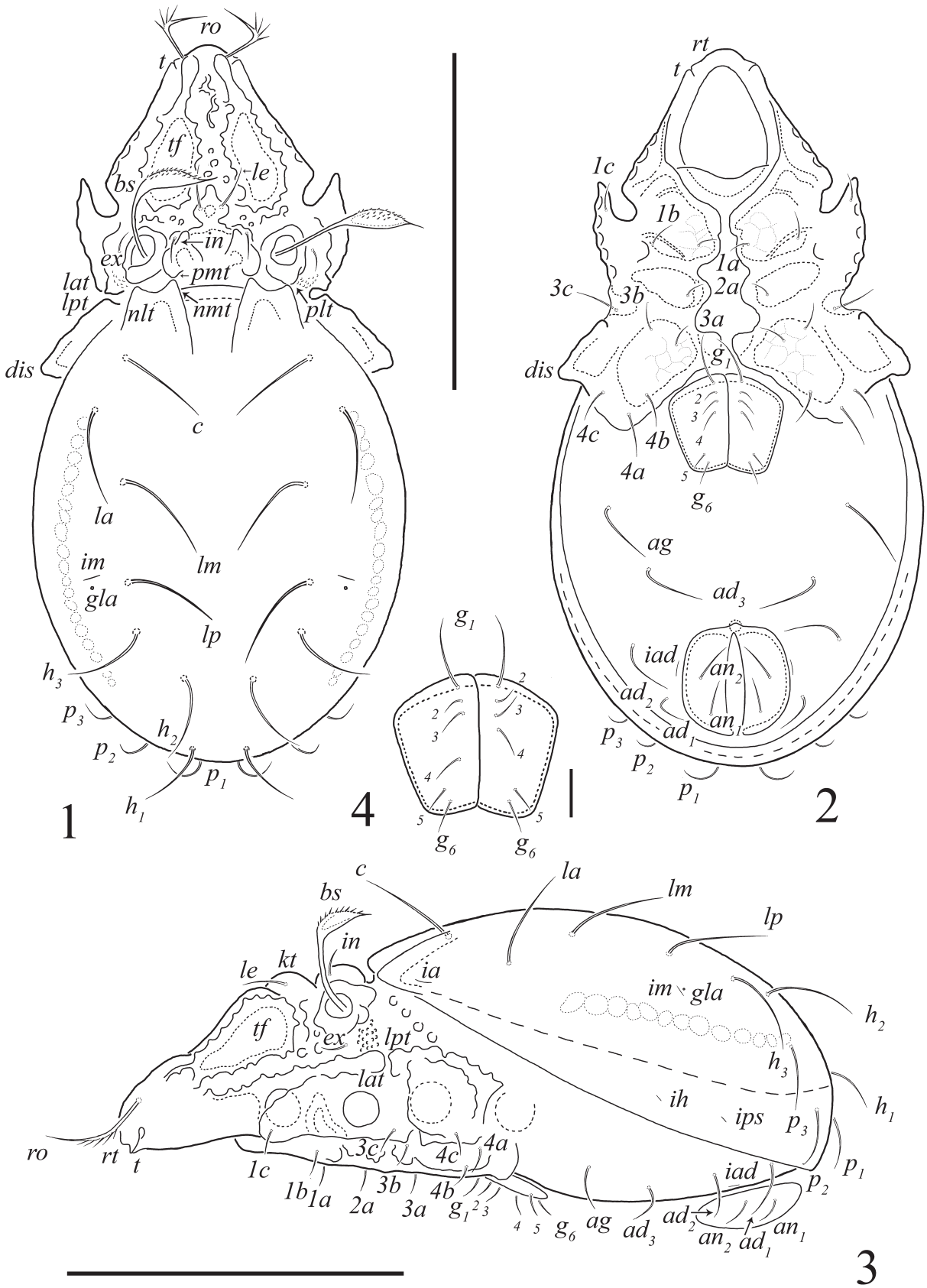
**Measurements.** Body length: 176 (holotype), 180–210 (5 specimens from Sakhalin Island and the Voronezh Region), notogastral width: 105 (holotype), 100–110 (5 specimens from Sakhalin Island and the Voronezh Region). Because the paratype is crushed, it is impossible to measure the dimensions accurately.

**Integument** (Figs. 1–2). Body color light brown. Body surface smooth, only rostrum, interbothridial region, median and lateral parts of prodorsum (anterolaterally and laterally to bothridia) tuberculate (diameter of tubercles up to 2).

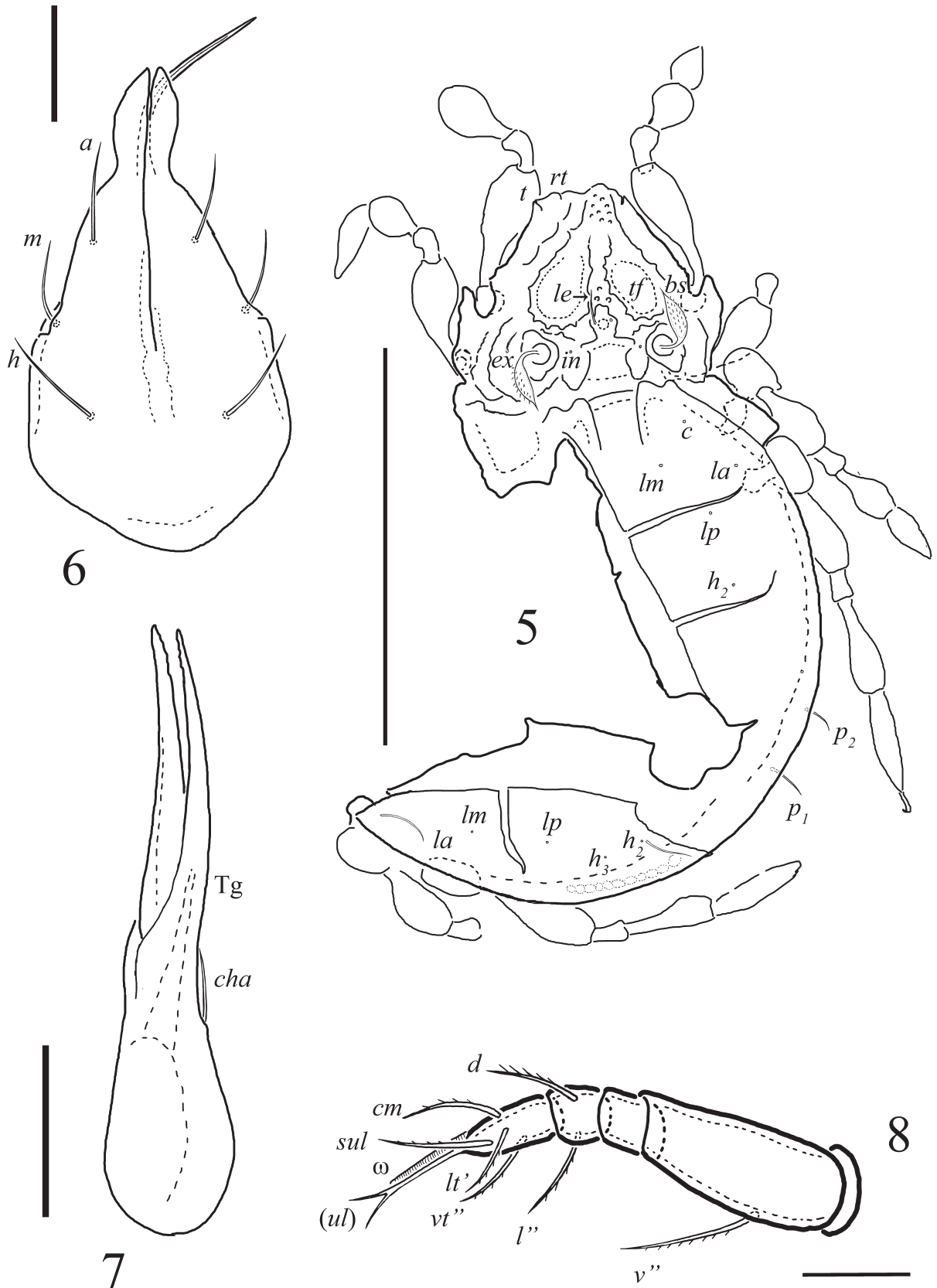
**Prodorsum** (Figs. 1, 3, 5, 48–50, 52–53, 54–56). Rostrum rounded, with one pair of rounded lateral tubercles (*rt*)—it is poorly visible in dorsal view—and two pairs of lateral teeth (*t*)—strong, their ends are close together with each other, wide indentation between them. Tectopedial fields (*tf*) with irregular inner margin, elongate oval in shape and acute anteriorly. Median knob-like tubercle (*kt*) comparatively large, rather rounded, but narrow and truncate anteriorly. Rostral setae (*ro*, 26 for all specimens) geniculate, ciliate unilaterally medio-distally, inserted dorsolaterally. Lamellar (*le*, 10 (paratype)—12), interlamellar (*in*, 6 (paratype)—10) and exobothridial (*ex*, 4 (paratype)—8) setae setiform, smooth, *le* inserted on knob-like tubercle. Bothridial setae (*bs*, 28 (paratype)—48) with long stalk and shorter, unilaterally dilated and barbed head, having pointed apex (the length of which can be up to 1/3 of the length of the head). One pair of interbothridial (*pmt*) and one pair of postbothridial tubercles (*plt*) present, *pmt* rounded distally, *plt* slightly doubled.

**Notogaster** (Figs. 1, 3, 5, 51–51). Anterior margin slightly convex. Humeral tubercles (*nmt*, *nl*) fused, triangular, rounded anteriorly, directed towards the interbothridial and postbothridial tubercles respectively, *nmt* slightly larger than *nl*. Ten pairs of notogastral setae setiform, smooth,  $h_1$ ,  $p_1$ ,  $p_2$  and  $p_3$  (14 (paratype)—16) shorter than the other setae (20 (paratype)—30). Setae *c* are located at the base of the humeral tubercles. Notogastral lyrifissures *ia*, *im*, *ip*, *ih* and *ips* and opisthonotal gland openings (*gla*) distinct, *im* located above *gla*.

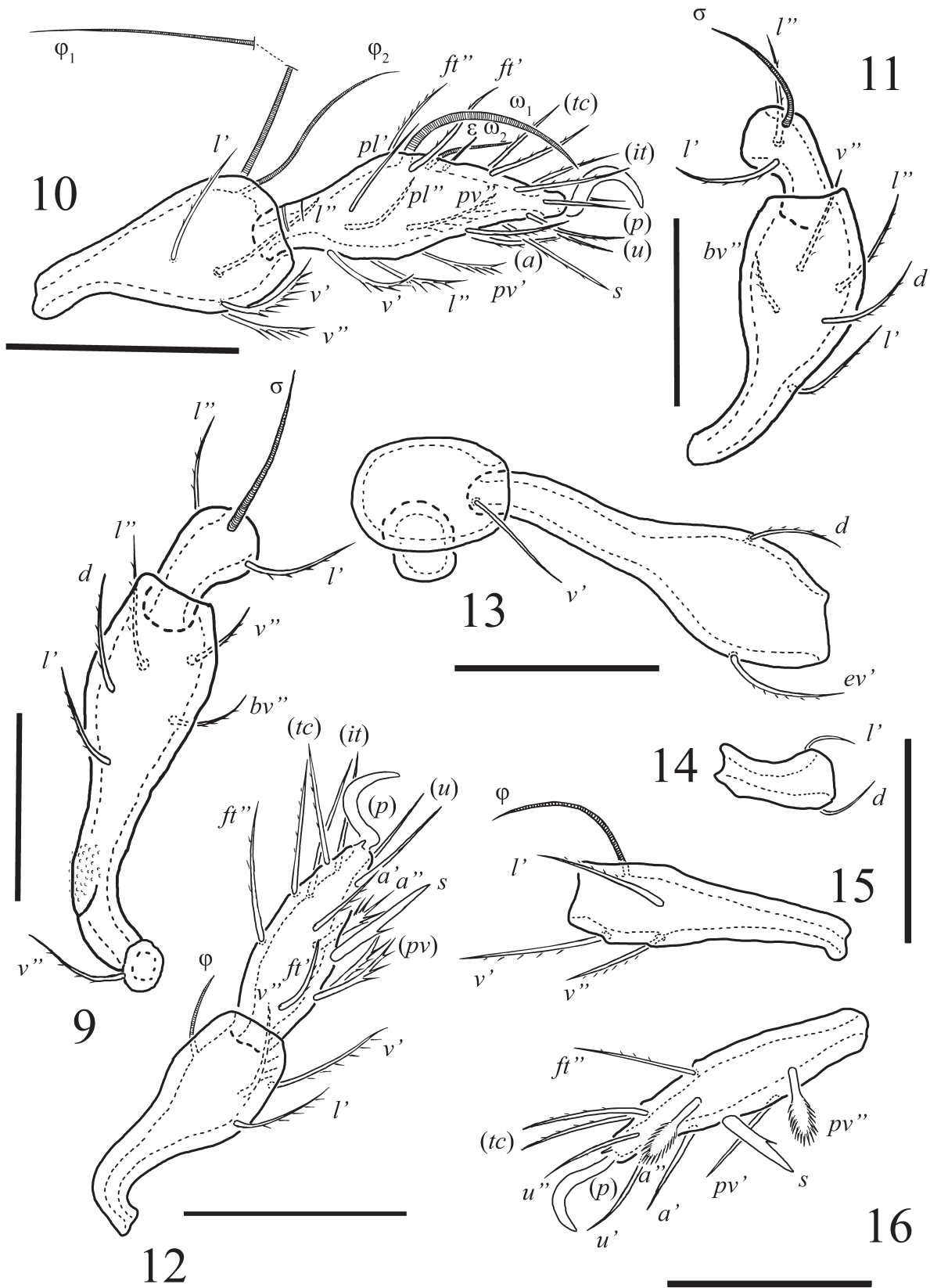
**Gnathosoma** (Figs. 6–8, 50, 54). Subcapitulum longer than wide (34 (paratype) 40×22 (paratype)—26). Subcapitular setae setiform, smooth; *h* (10 for all specimens), *a* (6 for all specimens)



Figs. 1–4. *Suctobelbella amurica* (Krivolutsky, 1966), adult from Sakhalin: 1—dorsal view (legs not illustrated); 2—ventral view (gnathosoma and legs not illustrated); 3—lateral view (gnathosoma and legs not illustrated); 4—genital plates. Scale bars 100  $\mu$ m (1–3), 10  $\mu$ m (4).



Figs. 5–8. *Suctobelbella amurica* (Krivolutsky, 1966), adult, paratype from ZIN (5) and specimen from Sakhalin (6–8): 5—dorsal view (legs illustrated schematically); 6—subcapitulum, ventral view; 7—chelicera, left, antiaxial view; 8—palp, right, paraxial view. Scale bars 100 μm (5), 10 μm (6–8).



Figs. 9–16. *Suctobelbella amurica* (Krivolutsky, 1966), adult from Sakhalin: 9—trochanter, femur and genu of leg I, left, dorsal view; 10—tibia and tarsus of leg I, left, paraxial view; 11—femur and genu of leg II, right, paraxial view; 12—tibia and tarsus of leg III, left, anti-axial view; 13—trochanter and femur of leg IV, left, anti-axial view; 14—genu of leg IV, right, anti-axial view; 15—tibia of leg IV, left, anti-axial view; 16—tarsus of leg IV, left, paraxial view. Scale bar 25  $\mu$ m.

longer than *m* (8 for all specimens). Palps (30 (paratype)–40) with setation 0–1–0–2–6(+ $\omega$ ). Two setae *ul* fused mediobasally. Chelicerae (37–42 for all specimens) with *cha* setae. Trägårdh's organ indistinctly visible.

*Epimeral and lateral podosomal regions* (Figs. 2, 3). Epimeral setal formula 3–1–3–3. Epimeral setae setiform, smooth, *1a*, *2a* and *3a* (5–6 for all specimens) shorter than the other setae (8–10 for all specimens). Two pairs of lateral tubercles (*lat* and *lpt* approximately of the same size) present, rounded distally. Discidia (*dis*) elongate triangular, rounded distally.

*Anogenital region* (Figs. 2–4). Six pairs of genital (*g*<sub>1</sub>, 12 (paratype)–15; *g*<sub>2</sub>–*g*<sub>6</sub>, 6–8 for all specimens), one pair of aggenital (*ag*, 20–22 for all specimens), three pairs of adanal (*ad*<sub>1</sub>, 11; *ad*<sub>2</sub>, 14–16; *ad*<sub>3</sub>, 20 for all specimens) and two pairs of anal (*an*<sub>1</sub>, *an*<sub>2</sub>, 10 for all specimens) setae setiform, smooth. Setae *g*<sub>4</sub> are positioned as shown in Fig. 4. Distance *ad*<sub>3</sub>–*ad*<sub>3</sub> less than *ag*–*ag*. Adanal lyrifissures (*iad*) in paraanal position.

*Legs* (Figs. 9–16). All claws smooth. Formulas of leg setation and solenidia: I (1–5–2–4–20) [1–2–2], II (1–5–2–4–16) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1. Famulus ( $\epsilon$ ) of tarsi I thickened, straight. Setae *p* setiform on tarsi I, and very short, conical on tarsi II–IV. Setae *a*" and *pv*" on tarsi IV more heavily developed, terminating pinnate. Setae *s* strong, with 1–2 teeth.

**Remarks.** The redescription allowed to clarify and supplement the morphological characteristics of *S. amurica* unspecified in the original descriptions. Particularly noteworthy is the presence of lateral tubercles in rostrum *S. amurica* and the presence of sharp spikes at the distal end of the bothridial setae, the length of which can be up to 1/3 of the length of the head. In addition, the morphological variability of some features is shown: *S. amurica* can have an asymmetric arrangement of genital setae. Body size *S. amurica* by Krivolutsky (1966) is 176, from Voronezh and Sakhalin is 180–210.

### **SUCTOBELBELLA (SUCTOBELBELLA) GRANIFERA CHINONE, 2003**

(Figs. 17–31, 58–61)

*Measurements.* Body length: 220–250 (7 specimens from the Kemerovo Region and Sakhalin Island); notogastral width: 120–130 (7 specimens from the Kemerovo Region and Sakhalin Island).

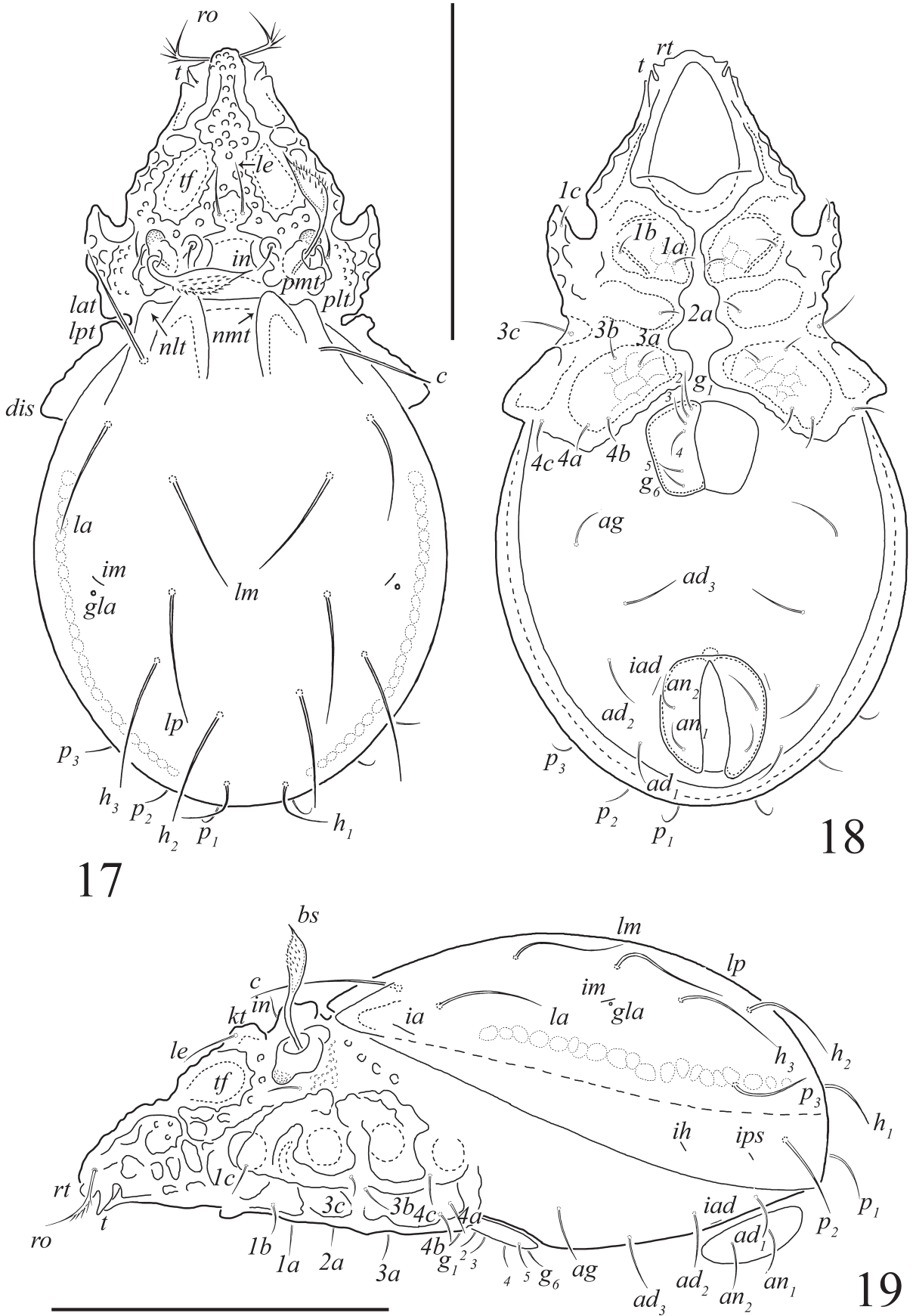
*Integument* (Figs. 17, 19, 20). Body color light brown. Body surface smooth, only rostrum, interbothridial region, median and lateral parts of prodorsum (anterolaterally and laterally to bothridia) tuberculate (diameter of tubercles up to 2–3).

*Prodorsum* (Figs. 17, 18, 19, 20, 30, 31, 59, 60). Rostrum rounded, with one pair of lateral tubercles and three pairs of lateral teeth. The first two pairs of lateral teeth are strong, their ends are close together with each other, wide indentation between the them. Third pair of lateral teeth short, blunted, covers the base of the second prong. The third tooth is well seen in the dorsal and ventral aspects, but is weakly visible in the lateral one. Tectopedial fields with irregular inner margins, elongate oval in shape and acute anteriorly. Median knob-like tubercle comparatively large, rather rounded, but narrow and truncated anteriorly. Rostral setae (24–28) geniculate, ciliate unilaterally in medial parts, inserted dorsolaterally. Lamellar (14–16), interlamellar (9–10) and exobothridial (8–9) setae setiform, smooth, *le* inserted on knob-like tubercle. Bothridial setae (46–53) with long stalk and shorter, unilaterally dilated and barbed head, having pointed apex (the length of which can be up to 1/3 of the length of the head). One pair of *pmt* and one pair of *plt* present, *pmt* rounded distally, *plt* slightly doubled.

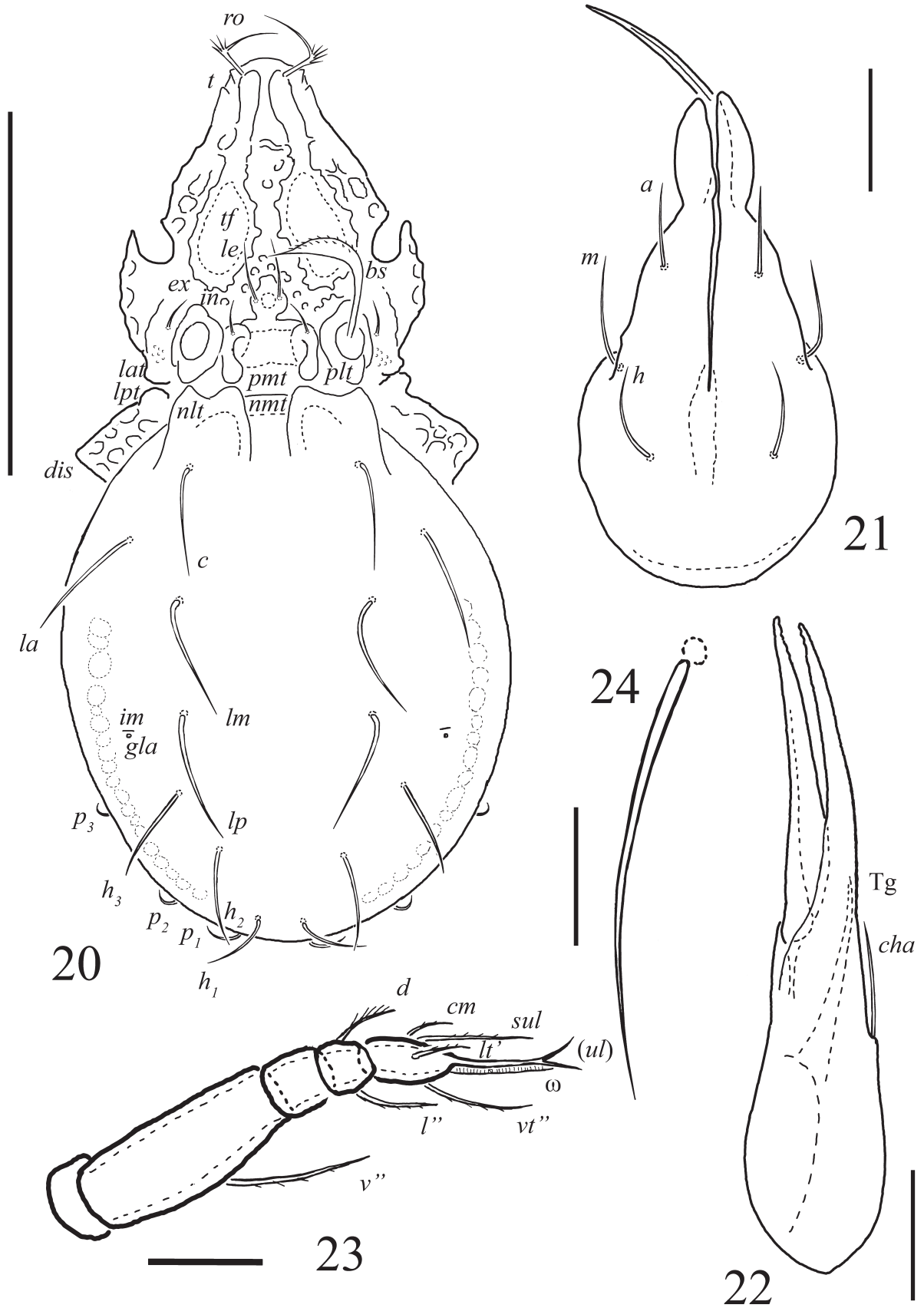
*Notogaster* (Figs. 17, 19, 20, 58, 61). Anterior margin slightly convex. Humeral tubercles fused, triangular, rounded anteriorly, directed towards the interbothridial and postbothridial tubercles respectively, *nmt* slightly larger than *nlt* (in Kemerovo specimens humeral tubercles approximately equal in size). Ten pairs of notogastral setae setiform, smooth, *h*<sub>1</sub>, *p*<sub>1</sub>, *p*<sub>2</sub> and *p*<sub>3</sub> (18) shorter than the other setae (35). Setae *c* are located at the base of the humeral tubercles. Notogastral lyrifissures *ia*, *im*, *ip*, *ih* and *ips* and opisthonotal gland openings distinct, *im* located above *gla*.

*Gnathosoma* (Figs. 21–23). Subcapitulum longer than wide (43–50×28–30). Subcapitular setae setiform, smooth, *h* and *m* (10–11) longer than *a* (6). Palps (38–44) with setation 0–1–0–2–6(+ $\omega$ ). Two setae *ul* fused mediobasally. Chelicerae (51–55) with *cha* setae. Trägårdh's organ indistinctly visible.

*Epimeral and lateral podosomal regions* (Figs. 18, 19). Epimeral setal formula 3–1–3–3. Epimeral setae setiform, smooth, *1a*, *2a* and *3a* (6–7) shorter than the other setae (8–10). Two pairs of lateral tubercles (*lat* and *lpt* approximately the same size) present, rounded distally. Discidia elongate triangular, rounded distally.

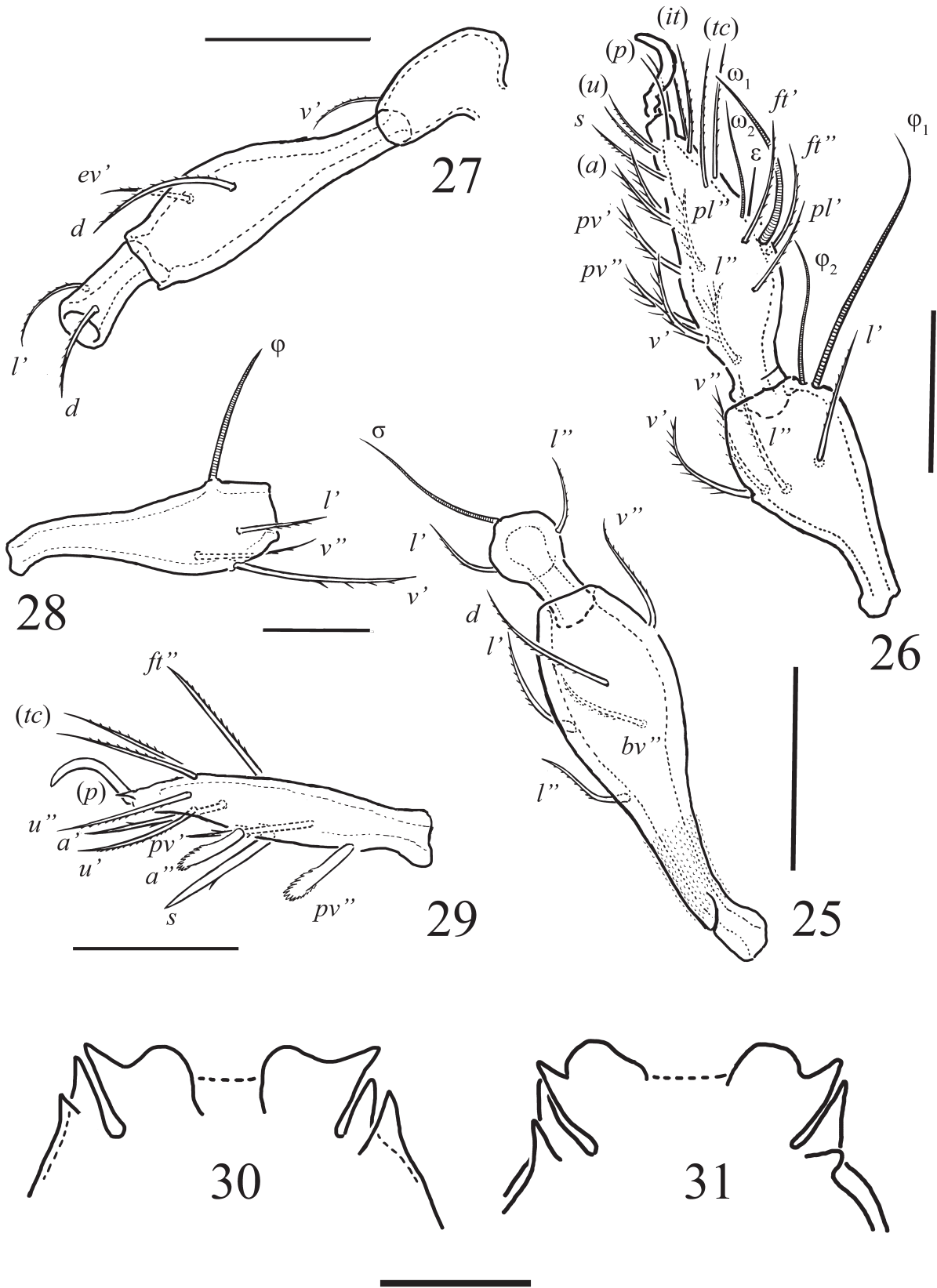


Figs. 17–19. *Suctobelbella granifera* Chinone, 2003, adult from Sakhalin: 17—dorsal view (legs not illustrated); 18—ventral view (gnathosoma and legs not illustrated); 19—lateral view (gnathosoma and legs not illustrated). Scale bar 100  $\mu$ m.



Figs. 20–24. *Suctobelbella granifera* Chinone, 2003, adult from Kemerovo region (20) and Sakhalin (21–24); 20—dorsal view (legs not illustrated); 21—subcapitulum, ventral view; 22—chelicera, left, antiaxial view; 23—palp, left, paraxial view; 24—notogastral seta *la*. Scale bars 100 μm (20), 10 μm (21–24).





Figs. 25–31. *Suctobelbella granifera* Chinone, 2003, adult, from Sakhalin (25–30) and Kemerovo region (31): 25—femur and genu of leg I, right, dorsal view; 26—tibia and tarsus of leg I, right, paraxial view; 27—trochanter, femur and genu of leg IV, left, dorsal view; 28—tibia of leg IV, left, antiaxial view; 29—tarsus of leg IV, left, paraxial; 30, 31—rostrum, dorsal view. Scale bars 25  $\mu$ m (25–29), 10  $\mu$ m (30–31).

*Anogenital region* (Figs. 18, 19). Six pairs of genital ( $g_1$ , 12;  $g_2$ – $g_6$ , 7–8), one pair of aggenital (18–20), three pairs of adanal ( $ad_1$ , 12;  $ad_2$ , 16;  $ad_3$ , 19–20) and two pairs of anal (10) setae setiform, smooth. Distance  $ad_3$ – $ad_3$  less than  $ag$ – $ag$ . Adanal lyrifissures in paraanal position.

*Legs* (Figs. 25–29). All claws smooth. Formulas of leg setation and solenidia: I (1–5–2–4–20) [1–2–2], II (1–5–2–4–16) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1. Famulus of tarsi I thickened, straight. Setae  $p$  setiform on tarsi I, and very short, conical on tarsi II–IV. Setae  $a''$  and  $pv''$  on tarsi IV more heavily developed, terminating pinnate. Setae  $s$  strong, with 1–2 teeth.

**Remarks.** The redescription made it possible to clarify and supplement the morphological characteristics of not specified in the original descriptions. Particularly noteworthy is the location of the third lateral teeth from *S. granifera* and presence of sharp spike at the distal end of bothridial setae, the length of which can be up to 1/3 of the length of the head. In addition, the morphological variability of some features of *S. granifera* is shown: size of humeral tubercle *nmt* can be greater than (specimens from Sakhalin Island) or equal (specimens from the Kemerovo Region) to *nlt*, notogastral setae  $c$  can reach their ends the base of setae  $lm$  (specimens from Sakhalin Island) or not reach their ends at the base of setae  $lm$  (specimens from the Kemerovo Region). Chinone (2003) and Shtanchaeva and Subias (2009) reported about a possible disappearance of one of the three teeth of the rostrum in *S. granifera*. However, these authors do not mention which particular tooth disappears, and they do not provide any specific description of the morphology of the two-toothed *S. granifera*. Our materials, like the drawings of the first descriptions, show that the third teeth is present (although it can be somewhat truncated; Figs. 30, 31). A distinctive feature of the third tooth is that it covers the second tooth. This can create the impression of being two-toothed, when seen from above. Shtanchaeva and Subias (2009) noted a decrease in the body size of *S. granifera* from the Caucasian specimens up to 215–225, whereas typical specimens are characterized by the presence of 2–3 pairs of teeth and the length of the body 245–280 (Chinone 2003). The body size of *S. granifera* from Sakhalin Island is 220; from the Kemerovo Region—220–250.

## **SUCTOBELBELLA (SUCTOBELBELLA) OPISTODENTATA (GOLOSOVA, 1970)**

(Figs. 32–47, 57)

*Measurements.* Because the material is crushed, it is impossible to accurately measure the dimensions. Therefore, here we present the data from the first description. Body length: 230; notogastral width: 111. Subias and Arillo (2001) indicate close sizes for Iberian specimens: body length—225.

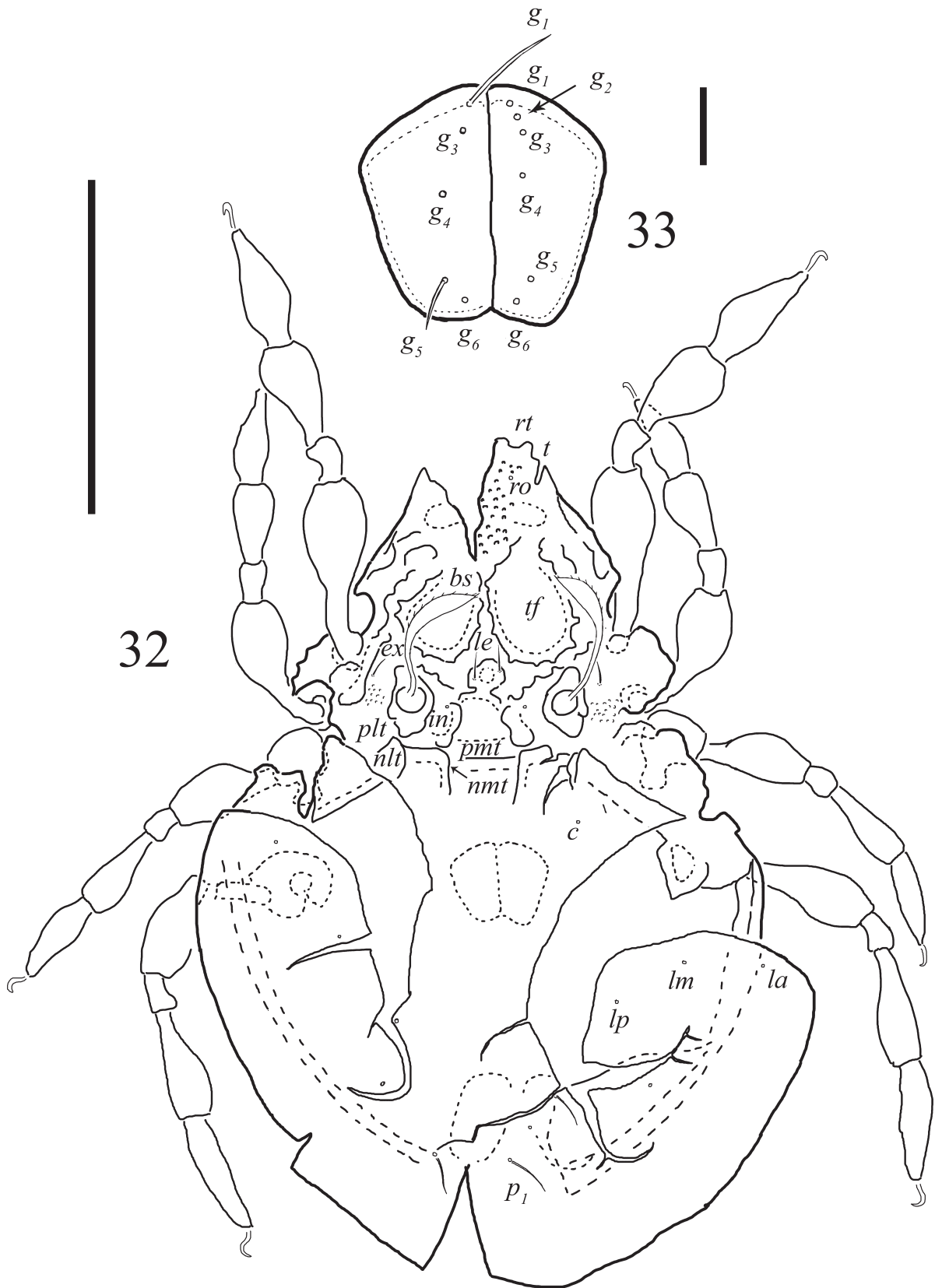
*Integument* (Figs. 32, 41). Body color light brown. Body surface smooth, only rostrum, interbothridial region, median and lateral parts of prodorsum (anterolaterally and laterally to bothridia) tuberculate (diameter of tubercles up to 2).

*Prodorsum* (Figs. 32, 41–45, 57). Rostrum rounded, with one pair of lateral tubercles and two pairs of lateral teeth—strong, their ends close with each other, wide indentation between them. Tectopedial fields with irregular inner margin, elongate oval and acute anteriorly. Median knob-like tubercle comparatively large, rather rounded, but narrow and truncate anteriorly. Rostral setae (26) geniculate, ciliate unilaterally in medial parts, inserted dorsolaterally. Lamellar (12), interlamellar (10) and exobothridial (7) setae setiform, smooth,  $le$  inserted on knob-like tubercle. Bothridial setae (55) with long stalk and elongated unilaterally dilated and barbed head, without a spike on the distal end. One pair of *pmt* and one pair of *plt* present, *pmt* rounded distally, *plt* slightly doubled.

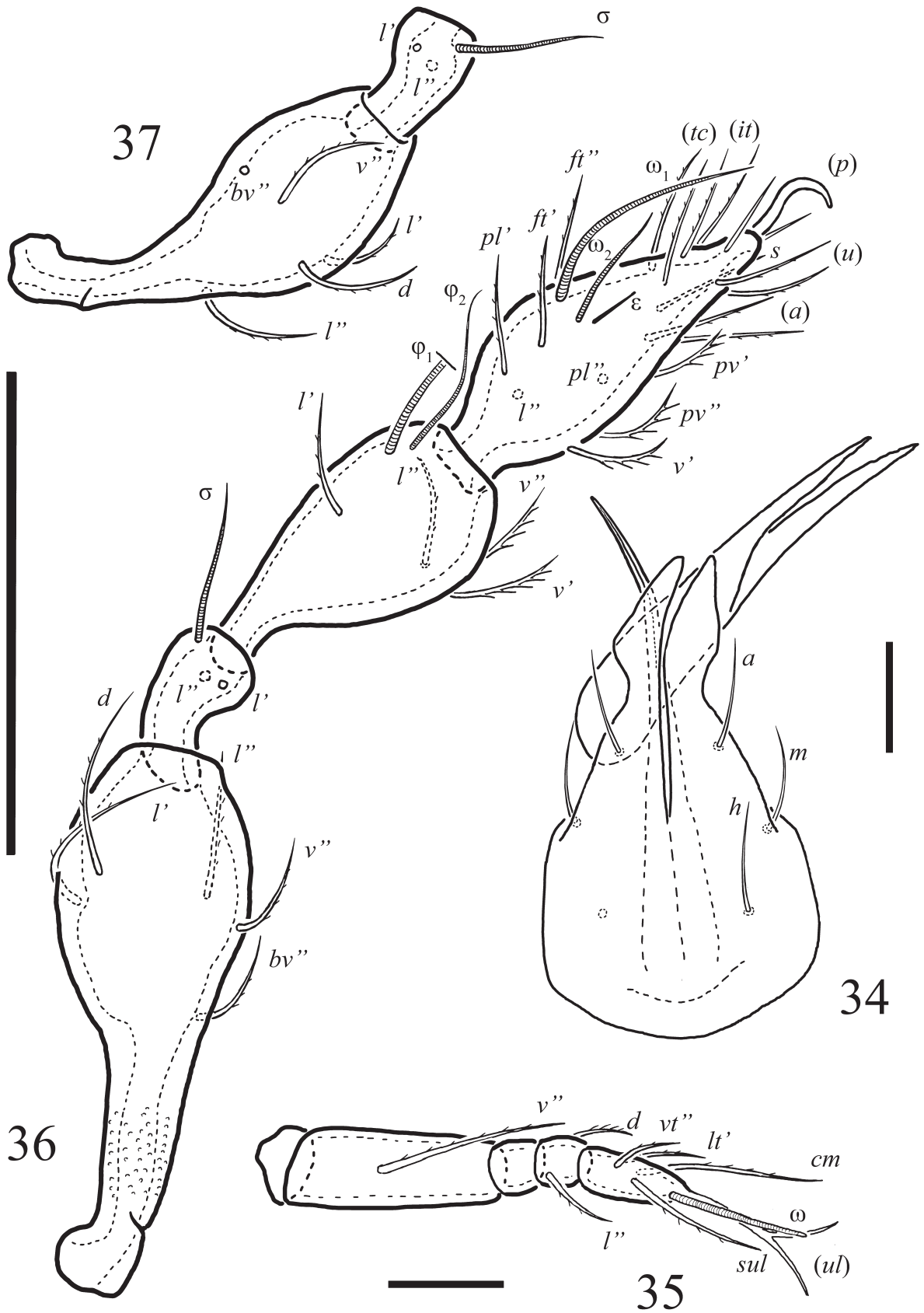
*Notogaster* (Figs. 32, 41). Anterior margin slightly convex. Humeral tubercles fused, triangular, rounded anteriorly, directed towards the interbothridial and postbothridial tubercles respectively, *nmt* slightly larger than *nlt*. Ten pairs of notogastral setae setiform, smooth,  $h_1$ ,  $p_1$ ,  $p_2$  and  $p_3$  (14) shorter than the other setae (24). Most of the setae not preserved. Setae  $c$  located at the base of the humeral tubercles. Notogastral lyrifissures  $ia$ ,  $im$ ,  $ip$ ,  $ih$  and  $ips$  and opisthonotal gland openings distinct,  $im$  located above  $gla$ .

*Gnathosoma* (Figs. 34, 35, 43). Subcapitulum longer than wide (45×30). Subcapitular setae setiform, smooth;  $h$  and  $a$  (10) longer than  $m$  (6). Palps (40) with setation 0–1–0–2–6 (+ $\omega$ ). Two setae  $ul$  fused medio-basally. Chelicerae (51) badly visible on the drug.

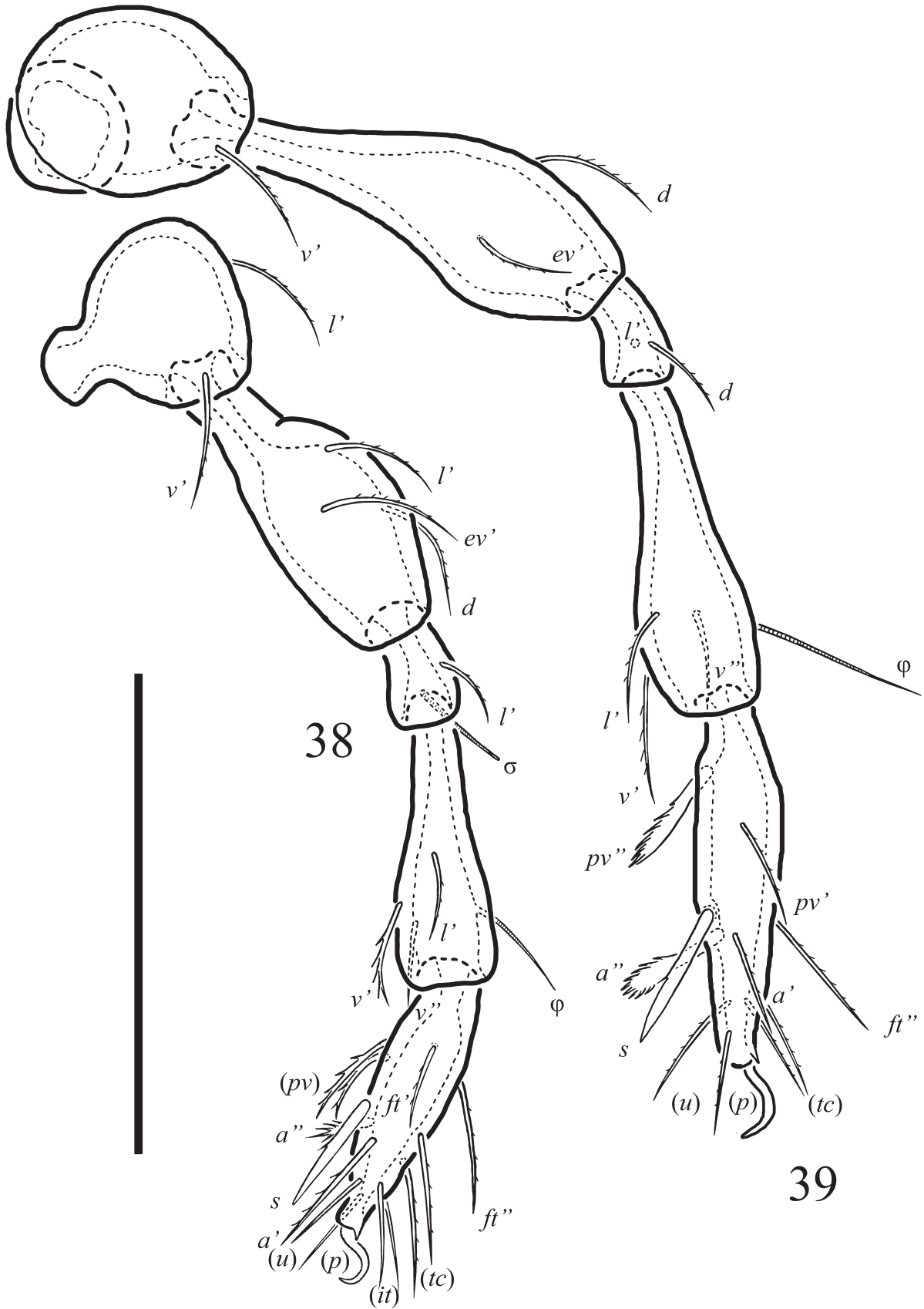
*Epimeral and lateral podosomal regions* (Fig. 40). Epimeral setal formula 3–1–3–3. Epimeral setae setiform, smooth,  $1a$ ,  $2a$  and  $3a$  (6) shorter than the other setae (10). Two pairs of lateral tubercles ( $lat$  and  $lpt$  approximately of the same size) present, rounded distally. Discidia ( $dis$ ) elongate triangular, rounded distally.



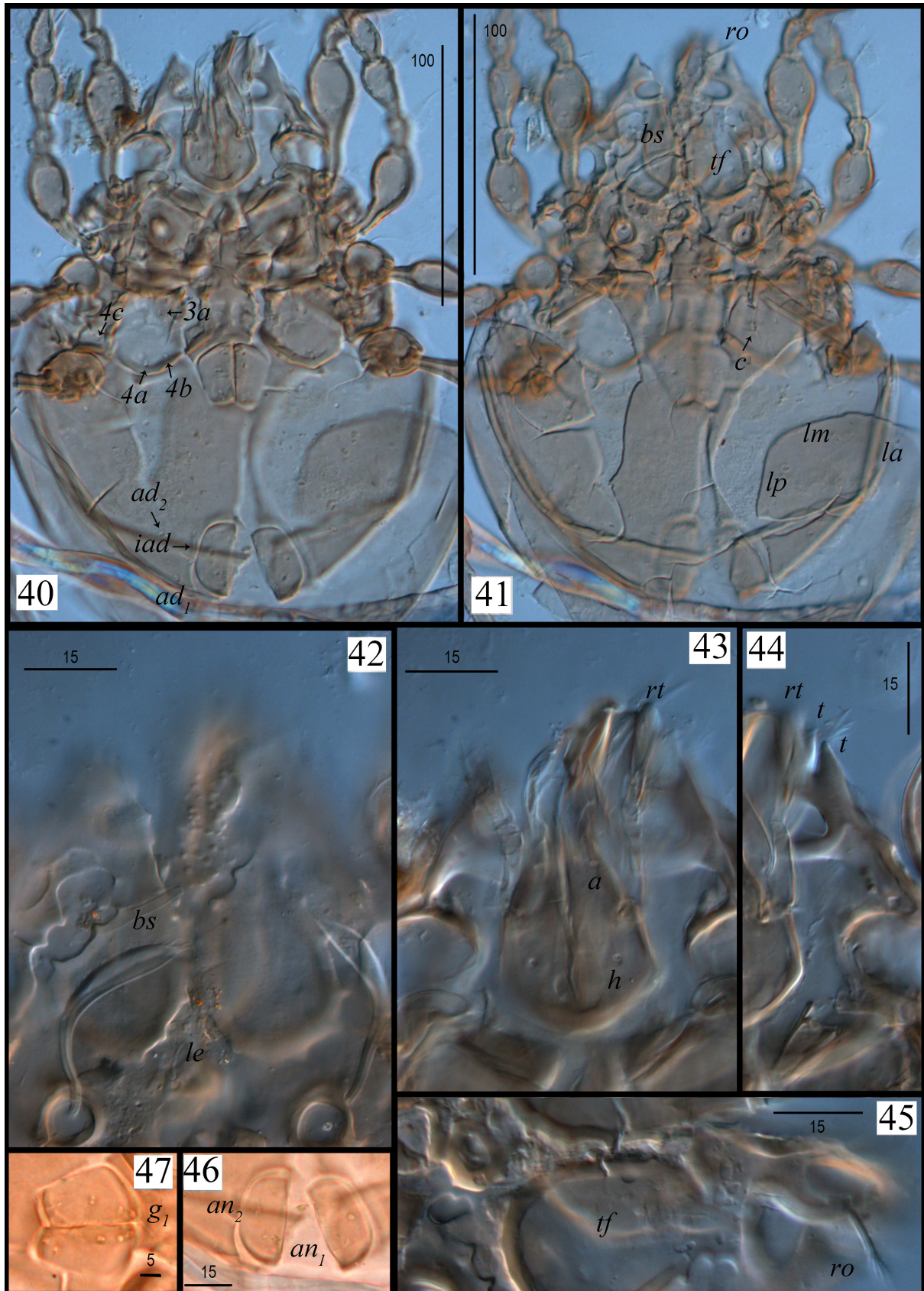
Figs. 32–33. *Suctobelbella opistodentata* (Golosova, 1970), adult, holotype from ZIN: 32—dorsal view; 33—genital plates. Scale bars 100  $\mu$ m (32), 10  $\mu$ m (33).



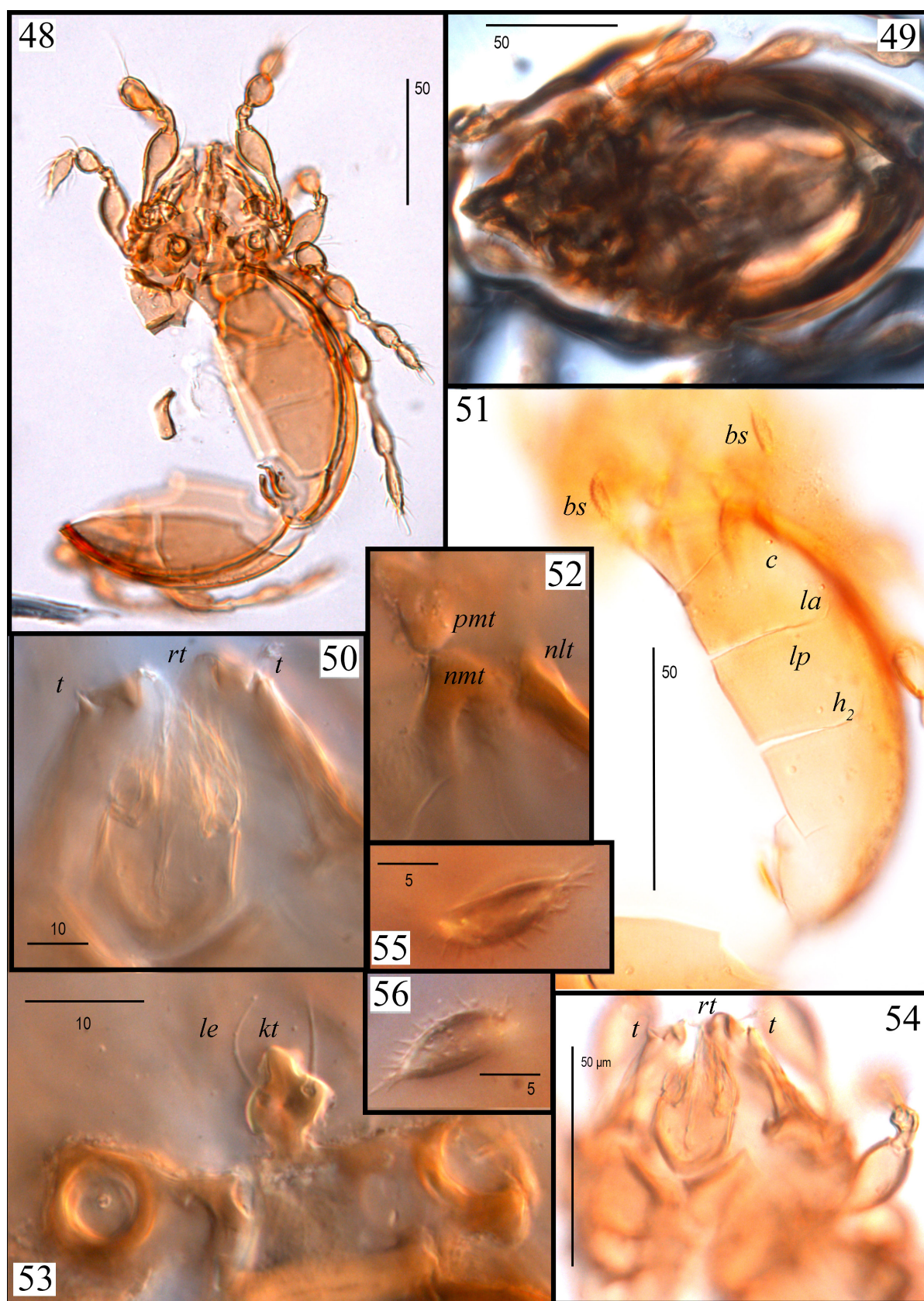
Figs. 34–37. *Suctobelbella opistodentata* (Goloso, 1970), adult, holotype from ZIN: 34—subcapitulum, ventral view; 35—palp, left, ventral; 36—leg I (trochanter not illustrated), left, paraxial view; 37—femur and genu of leg II, left, antiaxial view. Scale bars 10  $\mu\text{m}$  (34–35), 50  $\mu\text{m}$  (36–37).



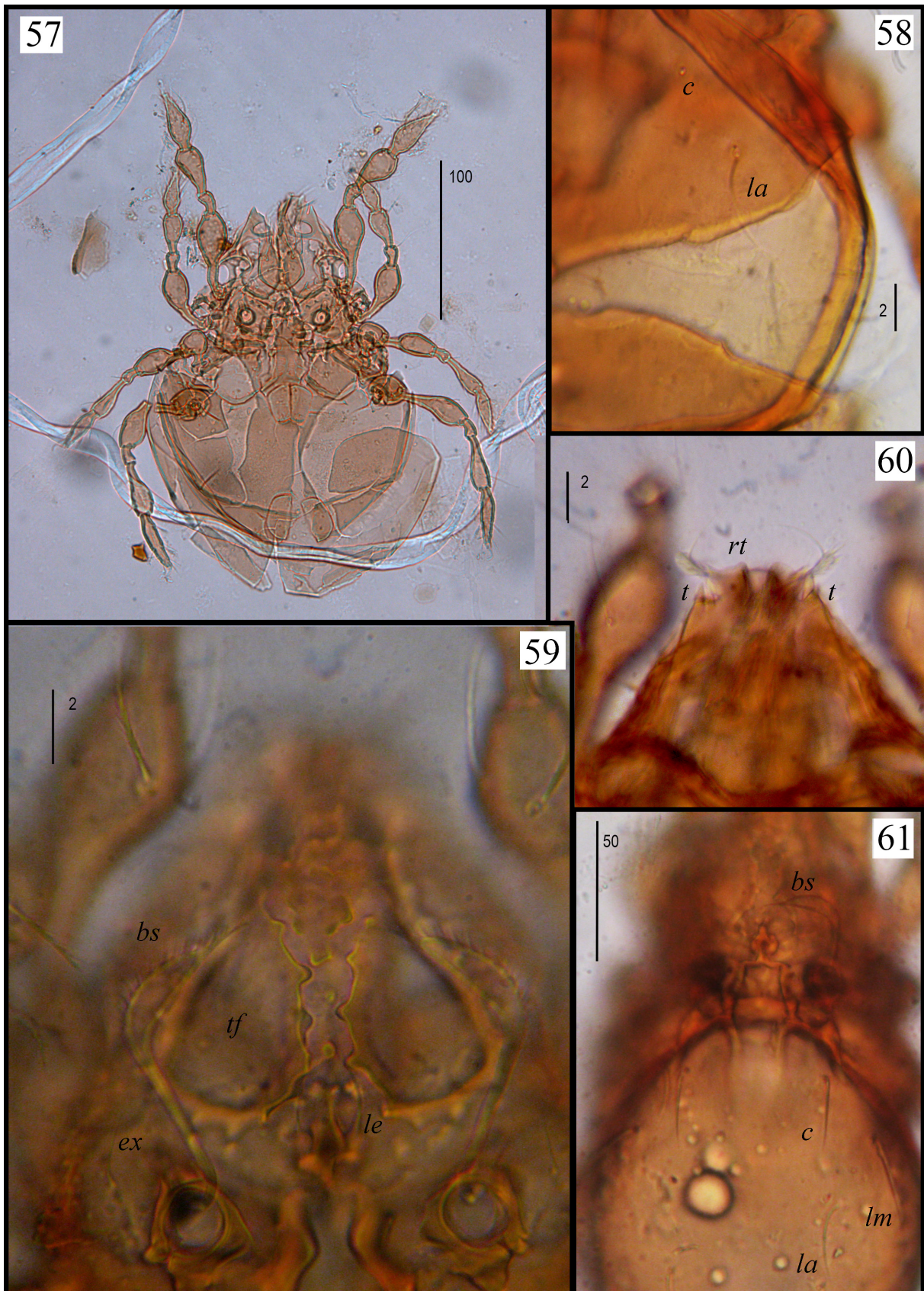
Figs. 38–39. *Suctobelbella opistodentata* (Goloso, 1970), adult, holotype from ZIN: 38—leg III, left, antiaxial view; 38—leg IV, left, antiaxial view. Scale bar 50  $\mu$ m.



Figs. 40–47. *Suctobelbella opistodentata* (Golosova, 1970), adult, holotype from ZIN collection, microscope images: 40—ventral view; 41—dorsal view; 42—prodorsum, dorsal view; 43—subcapitulum, ventral view; 44—right lateral teeth, dorsal view; 45—median knob-like tubercle and *ro*, dorsal view; 46—anal plate, 47—genital plate. Scale bars 100 μm (40–41), 15 μm (42–46), 5 μm (47).



Figs. 48–56. *Suctobelbella amurica* (Krivolutsky, 1966), adult, holotype (49) and paratype (48, 50–56)- from ZIN collection, microscope images: 48—paratype, dorsal view; 49—holotype, dorsal view; 50—rostrum and subcapitulum, ventral view; 51—notogaster, dorsal view; 52—right propodosomal and notogastral tubercle, dorsal view; 53—median knob-like tubercle and bothridium, dorsal view; 54—propodosoma, ventral view; 55—left bothridium setae; 56—right bothridium setae. Scale bars 50 µm (48–49, 51, 54), 10 µm (50, 53), 5 µm (52, 55–56).



Figs. 57–61. *Suctobelbella opistodentata* (Golosova, 1970), adult, holotype from ZIN collection, microscope images (57), *Suctobelbella* (*S.*) *granifera* Chinone, 2003, adult from Sakhalin (58–60) and Kemerovo region (61): 57—ventral view; 58—notogastral setae *la*; 59—propodosoma and bothridial setae, dorsal view; 60—rostrum, dorsal view; 61—dorsal view. Scale bars 100 µm (57), 50 µm (61), 2 µm (58–60).



*Anogenital region* (Figs. 33, 40, 46–47). Number of genital setae asymmetric: right genital plate with six pairs of genital setae ( $g_1$ , 12;  $g_2$ – $g_6$ , 8), left genital plate with five genital setae (absent  $g_2$  or  $g_3$ ,  $g_4$  based relative to its position). One pair of aggenital (size unknown), three pairs of adanal ( $ad_1$ , 12;  $ad_2$ , 15;  $ad_3$ , 20) and two pairs of anal (10) setae setiform, smooth. Distance  $ad_3$ – $ad_3$  less than  $ag$ – $ag$ . Adanal lyrifissures in paraanal position.

*Legs* (Figs. 36–39, 57). All claws smooth. Formulas of leg setation and solenidia: I (1–5–2–4–20) [1–2–2], II (1–5–2–4–16) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1. Famulus of tarsi I thickened, straight. Setae  $p$  setiform on tarsi I, very short, conical on tarsi II–IV. Setae  $a''$  and  $pv''$  on tarsi IV more heavily developed, terminating pinnate. Setae  $s$  strong, with one tooth.

**Remarks.** The redescription made it possible to clarify and supplement the morphological characteristics of *S. opistodentata* not specified in the original descriptions. Particularly noteworthy is the availability of lateral tubercles in rostrum *S. opistodentata* and absence of sharp spike at the end of bothridial setae. The structure of the lateral rostrum is the same as in *S. opistodentata* and *S. amurica*. They have rounded lateral tubercles and two pairs of lateral teeth ( $t$ ). Given the small size of the mites, the difficulty of detecting the teeth at the dorsal aspect and the possible distortion of the material in the preparation, we believe that the degree of contraction of the teeth to each other with their distal ends. This feature given as diagnostic one in the definition of these species in the original description (Golosova 1970; Krivolutsky 1975), is not sufficiently informative for identification and can cause difficulties. At the same time, the differences in the structure of the bothridial setae allow for more successful identification of each of these species. First, it is worth paying attention to the presence or absence of a long spike on the end of the head (present in *S. amurica*, absent in *S. opistodentata*). Proportions of bothridial setae are not informative because of their bending in the drug. Therefore, Mahunka (1979), working with the holotype *S. opistodentata*, notes the petiole of the sensillus to be much shorter and somewhat thicker.

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Table 1

Leg setation and solenidia of *Suctobelbella amurica* (Krivolutsky, 1966), *Suctobelbella granifera* Chinone, 2003 and *Suctobelbella opistodentata* (Golossova, 1970)

Leg	Tr	Fe	Ge	Ti	Ta
I	v'	d, (l), bv'', v''	(l), σ	(l), (v), φ <sub>1</sub> , φ <sub>2</sub>	(ft), (tc), (it), (p), (u), (a), s, (pv), v', (pl), l'', ε, ω <sub>1</sub> , ω <sub>2</sub>
II	v'	d, (l), bv'', v''	(l), σ	(l), (v), φ	(ft), (tc), (it), (p), (u), (a), s, (pv), l'', ω <sub>1</sub> , ω <sub>2</sub>
III	l', v'	d, l', ev'	l', σ	l', (v), φ	(ft), (tc), (it), (p), (u), (a), s, (pv)
IV	v'	d, ev'	d, l'	l', (v), φ	ft'', (tc), (p), (u), (a), s, (pv)

Explanations: Roman letters refer to normal setae, Greek letters to solenidia (except ε—famulus). Single prime (') marks setae on the anterior and double prime (") setae on the posterior side of a given leg segment. Parentheses refer to a pair of setae. Tr—trochanter, Fe—femur, Ge—genu, Ti—Tibia, Ta—tarsus.