

A new species, a new subspecies and hitherto unknown morphs of *Dysaphis* Börner (Homoptera: Aphididae)

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Descriptions of *Dysaphis* (*Pomaphis*) *shaposhnikovi* sp. n. (Primorsk Terr. of Russia) and *D. (P.) anisoidis nairi* ssp. n. (Armenia) are given. Life cycles and hitherto unknown morphs of *D. cephalarioides* Shap., *D. deltoidei* Shap. & Stek. and *D. ussuriensis* Shap. & Stek. are described.

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This work is based on field collecting and transfers of emigrants to secondary host plants in Armenia in 1987, in the South Primorye in 1989 and in East Siberia in 1994, and also on material from the collection of the Zoological Institute, St.Petersburg. The type specimens of the new species and new subspecies are deposited in the Zoological Institute, St.Petersburg, some paratypes are sent to the Natural History Museum, London.

In the article, all measurements (always in μm), number of hairs, rhinaria, etc., and indexes are presented as extreme variants followed by arithmetical means in brackets. In case when samples differ strongly, minimum and maximum values of arithmetical mean are represented in brackets, for example 148-170 (156-165). In descriptions, the more frequently encountered morph, apterous viviparous female is examined in greater detail. For other morphs, the differences from the latter morph are indicated. Measurements are given in the Table.

Dysaphis deltoidei Shaposhnikov & Stekolshchikov, 1989

The apterous viviparous female of this species was described by Shaposhnikov & Stekolshchikov (1989). Below, the fundatrix, emigrant and life cycle are described.

Fundatrix (from *Malus*). Broad elliptic, almost roundish. Grey with slightly waxy pulverulence. Sclerotized, brown: head, inter-

rupted band on pronotum, small and sparse sclerites on meso- and metanotum and abdominal tergites I-VI, bands on tergites VII-VIII, marginal maculae on all abdominal tergites and peritremes. Surface of head wrinkled, of occiput and dorsal side of thorax reticulate, of abdominal tergites I-V wrinkled with hardly noticeable reticulation, of tergite VI faintly reticulate, of two last tergites with the rows of spinules partially fused, of ventral side of thorax wrinkled, of ventral side of abdomen with long rows of small spinules forming strongly stretched cells. Marginal tubercles present only on pronotum (2 tubercles) and on abdominal segment III (1 tubercle). Spinal tubercles absent. Hairs on head and dorsal surface of body acuminate, filiform, or blunt, on antennae and legs acuminate or filiform, on ventral surface of body, on cauda and on anal plate filiform. Pronotum with 2 posterior pleural hairs. Chaetotaxy of first tarsal segments 2,2,2. Head with distinct epicranial coronal suture. Frontal tubercles low; median tubercle not reaching the level of antennal tubercles. Antennae 5-segmented at the expense of fusing of 3rd and 4th segments, without secondary rhinaria. Rostrum reaching mesothorax. Arms of mesosternal furca separated. Peritremes on the abdominal sternites I and II widely spaced. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges. Cauda escutcheon-like.

Body 3014 x 2328, antennae 1065: III 480 x 25, IV 154, V 98 + 170; hind trochanter +

Table. Biometric data for new morphs and new taxa of *Dysaphis*

Morph	Number of samples/specimens	Length of body	Class of sclerotization of cuticle of apterous morphs*	Tubercles		Hairs			number of additional on ultimate rostral segment	number of on abdominal tergite VIII
				marginal on abdominal segments VI and VII	number of spinal	the longest on 3rd antennal segment	length of the longest on abdominal tergite VIII	length to articular diameter of segment		
Fundatrix	1/1	3014	I	0	0	42	67	3	4	
Emigrants	2/20	1740-2582 (2011-2236)	-	0-2 (0.8-1.0)	2-4 (3.2-3.5)	21-31 (25)	56-81 (67-70)	2-4 (3.0)	4-7 (5.0-5.5)	
Fundatrices (Vladivostok)	2/20	2236-2754 (2381-2474)	III-IV (3.6)	1-4 (2.4-2.7)	0-3 (0.6-1.0)	42-59 (52-53)	70-93 (75-84)	2-3 (2.1-2.2)	5-12 (8.6-8.9)	
Fundatrices (Irkutsk)	1/13	2685-3140 (2859)	VI-VII (6.5)	2-4 (3.2)	3-6 (4.3)	70-84 (77)	84-104 (92)	2-4 (2.8)	15-21 (17.5)	
Apterous viviparous females (Irkutsk)	1/10	1867-2489 (2238)	VII-IX (7.9)	2-4 (3.2)	3-7 (4.9)	70-90 (79)	79-98 (89)	4-6 (5.5)	17-24 (20.0)	
Alate viviparous females (Irkutsk)	1/10	1879-2282 (2049)	-	2-4 (3.0)	3-7 (4.9)	50-70 (59)	79-98 (88)	4-7 (5.7)	11-16 (13.8)	
Oviparous females	1/20	1902-2201 (2017)	III-IV (3.7)	2-4 (3.8)	2-4 (2.6)	42-53 (48)	59-81 (71)	2-3 (2.4)	9-14 (11.7)	
D. cephalarioides Shaposhnikov										
Apterous viviparous females	5/20	1348-2697 (1492-2524)	IV-VII (4.7-7.0)	2-4 (2.0-2.8)	2-7 (3.5-5.6)	8-36 (9-34)	18-72 (20-67)	3-6 (3.8-5.0)	7-11 (8.0-10.3)	
Alate viviparous females	2/20	1683-2599 (2172-2386)	-	2-4 (2.4)	1-5 (2.1-3.0)	14-35 (15-25)	42-70 (56-63)	4-8 (4.3-5.9)	6-12 (7.4-9.2)	
Oviparous females	2/9	1279-1936 (1279-1838)	II-IV (2.0-3.4)	2-4 (2.9-4.0)	2-6 (4.1-6.0)	7-22 (8-19)	25-67 (25-62)	3-4 (3.0-3.6)	10-14 (12.0-12.6)	
Males	1/2	1537-1406	-	3-4	4-9	8	25-28	3-5	6-8	
D. (Pomaphis) shaposhnikovi sp. n.										
Fundatrices	1/2	2195-2420 (2308)	II-III (2.2)	0	1-6 (4.0)	7-11 (9)	22-42 (27)	2-3 (2.2)	4-6 (4.4)	
Apterous viviparous females	1/20	1786-2259 (2026)	II	0	0-5 (2.5)	8-14 (11)	20-42 (27)	3-7 (4.7)	3-5 (4.8)	
Alate viviparous females	1/20	1879-2224 (2087)	-	0	1-6 (2.7)	11-14 (12)	22-28 (25)	3-5 (4.2)	4-6 (5.0)	
Oviparous females	1/20	1694-2201 (1873)	I	0	0-3 (1.2)	8-11 (9)	34-48 (40)	2-4 (2.7)	6-8 (6.9)	
D. (Pomaphis) anisoidis natri sp. n.										
Fundatrices	1/2	1706	VII-IX	4	7	22-25	59-73	4	7-8	
Apterous viviparous females	4/24	1131-1798 (1252-1786)	VIII-X (9.0-10.0)	0-3 (0-1.8)	0-8 (4.3-5.0)	16-36 (20-32)	56-81 (65-70)	2-4 (2.0-3.0)	5-9 (6.0-7.5)	
Alate viviparous females	1/6	1596-1706 (1639)	-	0-2 (1.0)	2-5 (3.2)	17-25 (21)	70-79 (72)	3-5 (3.8)	6-8 (6.7)	
Oviparous females	1/20	1127-1418 (1250)	VIII-IX (8.5)	0-3 (1.4)	2-7 (4.4)	14-24 (18)	50-73 (65)	2-5 (3.3)	6-10 (7.6)	
Males	1/11	1152-1210 (1185)	-	0-1 (0.2)	0-4 (2.6)	14-18 (16)	56-65 (59)	2-5 (3.3)	5-7 (5.6)	

* - see Stekolshchikov & Lobanov, 1990.

Table. (Continuation)

Morph	Hairs		Number of secondary rhinaria on antennal segment				Apical rostral segment			Siphunculi	
	posterior on subgenital plate	on cauda	3rd	4th	5th	length	length of 2nd segment of hind tarsus	length/length of siphunculi	length of siphunculi	length	length/width in the middle
D. deltoidei Shaposhnikov & Stekolshchikov											
Fundatrix	30	6	0	0	0	137	1.01	0.9	154	2.2	
Emigrants	14-24 (18.0-19.1)	5.7 (5.3-6.0)	64-87 (73-76)	22-40 (30)	2-9 (4.2-5.9)	140-151 (145-148)	1.04-1.23 (1.11-1.16)	0.9-1.3 (1.0-1.1)	121-163 (139-151)	2.8-4.1 (3.1-3.2)	
D. ussuriensis Shaposhnikov & Stekolshchikov											
Fundatrices (Vladivostok)	21-35 (27.2-30.9)	5-9 (7.1-7.3)	0	0	0	146-165 (154)	1.08-1.33 (1.25)	0.8-0.9 (0.9)	154-202 (177-181)	3.0-4.1 (3.6)	
Fundatrices (Irkutsk)	25-35 (27.7)	8-14 (10.7)	0	0	0	157-168 (162)	1.12-1.23 (1.18)	0.9	171-188 (181)	2.4-3.4 (2.9)	
Apterous viviparous females (Irkutsk)	21-34 (29.1)	10-15 (11.7)	0-3 (0.3)	0-9 (3.8)	0-1 (0.5)	174-188 (179)	1.19-1.25 (1.22)	0.9-1.0 (1.0)	180-194 (184)	3.1-3.8 (3.5)	
Alate viviparous females (Irkutsk)	21-29 (25.0)	9-15 (11.4)	45-54 (51)	19-28 (24)	2-9 (5.9)	149-174 (168)	1.04-1.20 (1.16)	1.0-1.1 (1.04)	154-174 (163)	3.2-3.8 (3.5)	
Oviparous females	35-49 (41.5)	5-10 (7.7)	0	0	0	140-154 (150)	1.22-1.46 (1.33)	1.0-1.2 (1.1)	126-146 (136)	2.4-3.1 (2.7)	
D. cephalarioides Shaposhnikov											
Apterous viviparous females	6-22 (7.3-19.7)	4-6 (5.0-5.7)	0	0	0	140-195 (150-184)	1.26-1.51 (1.28-1.45)	0.6-1.0 (0.6-0.95)	129-292 (154-286)	3.1-5.4 (3.3-4.8)	
Alate viviparous females	9-22 (16.8-17.5)	5-6 (5.3)	12-26 (17-20)	1-9 (3.1-4.5)	0	163-185 (176)	1.18-1.40 (1.28-1.30)	0.6-0.8 (0.7)	230-295 (248-268)	3.9-5.8 (4.8)	
Oviparous females	14-24 (14.0-21.3)	5-7 (5.0-6.5)	0	0	0	140-168 (140-158)	1.31-1.50 (1.38-1.43)	0.8-1.2 (0.9-1.2)	121-210 (124-188)	2.5-3.6 (2.6-3.4)	
Males	-	5	32-39	13-18	3	132-137	1.32-1.38	1.1-1.2	109-123	3.3-3.7	
D. (Pomaphis) shaposhnikovi sp. n.											
Fundatrices	9-14 (11.8)	5-6 (5.2)	0	0	0	129-149 (141)	1.31-1.38 (1.33)	0.3-0.4 (0.4)	373-424 (392)	5.8-7.6 (7.0)	
Apterous viviparous females	8-16 (11.7)	5	0	0	0	123-151 (141)	1.13-1.35 (1.19)	0.3-0.4 (0.3)	331-491 (442)	6.1-9.9 (8.2)	
Alate viviparous females	9-15 (11.6)	5-6 (5.1)	48-67 (60)	21-34 (27)	4-8 (6.4)	126-149 (140)	1.07-1.32 (1.21)	0.4-0.5 (0.4)	320-376 (351)	7.1-9.9 (8.2)	
Oviparous females	18-26 (21-1)	5	0	0	0	107-118 (112)	1.11-1.29 (1.19)	0.4	264-314 (291)	5.8-8.3 (6.9)	
D. (Pomaphis) anisoidis nairi sp. n.											
Fundatrices	12-13	4-5	0	0	0	126-132	1.32-1.42	0.7-0.8	163-196	3.9-4.7	
Apterous viviparous females	6-15 (8.0-13.0)	5-6 (5.0-5.5)	0	0	0	112-132 (117-129)	1.16-1.44 (1.20-1.33)	0.5-0.9 (0.6-0.8)	133-230 (161-222)	3.4-5.1 (4.0-4.5)	
Alate viviparous females	9-15 (12.2)	6-7 (6.3)	14-18 (16.5)	0-5 (3.2)	0	107-121 (115)	1.09-1.21 (1.15)	0.7-0.8 (0.7)	143-171 (157)	3.6-4.4 (3.9)	
Oviparous females	13-19 (16.5)	4-6 (5.4)	0	0	0	104-118 (111)	1.15-1.37 (1.23)	0.7-0.8 (0.7)	129-163 (152)	3.0-4.2 (3.8)	
Males	-	4-5 (4.8)	20-31 (26.2)	7-12 (9.1)	5-7 (6.3)	95-112 (105)	1.12-1.33 (1.22)	0.7-0.8 (0.8)	123-149 (137)	4.1-4.9 (4.4)	

femur 718, hind tibia 910; siphunculus 154×69 ; cauda 140×180 (at base) $\times 149$ (before base).

Emigrant (from *Malus* and *Peucedanum*). Elongated egg-shaped. Brown with dark head, thorax, antennae, tops of femora and tibiae, and tarsi; ventral side of abdomen pulverulent. Sclerotized, brown: head, thorax, bands and marginal maculae on all abdominal tergites and peritremes; bands on tergites I and II almost always interrupted in the middle and often divided into separate sclerites; bands on abdominal tergites III-V united in a central patch; band on tergite VI fused anterolaterally with the posterior margin of the central patch; sclerotized band on tergite VII and marginal maculae always fused. Surface of head and thorax wrinkled, of abdominal tergites I-V smooth with sparse large spinules, of tergite VI reticulate (contour of cells formed by large strongly, smoothed-out spinules), of the two last tergites with rows of partially fused spinules, of ventral side of thorax wrinkled with sparse large spinules, of ventral side of abdomen with long rows of small spinules forming strongly stretched cells. Marginal tubercles always present on prothorax and abdominal segments I-V, medium-sized, strongly protuberant, with diameter 1.0-2.3 times greater than height; marginal tubercles present also on abdominal segment VII in 85% of specimens (2 tubercles in 10%). Spinal tubercles present on head and abdominal tergites VII and VIII. Hairs on head, dorsal surface of body and legs acuminate, filiform, or blunt, on antennae blunt or weakly capitate, on ventral surface of body, cauda and anal plate filiform. Pronotum with 2 posterior pleural hairs. Chaetotaxy of first tarsal segments 3,3,2. Head with more or less distinct traces of epicranial coronal suture. Frontal tubercles not high; median tubercle not reaching the level of antennal tubercles. Antennae 6-segmented; secondary rhinaria not large, elliptical, with diameter 1.9-3.9 times greater than height. Rostrum reaching meso- or metathorax. Peritremes on abdominal sternites I and II usually fused, rarely only continuous or separated by a distance lesser than diameter of peritreme. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges. Cauda escutcheon-like.

Body 1913×830 , antennae 1355: III 443×24 , IV 230 , V 151 , VI $87 + 306$; fore wing 2628; hind trochanter + femur 611, hind tibia 980; siphunculus 137×45 ; cauda 87×132 (at base) $\times 101$ (before base).

Biology. *D. deltoidei* was studied in the south of Primorsk Terr. (Russian Far East) near Partizansk. Adult fundatrix with young emigrants were observed in galls on *Malus mandshurica* (Maxim.) 25.V.1989. Gall of fundatrix: leaf in upper part folded along midrib, strongly swollen, greenish yellow. Gall of fundatrigeniae: the margin of the leaf rolled longitudinally, swollen, red with greenish yellow spots or entirely red. Collections of galls were made from a big tree. Adult emigrants appeared 30.V-15.VI. They were transferred to sets of plants in pots and covered with organic glass cylinders. The sets included *Aegopodium alpestre*, *Anthriscus aemula*, *Libanotis seseloides*, *Peucedanum deltoideum*, *Sphallerocarpus gracilis*, *Torilis japonica*, *Pimpinella* sp., *Rumex* sp. On *Peucedanum deltoideum* emigrants produced larvae, which 28.VI-2.VII formed a colony of apterae. Apterous alienicolae fed actively and bred during some generations.

Distribution. South of Primorsk Terr.

Diagnosis. *D. deltoidei* belongs to the subgenus *Dysaphis* s. str., to a group of species from Siberia and south of Primorsk Terr. (Shaposhnikov, 1986; Shaposhnikov & Stekolshchikov, 1989), and is very similar to *D. mordvilkoii* Shaposhnikov. *D. deltoidei* may be distinguished from other species of this group with the next keys:

Emigrants

1(2). Value of complex index $\frac{f+g}{a+b}$ (where a -

length of the longest hair on 3rd antennal segment, b - width of the largest tubercle on abdominal tergites I-V, f - number of secondary rhinaria on 3rd antennal segment, g - number of secondary rhinaria on 4th antennal segment) 0.66-1.48 (0.89-1.22). Ratio of number of secondary rhinaria on 5th antennal segment to width of the largest tubercle on abdominal tergites I-V 0.0-0.12 (0.03). Apical segment of rostrum 121-149 (129-135) long *D. sibirica* Shap.

2(1). Value of complex index $\frac{f+g}{a+b}$ 1.54-2.31 (1.97),

if less (0.91-2.05 (1.61) in *D. mordvilkoii*), then ratio of number of secondary rhinaria on 5th antennal segment to width of the largest tubercle on abdominal tergites I-V 0.13-0.42 (0.28). Apical segment of rostrum 132-151 (141-148) long.

3(4). Value of complex index $\frac{c+h}{a}$ (where a - length

of the longest hair on 3rd antennal segment, c - width of the smallest tubercle on abdominal tergites I-V, h - number of hairs on abdominal tergite VIII) 1.07-2.00 (1.55). Value of complex in-

- dex $\frac{e+f}{d}$ (where d – length of 5th antennal segment, e – length of apical segment of rostrum; f – number of secondary rhinaria on 3rd antennal segment) 0.97-1.12 (1.04). Siphunculi 142-165 (153) long. Number of hairs on anterior half of subgenital plate 2-4 (2.6) . . . **D. mordvilkoï** Shap.
- 4(3). Value of complex index $\frac{c+h}{a}$ 2.40-5.05 (3.26).
Value of complex index $\frac{e+f}{d}$ 1.16-1.61 (1.32). Siphunculi 121-163 (139-151) long. Number of hairs on anterior half of subgenital plate 2-8 (2.6-5.2) **D. deltoidei** Shap. & Stek.

Apterous viviparous females from herbaceous plants

- 1(4). 3-4 (3.9-4.0) marginal tubercles on abdominal tergites VI- VII. Apical segment of rostrum 163-195 long. Siphunculus in the middle 0.7-1.2 (0.9-1.0) times as wide as the largest tubercle and 1.0-2.0 (1.3-1.5) times as wide as the smallest tubercle on abdominal tergites I-V.
- 2(3). Processus terminalis 150-180 long, 0.86-1.04 times as long as apical segment of rostrum. On *Chnidium ajanense* **D. enidii** Shap. & Stek.
- 3(2). Processus terminalis 200-315 long, 1.09-1.61 times as long as apical segment of rostrum. On *Anthriscus aemula* . . . **D. ussuriensis** Shap. & Stek.
- 4(1). 0-2 tubercles on abdominal tergites VI-VII, if 0-3 (1.0-2.1) (*D. sibirica*), then apical segment of rostrum 132-160 long. Siphunculus in the middle 0.8-2.3 (1.0-2.1) times as wide as the largest tubercle and 1.3-4.9 (1.6-4.2) times as wide as the smallest tubercle on abdominal tergites I-V.
- 5(6). Apical segment of rostrum 132-160 (142-153) long, 1.8-2.6 (2.1-2.4) times as long as the longest hair on 3rd antennal segment. Width of the largest marginal tubercle on abdominal tergites I-V 36-62 (45-50), of the smallest one 20-42 (27-33). Siphunculus in the middle 0.8-1.4 (1.0-1.2) times as wide as the largest tubercle and 1.3-2.7 (1.6-2.1) times as wide as they smallest tubercle on abdominal tergites I-V. Siphunculi with 0-3 (0-2.0) hairs. 0-3 (1.0-2.1) marginal tubercles on abdominal tergites VI-VII. On *Aegopodium alpestre* **D. sibirica** Shap.
- 6(5). Apical segment of rostrum 148-170 (156-165) long, 2.7-4.0 (3.2-3.7) times as long as the longest hair on 3rd antennal segment. Width of the largest marginal tubercle on abdominal tergites I-V 27-41 (28-37), of the smallest one 12-28 (14-22). Siphunculus in the middle 1.2-2.3 (1.3-2.1) times as wide as the largest tubercle and 1.7-4.9 (2.2-4.2) times as wide as the smallest tubercle on abdominal tergites I-V. Siphunculi without hairs. 0-2 (0-1.6) marginal tubercles on abdominal tergites VI-VII.
- 7(8). Value of discriminant function $16.4i - j$ (where i – length of 2nd segment of hind tarsus, j – length of 3rd antennal segment) more than 1692.

- Apical segment of rostrum 1.15-1.33 times as long as 2nd segment of hind tarsus, 1.42-1.85 times as long as basal part of 6th antennal segment. On *Libanotis seseloides* and maybe on *Anthriscus aemula* **D. mordvilkoï** Shap.
- 8(7). Value of discriminant function $16.4i - j$ less than 1692. Apical segment of rostrum 1.33-1.59 times as long as 2nd segment of hind tarsus, 1.85-2.20 times as long as basal part of 6th antennal segment. On *Peucedanum deltoideum* **D. deltoidei** Shap. & Stek.

Dysaphis ussuriensis Shaposhnikov & Stekolshchikov, 1989

Apterous and alate viviparous females of this species were described by Shaposhnikov & Stekolshchikov (1989). Below, fundatrix, oviparous female and life cycle are described. Fundatrix is described in detail. For oviparous female its differences from fundatrix are pointed.

Fundatrix. Elliptic. Greyish green or dark greyish green; head, antennae, legs and siphunculi dark; with slight waxy pulverulence. Sclerotized, brown; head, band on pronotum always interrupted in the middle, sclerites on meso- and metanotum and abdominal tergites I-V, bands on tergites VI-VIII, marginal maculae on all abdominal tergites and peritremes; band on tergite VI sometimes divided into separate sclerites; sclerotized band on tergite VII and marginal maculae often fused. Surface of head and dorsal side of body reticulate, of two last tergites with rows of spinules sometimes partially fused, of ventral side of thorax smooth, of ventral side of abdomen with long rows of small spinules forming strongly stretched cells. Marginal tubercles always present on prothorax and on abdominal segments I-V, they are large, weakly protuberant, with diameter 2.0-5.3 times greater than height; marginal tubercles also present on mesonotum in 97% of specimens (2 tubercles in 91% of specimens), on metanotum in all specimens (2 in 91%), on segment VI in all specimens (2 in 67%) and on segment VII in 85% (2 in 45%). Spinal tubercles present on head and abdominal tergite VIII. Hairs on whole body filiform and only on abdominal tergites sometimes acuminate. Pronotum usually with 2 posterior pleural hairs, in 12% of specimens with 1 hair and in 12% without hairs. Chaetotaxy of first tarsal segments 3, 3, 2. Head with epicranial coronal suture. Frontal tubercles low, median tubercle sur-

passing or rarely not reaching the level of antennal tubercles. Antennae 6-segmented or (in 13% of specimens) 5-segmented at the expense of fusing of 3rd and 4th segments, without secondary rhinaria. Rostrum reaching meso- or metathorax. Arms of mesosternal furca separated. Peritremes on abdominal sternites I and II separated by a distance greater than diameter of peritreme. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges. Cauda escutcheon-like.

Body 2259 × 1533, antennae 1049: III 311 × 20, IV 146, V 135, VI 93 + 224; hind trochanter + femur 599, hind tibia 818; siphunculus 171 × 50; cauda 95 × 129 (at base) × 98 (before base).

Oviparous female. Elliptic. Greenish yellow or greenish brownish yellow. Band on abdominal tergite VI absent and only separated sclerites present; marginal maculae and sclerotized band on tergite VII never fused. Marginal tubercles present on mesonotum in 40% of specimens (always 1 tubercle), on metanotum in 50% (2 tubercles in 5%), on segment VI in 95% (2 in 80%) and on segment VII in all specimens (always 2). Pronotum with 2 posterior pleural hairs. Antennae 6-segmented. Rostrum reaching abdominal segments I or II. Peritremes on abdominal sternites I and II separated by a distance lesser than diameter of peritreme rarely contiguous or fused. Hind tibia with 3-37 (14.1) rounded pheromone plates.

Body 1953 × 1106, antennae 867: III 205 × 20, IV 115, V 121, VI 73 + 199; hind trochanter + femur 449, hind tibia 622; siphunculus 132 × 50; cauda 76 × 112 (at base) × 93 (before base).

Biology. *D. ussuriensis* was studied in the south of Primorsk Terr. (Russian Far East) near village Tigrovy. Larvae of fundatrices were found 11.V.1989 on the root collar and in the basal leaf-sheaths of *Anthriscus aemula*. Later (17.V), 6 adult fundatrices together with larvae of fundatrices and first instar larvae of second generation were found. Aphids were transferred to plants in pots covered with organic glass cylinders. They were reared in the laboratory till 8th generation. Alate viviparous females appeared in 4th generation. Aphids were transferred to conditions of short day (12 hours) and low temperature (13 °C) 7.VIII and oviparous females appeared 25.IX.

In East Siberia (near Irkutsk) fundatrices of *D. ussuriensis* were found on *Anthriscus aemula* 15.VI.1994. Adult apterous viviparous females appeared 17.VI.

Distribution. South of Primorsk Terr., East Siberia (near Irkutsk).

***Dysaphis cephalarioides* Shaposhnikov, 1956**

This species was described briefly by Shaposhnikov (1956). Below, all known morphs and the life cycle are described in detail.

Lectotype. Apterous viviparous female, No. 8769, specimen No. 8 (upper specimen to the right under the right coverslip), Odessa, Kuyal'nitskiy liman, 6.X.1928, *Cephalaria uralensis*.

Paralectotypes. 6 apterous viviparous females and 2 males on the same slide.

Apterous viviparous female. Elliptic. Dirty greenish brown, greenish brown, bluish grey or bluish green, with greenish grey head and thorax; siphunculi dark brown; antennae and legs light grey; without pulverulence or pulverulent only on ventral side. Sclerotized, brown: head, bands on pro- and mesonotum, sclerites on metanotum and on abdominal tergites I-V, bands on tergites VI-VIII, marginal maculae on all abdominal tergites and peritremes; band on mesonotum often interrupted in the middle; sclerites on metanotum and tergites I-V sometimes fused and forming on each tergite short band often interrupted in middle; sclerotized band on tergite VII and marginal maculae always fused. Surface of head wrinkled, of occiput, tergites of thorax and abdominal segments I-V, large, weakly protuberant, almost flat, with diameter 2.2-7.2 times greater than height; marginal tubercles also present on mesothorax in all specimens (always 2 tubercles), on metathorax in all (2 tubercles in 90% of specimens), on abdominal segment VI in 45% (2 tubercles in 10%) and on segment VII in all specimens (always 2). Spinal tubercles present on head, prothorax and abdominal tergites I, VII and VIII. Hairs on head, dorsal surface of body and on 1st-4th antennal segments weakly or clearly capitate, on 5th antennal segment and legs capitate and acuminate, on 6th antennal segment acuminate, on ventral surface of body acuminate and filiform, on cauda and anal plate filiform. Pronotum with 2 posterior pleural hairs.

Chaetotaxy of first tarsal segments 3,3,3. Head with epicranial coronal suture or its distinct traces. Frontal tubercles well-marked; median tubercle not reaching the level of antennal tubercles. Antennae 6-segmented, without secondary rhinaria. Rostrum reaching abdominal segment III or IV. Arms of mesosternal furca separated or connected, usually by thin and non-sclerotized stem, rarely the stem is sclerotized and very rarely it is wide. Peritremes on abdominal sternites I and II separated by a distance lesser than diameter of peritreme, sometimes contiguous and rarely fused. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges. Cauda from escutcheon-like to triangular escutcheon-like.

Lectotype. Body 1458 × 841, antennae 1167: III 320 × 17, IV 205, V 135, VI 90 + 280; hind trochanter + femur 484, hind tibia 772; siphunculus 154 × 43; cauda 70 × 104 (at base) × 79 (before base).

Alate viviparous female. Elongated-elliptic. Dirty or dark brownish green, hardly or distinctly pulverulent. Sclerotized, brown: head, thorax, sclerites on abdominal tergite I (sometimes grouped together in strongly interrupted band), bands on tergites II-VIII, marginal maculae on all abdominal tergites, and peritremes; band on tergite II often interrupted in middle and sometimes divided into separate large sclerites; bands on abdominal tergites III-VI completely or partially fused and forming entire patch. Surface of head and thorax wrinkled, of tergites I-VI faintly reticulate (sparse, large and strongly smoothed-out spinules are seen in contour of cells). Marginal tubercles present on abdominal segment VI in 30% of specimens (2 tubercles present in 5% of specimens). Spinal tubercles present on head, prothorax and abdominal tergite VIII. Head with more or less distinct traces of epicranial coronal suture. Secondary rhinaria not large, elliptical, with diameter 3.5-10.0 times greater than height. Rostrum reaching abdominal segment I or II. Peritremes on abdominal sternites I and II usually fused, rarely only contiguous or separated by a distance lesser than diameter of peritreme. Cauda triangular escutcheon-like.

Body 2126 × 968, antennae 1905: III 536 × 24, IV 300, V 219, VI 121 + 558; fore wing 3348; hind trochanter + femur 784, hind tibia 1337; siphunculus 269 × 48; cauda 135 × 135 (at base) × 109 (before base).

Oviparous female. Elongated-elliptic. Sclerotized, brown: head, bands on pro- and

mesonotum (often interrupted), bands on abdominal tergites VII-VIII, marginal maculae on all abdominal tergites, and peritremes. Marginal tubercles present on abdominal segment VI in 7 of 9 specimens (2 tubercles in 2 specimens). Spinal tubercles present on head, prothorax and abdominal tergite VIII. Capitulate hairs with feebly marked capitula, often they seem to be blunt. Frontal tubercles low, feebly marked. Rostrum reaching abdominal segment I or II. Arms of mesosternal furca separate. Peritremes on abdominal sternites I and II usually separated by a distance lesser than diameter of peritreme, sometimes contiguous or separated by a distance greater than diameter of peritreme. Hind tibia with 52-141 (52-121) rounded pheromone plates.

Body 1711 × 1014, antennae 1198: III 264 × 28, IV 233, V 146, VI 90 + 314; hind trochanter + femur 496, hind tibia 738; siphunculus 196 × 59; cauda 90 × 119 (at base) × 93 (before base).

Alate male. Elongated-elliptic. Bands on abdominal tergites III-VI not fused and not forming central patch. Spinal tubercles present on head, pronotum, abdominal tergites VI, VII and VIII. Hairs on head, dorsal surface of body, antennae and legs usually blunt or acuminate, rarely weakly capitulate.

Body 1406 × 622, antennae 1430: III 379 × 18, IV 241, V 182, VI 90 + 401; fore wing 1971; hind trochanter + femur 530, hind tibia 841; siphunculus 115 × 31; cauda 65 × 93 (at base) × 62 (before base).

Biology. *D. cephalarioides* was studied in Armenia. A colony of apterous viviparous females with larvae of all instars was found 12.VII.1987 near Kirovakan on the base of stem and on the root collar of *Cephalaria gigantea*. The colony was covered by soil and was attended by ants. Aphids were transferred to plant in pots covered with organic glass cylinders. 19.VIII aphids were transferred to conditions of short day (12 hours) and low temperature (12 °C) and from the middle of September oviparous females were observed in the colony.

Colonies of apterous and alate viviparous females were collected by G.Ch. Shaposhnikov 12 and 14.VI.1965 in Armenia near Lichk, also on *C. gigantea*.

Distribution. South Ukraine, Armenia.

Diagnosis. One more species of *Dysaphis* living on plants of the family Dipsacaceae is *D. cephalaria* Narzikulov. *D. cephalarioides* may be distinguished from *D. cephalaria* as follows:

- 1(2). Processus terminalis 2.0-2.9 times as long as basal part of 6th antennal segment in apterous viviparous females and 2.5-3.0 times in alate viviparous females. Number of spinal tubercles in apterous viviparous females 9-18, in alate viviparous females 15-17. Longest hair on 3rd antennal segment in apterous viviparous females 20-39 (21-35) long, 1.0-1.8 (1.3-1.8) times as long as articular diameter of the segment, in alate viviparous females 32-39 (36) and 1.3-1.8 (1.5) respectively. On *Scabiosa songorica* **D. cephalaria** Narz.
- 2(1). Processus terminalis 3.0-4.5 times as long as basal part of 6th antennal segment in apterous viviparous females and 3.8-5.6 times in alate viviparous females. Number of spinal tubercles in apterous viviparous females 2-7, in alate viviparous females 1-5. Longest hair on 3rd antennal segment in apterous viviparous females 13-36 (9-34) long, 0.4-1.4 (0.6-1.3) times as long as articular diameter of the segment, in alatae viviparous females 14-35 (15-25) and 0.5-1.4 (0.6-1.0) respectively. On *Cephalaria* spp. **D. cephalarioides** Shap.

***Dysaphis (Pomaphis) shaposhnikovi* sp. n.**
(Figs 1-16)

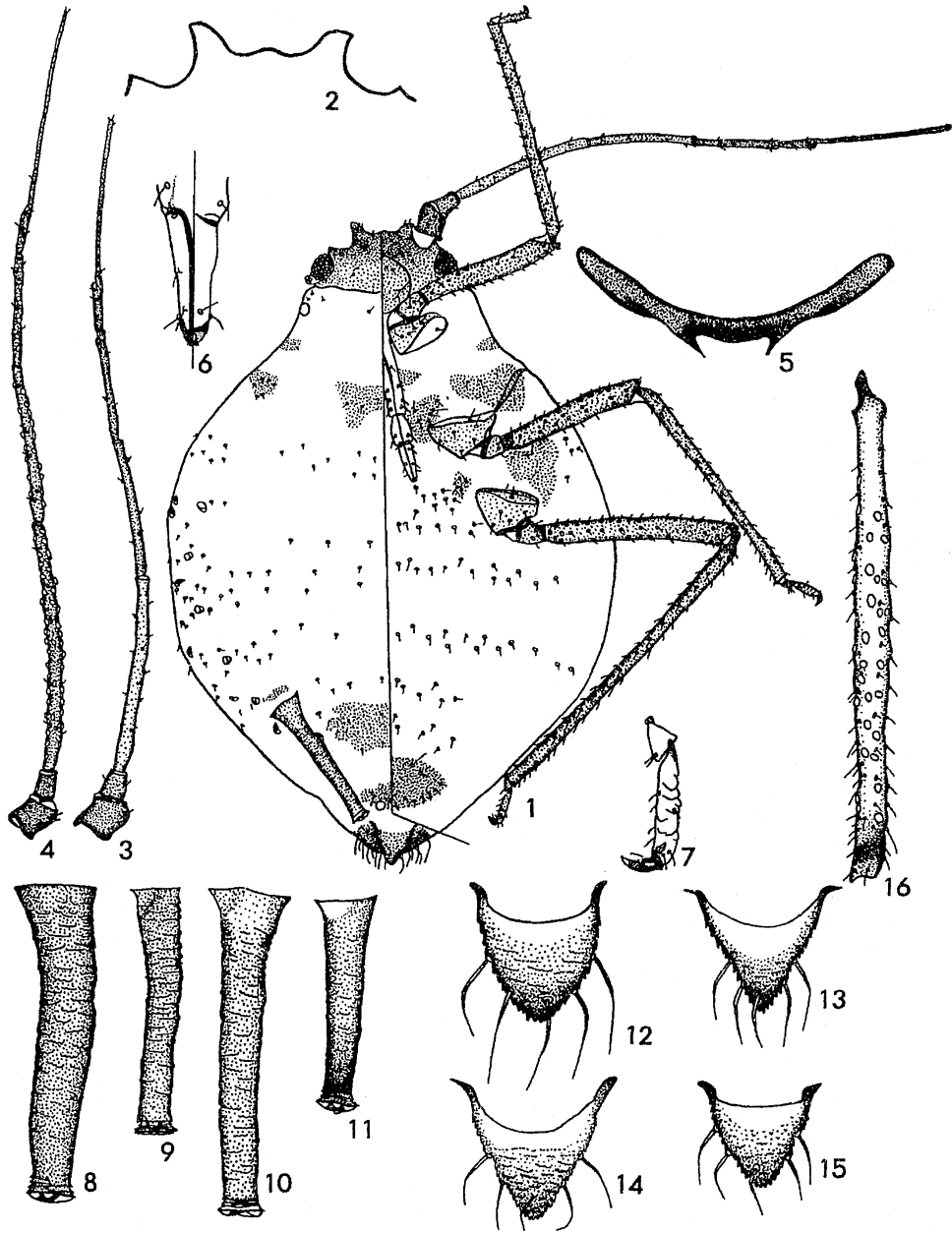
Holotype. Apterous viviparous female, No. 8665-2π, slide No. 4, specimen No. 2 (right specimen), Russia, south of the Primorsk Terr., village Tigrovy, 31.V-15.VI.1989, *Plantago* sp. (A.V. Stekolshchikov).

Paratypes. 5 fundatrices, No. 8665, 19-24.V.1989, *Plantago* sp.; 19 apterous viviparous females, No. 8665-2π and 8665-3π, *Plantago* sp., 31.V-15.VI.1989 and 17-19.VI.1989; 20 alate viviparous females, No. 8665-3π and 8665-4π, *Plantago* sp., 17-19.VI.1989 and 29-30.VI.1989, all specimens from the south of the Primorsk Terr., village Tigrovy; 20 oviparous females, No. 8665-♀, St. Petersburg, laboratory culture, *Plantago* sp., 5.IX-9.X.1989 (A.V. Stekolshchikov).

Fundatrix. Broad elliptic. Greenish grey, base of siphunculi and dorsal side of body at apex yellow brown, head, antennae (except 3rd segment), femora, siphunculi and cauda dark; venter slightly pulverulent. Surface of dorsal side of thorax and abdominal tergites I-VI with small wrinkles, in some areas faintly reticulate. Marginal tubercles on prothorax at an average 2, on abdominal segment I 0.6, on II 2, on III 1.9, on IV 2 and on V 1.9, marginal tubercles also present on mesothorax in 4 of 5 specimens (2 tubercles in 2 specimens), on metathorax in 4 specimens (2 tubercles in 3 specimens). Posterior pleural hairs on pronotum absent in 3 specimens and 1 hair present in 2 specimens. Arms of mesosternal furca connected by thin stem or separate. Peritremes on abdominal sternites I and II separated by a distance greater than diameter of peritreme.

Body 2195 × 1504, antennae 1265: III 412 × 27, IV 180, V 180, VI 107 + 238; hind trochanter + femur 603, hind tibia 864; siphunculus 384 × 56; cauda 121 × 140 (at base) × 115 (before base).

Apterous viviparous female. Elliptic. Greenish yellow brown, head and thorax greenish grey, at base of siphunculi and between them brown, femora and tibiae light brown, 4th-6th antennal segments, siphunculi, apices of tibiae and tarsi dark brown, venter slightly pulverulent. Weakly sclerotized, light brown: head (especially frons), sclerites on pro- and mesonotum (sometimes grouped together in strongly interrupted bands), short bands on tergites VII-VIII, more or less distinct marginal maculae on all abdominal tergites and peritremes. Surface of head with sparse spinules, of occiput and pronotum with spinules partially fused and forming short rows; of meso- and metanotum and abdominal tergites I-VI reticulate (on tergite VI contour of some cells consisting of not fused spinules), of two last tergites with rows of partially fused spinules forming scales on tergite VIII; of ventral side of prothorax wrinkled, of meso- and metathorax with sparse cells formed by small spinules (weakly distinct on metathorax); of ventral side of abdomen with long rows of small spinules sometimes forming strongly stretched cells. Marginal tubercles more or less regularly present on prothorax (at an average 1.95) and on abdominal segments I-V (at an average 1.6 on segment I, 1.5 on II, 1.55 on III, 1.7 on IV and 0.6 on V), they are strongly protuberant, nipple-shaped, with diameter 1.3-2.3 times greater than height in large tubercles and 0.9-2.0 times greater than height in small tubercles. Spinal tubercles present on head and abdominal tergites VII and VIII. Hairs on head, dorsal surface of body, posterior marginal series of subgenital plate, 1st-4th antennal segments and femora blunt or weakly capitate, on ventral surface of body and tibiae blunt, weakly capitate or acuminate, on anterior half of subgenital plate, 5th-6th antennal segments, rostrum and tarsi acuminate, on cauda and anal plate filiform. Pronotum normally without posterior pleural hairs, in 5% of specimens with 1 hair. Chaetotaxy of first tarsal segments 3,3,2. Head with epicranial coronal suture or with its distinct traces. Frontal tubercles high, frontal sinus well-marked, deep; anterior margins of antennal tubercles divergent, median tubercle reaching not more than half



Figs 1-16. *Dysaphis shaposhnikovi* sp. n. 1, apterous viviparous female; 2, front of apterous viviparous female; 3, antennae of apterous viviparous female; 4, antennae of alate viviparous female; 5, mesosternal furca of apterous viviparous female; 6, apical segment of rostrum of apterous viviparous female; 7, hind tarsus of apterous viviparous female; 8-11, siphunculi (8, of fundatrix; 9, of apterous viviparous female; 10, of alate viviparous female; 11, of oviparous female); 12-15, cauda (12, of fundatrix; 13, of apterous viviparous female; 14, of alate viviparous female; 15, of oviparous female); 16, hind tibia of oviparous female.

of height of antennal tubercles. Antennae 6-segmented, without secondary rhinaria. Rostrum reaching mesothorax or abdominal segment I. Arms of mesosternal furca connected by wide, sclerotized stem. Peritremes on abdominal sternites I and II sometimes widely spaced or, more often, separated by a distance lesser than diameter of peritreme, and rarely contiguous. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges, slightly S-shaped. Cauda triangular escutcheon-like.

Holotype. Body 2201 × 1590, antennae 1921: III 505 × 29, IV 365, V 283, VI 123 + 457; hind trochanter + femur 772, hind tibia 1164; siphunculus 460 × 56; cauda 146 × 168 (at base) × 135 (before base).

Alate viviparous female. Egg-shaped. Brownish green; ventral surface of abdomen slightly pulverulent. Sclerotized, brown: head, thorax, sclerites on abdominal tergite I (sometimes grouped together in strongly interrupted band), bands on tergites II-VIII, marginal maculae on all abdominal tergites, and peritremes; band on abdominal tergite II often interrupted in the middle and sometimes divided into separate sclerites; bands on abdominal tergites III-V united into a central patch; band on tergite VI fused anterolaterally with the posterior margin of the central patch; sclerotized band and marginal maculae on tergites VI-VII always fused. Surface of head and thorax wrinkled, of abdominal tergites I-VI smooth with sparse, large, strongly smoothed-out spinules sometimes arranged along contour of cells. There are in average 0.25 marginal tubercles on abdominal segment V. Pronotum without posterior pleural hairs. Head with very weak traces of epicranial coronal suture. Secondary rhinaria not large, elliptical, with diameter 1.7-4.0 times greater than height. Peritremes on abdominal sternites I and II separated by a distance lesser than diameter of peritreme, contiguous or fused.

Body 2051 × 1049, antennae 2264: III 631 × 31, IV 460, V 303, VI 143 + 544; fore wing 2881; hind trochanter + femur 726, hind tibia 1256; siphunculus 334 × 45; cauda 132 × 146 (at base) × 126 (before base).

Oviparous female. Elliptic. Yellow, slightly brownish. Sclerotized, brown: frons, sometimes short band on abdominal tergites VIII, 5th and 6th antennal segments, small marginal maculae on all abdominal tergites, and peritremes. Surface of dorsal side of thorax and abdominal tergites I-V wrinkled, wrinkles forming reticulate structure. Marginal

tubercles on prothorax at an average 2.0, on abdominal segment I 1.85, on II 1.6, on III 1.95, on IV 1.7 and on V 0.25; they are very small, nipple-shaped. Spinal tubercles present on abdominal tergites VII and VIII. Hairs on abdominal tergite VIII filiform. Pronotum without posterior pleural hairs. Arms of mesosternal furca connected by thin, weakly sclerotized stem. Peritremes on abdominal sternites I and II usually separated by a distance lesser than diameter of peritreme, contiguous or rarely fused. Hind tibia with 26-64 (51.1) rounded pheromone plates.

Body 1729 × 1129, antennae 1257: III 306 × 22, IV 199, V 188, VI 95 + 311; hind trochanter + femur 497, hind tibia 691; siphunculus 289 × 45; cauda 109 × 109 (at base) × 93 (before base).

Biology. *Dysaphis shaposhnikovi* was studied in the south of Primorsk Terr. (Russian Far East) near village Tigrovy. Five adult fundatrices together with first instar larvae of second generation were found 19.V in axil of leaves and on upper side in the leaf-bases on 3 plants of *Plantago* sp. Aphids were transferred to plants in pots, covered with organic glass cylinders and reared in the laboratory till 6th generation. From the third generation on, alate viviparous females appeared in the colony regularly. Aphids were transferred 1.VIII to conditions of short day (12 hours) and low temperature (13 °C) and from 5.IX onwards oviparous females were observed in the colony, but not males.

Distribution. South of Primorsk Terr.

Diagnosis. *Dysaphis shaposhnikovi* belongs to the subgenus *Pomaphis*. Other five species of this subgenus also live on *Plantago*, but four of them, *D. aucupariae* (Buckton), *D. pavlovskyana* Narzikulov, *D. plantaginis* (Pašek) and *D. plantaginea* (Passerini), are heteroecious and migrate to *Plantago* from *Sorbus* (the first three species) and from *Malus*. Only *D. maritima* Hille Ris Lambers, with the subspecies – *D. m. maritima* and *D. m. glabra* Hille Ris Lambers, is autoecious on *Plantago*. *D. shaposhnikovi* may be distinguished from *D. maritima* as follows:

- 1(2). Processus terminalis in apterous viviparous females 260-320 long, 2.1-3.2 (2.2-2.9) as long as basal part of 6th antennal segment, in alate viviparous females 330-340 and 2.0-2.3 and in oviparous females 270-300 (283) and 1.9-2.5 respectively. Longest hair on abdominal tergite VIII in apterous viviparous females 17-20 long.

With 3-13 secondary rhinaria 4th antennal segment of alate *D. maritima* H.R.L.
 2(1). Processus terminalis in apterous viviparous females 342-482 long, 3.2-4.0 (3.6) as long as basal part of 6th antennal segment, in alate viviparous females 381-592 and 2.8-4.6 and in oviparous females 286-331 (311) and 3.2-3.6 respectively. Longest hair on abdominal tergite VIII in apterous viviparous females 20-42 long. With 21-34 secondary rhinaria 4th antennal segment of alate *D. shaposhnikovi* sp. n.

D. shaposhnikovi may be distinguished from heteroecious species living on *Plantago* by the following characteristics of apterous viviparous females: length of processus terminalis 342-482 and siphunculi not swollen in *D. shaposhnikovi*, and length of processus terminalis 164-230 and siphunculi swollen in *D. pavlovskiyana*; processus terminalis 3.2-4.0 (3.6) times as long as basal part of 6th antennal segment in *D. shaposhnikovi* and 4.0-4.7 (4.3) in *D. plantaginea*, 2.5-3.3 in *D. aucupariae* and 2.0-2.7 in *D. pavlovskiyana*; length of apical segment of rostrum 123-151 in *D. shaposhnikovi* and 110-120 in *D. plantaginea*; siphunculi 6.1-9.9 times as long as their width in the middle in *D. shaposhnikovi* and 10.0-12.0 in *D. plantaginis* (after Pašek, 1955; Shaposhnikov, 1964 and materials from collection of Zoological Institute, St. Petersburg).

Dysaphis (*Pomaphis*) *anisoidis nairi* subsp. n.

Holotype. Apterous viviparous female, No. 8526-26.VI, specimen No. 3 (right specimen in lower row), Armenia, Dilizhan, 26.VI.1987, *Pimpinella tripartita* (A. V. Stekolshchikov).

Paratypes. 2 fundatrices, No. 8526, 31.V.1987, *Pimpinella tripartita*; 3 alate viviparous females, No. 8526, 8526-1 and 8526-18.VI, *Pimpinella tripartita*, 31.V, 8.VI and 18.VI.1987; 3 apterous viviparous females, No. 8526-26.VI, *Pimpinella tripartita*, 26.VI.1987; 17 apterous viviparous females, No. 8568, *Pimpinella rhodanta*, 10.VII.1987; 2 apterous viviparous females, No. 8564, *Pimpinella rhodanta*, 10.VII.1987, all specimens from Armenia, Dilizhan; 1 apterous viviparous female, No. 8577, Armenia, Sevanskiy pass, *Pimpinella rhodanta*, 8.VIII.1987; 20 oviparous females, No. 8526-18.IX and 8526-13.X, *Pimpinella tripartita*, 18.IX and 13.X.1987; 11 males, No. 8526-11.IX and 8526-18.IX, *Pimpinella tripartita*, 11.IX and 18.IX.1987, all specimens from St. Petersburg, laboratory culture (A. V. Stekolshchikov).

Fundatrix. Broad elliptic. Dark green, almost black. Sclerotized bands usually not fused, on metanotum and abdominal tergite I-V sometimes interrupted in the middle. Reticulation of surface distinctly weaker than in apterae. Marginal tubercles present on all

thoracic segments and on abdominal segments I-VII. Spinal tubercles present on head, pronotum and abdominal tergites VI-VIII. Frontal tubercles not high. Peritremes on abdominal sternites I and II separated by a distance greater or lesser than diameter of peritreme.

Body 1706 × 1095, antennae 1135: III 331 × 20, IV 177, V 154, VI 105 + 224; hind trochanter + femur 475, hind tibia 680; siphunculus 188 × 48; cauda 95 × 115 (at base) × 95 (before base).

Apterous viviparous female. Elongated-elliptic. Dark brownish green or dark green, almost black; without pulverulence. Sclerotized, brown: head, bands and marginal maculae on all tergites of body and peritremes; bands often (especially on abdominal tergites I-V) fused and with marginal maculae forming entire patch, separated only slightly between head and pronotum, between tergites of thorax, between mesonotum and abdominal tergite I, between abdominal tergites VI and VII, VII and VIII and partially (by incomplete fusing) between V and VI; with the rare exception, sclerotized band on tergite VII and marginal maculae fused. Surface of head smooth, of occiput with sparse spinules on outlines of cells, of pronotum faintly reticulate, of dorsal side of thorax and abdominal tergites I-VI reticulate (reticulation stronger along the median line), of two last tergites with rows of partially fused spinules; of ventral side of thorax reticulate (contour of cells formed by sparse spinules); on ventral side of abdomen with long rows of small spinules forming strongly stretched cells. Marginal tubercles always present on prothorax and abdominal segments I-V, protuberant (small tubercles strongly protuberant up to nipple-shaped), with diameter 1.8-4.0 times greater than height in large tubercles and 1.0-2.7 times in small ones; marginal tubercles also present on metathorax in 13% of specimens (always 1 tubercle), on abdominal segment VI in 34% (2 tubercles in 13%) and on segment VII in 67% (2 in 13%). Spinal tubercles present on head, pronotum, tergites VII and VIII. Hairs on occiput and dorsal surface of body widened and split at apex, becoming almost fungi-shaped; hairs on frons and 1st-4th antennal segments capitate, on legs acuminate and rarely capitate, on abdominal tergite VIII and 5th-6th antennal segments acuminate, on ventral surface of body, cauda and anal plate filiform. Pronotum without posterior pleural hairs. Chaetotaxy

of first tarsal segments 3,3,2. Head with epicranial coronal suture or more often with its more or less distinct traces. Frontal tubercles well-marked; median tubercle sometimes almost rectangular; surpassing or rarely not reaching the level of antennal tubercles. Antennae 6-segmented, without secondary rhinaria. Rostrum reaching mesothorax or abdominal segment I. Arms of mesosternal furca connected by wide, sclerotized stem. Peritremes on abdominal sternites I and II usually fused, rarely only contiguous or separated by a distance lesser than diameter of peritreme. Siphunculi cylindrical, faintly narrowed to apex, with distinct flanges. Cauda triangular escutcheon-like.

Holotype. Body 1129 × 715, antennae 834: III 194 × 14, IV 135, V 118, VI 77 + 202; hind trochanter + femur 378, hind tibia 530; siphunculus 128 × 36; cauda 81 × 109 (at base) × 84 (before base).

Alate viviparous female. Elongated egg-shaped. Dark green, almost black. Sclerotized, brown: head, thorax, small sclerites on abdominal tergite I, sclerites on tergite II (sometimes grouped together in strongly interrupted band), bands on tergites III-VIII, marginal maculae on all abdominal tergites, and peritremes; bands on abdominal tergites III-V united into a central patch, band on tergite VI more or less fused with central patch; sclerotized bands on tergites VI-VII and marginal maculae always fused. Surface of head and thorax wrinkled, of abdominal tergites I-VI nearly smooth, with rare rows of strongly smoothed-out spinules along contour of cells. One marginal tubercle present on abdominal segment VI in two of 6 specimens and marginal tubercles present on segment VII in 3 specimens (2 tubercles in 1 specimen). Hairs on dorsal surface of thorax and abdomen considerably less widened at apex than in apterae. Head with distinct traces of epicranial coronal suture. Secondary rhinaria elliptical, with diameter 2.5-7.0 times greater than height. Peritremes on abdominal sternites I and II fused.

Body 1596 × 617, antennae 1425: III 395 × 20, IV 230, V 202, VI 123 + 334; fore wing 2236; hind trochanter + femur 507, hind tibia 853; siphunculus 143 × 39; cauda 87 × 107 (at base) × 88 (before base).

Oviparous female. Elliptic. Bands on abdominal tergites more or less fused, but never forming entire patch; bands on tergites IV-VI may be interrupted and divided into separate sclerites. Marginal tubercles present on metathorax in 10% of specimens (always

1 tubercle), on abdominal segment VI in 45% (always 1) and on segment VII in 67% (2 in 25%). Rostrum sometimes longer than in apterous viviparous female, reaching abdominal segment II. Hind tibia with 67-103 (83.1) rounded pheromone plates.

Body 1262 × 818, antennae 1108: III 272 × 17, IV 182, V 140, VI 90 + 289; hind trochanter + femur 426, hind tibia 599; siphunculus 151 × 36; cauda 84 × 104 (at base) × 79 (before base).

Alate male. Elongated egg-shaped. Bands on abdominal tergites III-VI sometimes more or less fused, but never forming central patch. One marginal tubercle present on abdominal segment VI in 9% of specimens and on segment VII in 9%. Hairs on head, dorsal surface of body, antennae and legs acuminate, on abdominal tergites VII and VIII (sometimes also on tergite VI), ventral surface of body, cauda and anal plate filiform. Posterior pleural hairs on pronotum present in 36% of specimens, but with 2 hairs only in 9% of specimens. Frontal tubercles is smoothed-out.

Body 1152 × 496, antennae 1492: III 463 × 18, IV 241, V 202, VI 107 + 345; fore wing 2000; hind trochanter + femur 540, hind tibia 830; siphunculus 140 × 34; cauda 65 × 101 (at base) × 65 (before base).

Biology. *Dysaphis anisoidis nairi* was studied in Armenia near Dilizhan. 2 adult fundatrices, several apterae, nymphs and larvae of second generation were found 31.V.1987 on the root collar and in the basal leaf-sheaths of *Pimpinella tripartita*. They were covered by soil and attended by ants. Aphids were transferred to plant in laboratory and reared till end of life cycle. Alate viviparous females appeared in the second generation (2.VI). In the field, numerous colonies were found also on *Pimpinella rhodantha*. Aphids were transferred 19.VIII to conditions of short day (12 hours) and low temperature (12 °C) and from the beginning of September oviparous females and from the middle of September also males were discovered in the colony.

Distribution. Armenia.

Diagnosis. *D. anisoidis nairi* subsp. n. may be distinguished from *D. anisoidis anisoidis* Barbagallo & Stroyan by the following characters of apterous viviparous females:

- 1(2). Longest hair on 3rd antennal segment 8-15 long, 0.35-0.70 times as long as the articular diameter of the segment, on abdominal tergite III 11-27 long, on VIII 37-48 long. Apical segment of rostrum 90-109 long
 *D. anisoidis anisoidis* Barb. & Stroy.

2(1). Longest hair on 3rd antennal segment 16-36 long, 1.0-2.0 times as long as the articular diameter of the segment, on abdominal tergite III 35-62 long, on VIII 56-81 long. Apical segment of rostrum 112-132 long. . . *D. anisoidis nairi* subsp. n.

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