Aphids of *Acyrthosiphon* Mordvilko, 1914 genus (Homoptera, Aphididae, Macrosiphini) from Kazakhstan

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We have described 2 new species and 2 new subspecies of the *Acyrthosiphon* Mordv. genus which have been collected in the previous years in the mountainous regions of Kazakhstan. Hitherto known *A. ilka* Mordvilko, 1914 and *A. fragariaevescae* Nevsky, 1951 are redescribed. 25 species and subspecies together with new taxa are found in Kazakhstan (Nevsky, 1929; 1951; Kadyrbekov, 1991; 1993; 2002a; 2002b; 2003; Juchnevitsh, 1968; materials of the collection of the Institute of Zoology of MES RK). Key for definition of 34 species and subspecies of *Acyrthosiphon* from Kazakhstan and adjacent regions is compiled.

The following abbreviations are used in the text: S.- southern, N.- northern, W.- western E. – eastern, C. – central, gor. - Mass range, sl. – slopes, a. s. l.- the height above the sea level, s. t. – small town, t. – town, res. – nature reserve, r. – river, ap. v. f. - apterous viviparous female, al. v. f.- alate viviparous female, b. - body, ant. - antennae, siph. - siphunculi, c. - cauda, u. r. s.- ultimate rostral segment, 2 s. h. t.-second segment of hind tarsus.

All dimensions are given in millimeters.

Holotypes and paratypes of described taxa are deposited in the collection of the Institute of Zoology (Almaty, Kazakhstan). Part of paratypes are kept in the Zoological Institute of RAN (Saint-Petersburg, Russia).

Acyrthosiphon galijae Kadyrbekov, sp. n.

Apterous viviparous female (by 8 specimens). Body is elliptic, 3.30-3.98. Cuticle is membranous or slightly imbricate. Frons is deeply grooved, 0.24-0.30 of the distance between bases of antennae. Antennal tubercles are high diverged. Median frontal tubercle is faintly visible (fig. 1a). Frontal hairs (0.017-0.028) are short, blunted, 0.4-0.7 of basal diameter of the 3rd antennal segment. Antennae are six-segmented, 0.8-1.0 of body length. The first antennal segment is with 8-10 hairs. The third segment is 1.22-1.40 of 4th, 0.68-0.90 of the 6th ones. *Processus terminalis* is 4.5-5.5 of the base of the 6th segment and 0.94-1.04 of the 3rd one, 0.88-0.98 of siphunculi. The base of the 6th antennal segment is 0.70-0.95 of the 2nd segment of hind tarsus. The secondary rhinaria in number 1-4 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are short, blunted (0.011-0.017), 0.3-0.4 of its basal diameter. Rostrum doesn't reach or reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.60-0.73 of the 2nd segment of hind tarsus with (6)8 accessory hairs (fig. 1b). Penultimate segment with 12-14 hairs. Cylindrical siphunculi with distinct flanges are 0.21-0.29 of the body length, (1.75) 1.8-2.1 of the cauda, 6.6-8.5 of the ultimate rostral segment (fig. 1c). Their diameter in the middle is 0.8-1.0 of diameter of the hind tibia in the middle. Cauda is knife-shaped, with (10)11-13 long hairs (fig. 1d). Dorsal hairs are blunted, on the 1-5th tergites (0.011-0.022), 0.3-0.6 of the basal diameter of the 3rd antennal segment. There are 5-7 long hairs on the 8th tergite (0.040-0.067), 1.0-1.7 of the basal diameter of the 3rd antennal segment. Ventral hairs are long, pointed (0.040-0.050), 1.0-1.3 of the basal diameter of the 3rd antennal segment. Marginal tubercles are absent. Genital plate is broad oval, with 2-3 hairs on disk and (8)10-14 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3(2) hairs.

Color in life: body is bright-green, eyes are reddish. Color on slide: body is pale, only tarsi are brownish.

Dimension of holotype. B. 3.98; ant. 3.36-3.38: III 0.85-0.86, IV 0.65-0.66, V 0.55-0.57, VI 1.05 (0.17+0.88); siph. 0.92-0.96; c. 0.47; u. r. s. 0.12; 2 s. h. t. 0.20.

Alate viviparous female (by 2 specimens). Body is 2.83-3.35. Antennae are 1.08-1.16 of body length. Processus terminalis is 1.04-1.21 of the 3rd antennal segment, 1.3-1.4 of siphunculi. Base of the 6th antennal segment is 1.10-1.25 of the 2nd segment. Third antennal segment with 21-37 secondary rhinaria. Siphunculi are 0.80-0.88 of the 3rd antennal segment, 1.7-1.9 of cauda, 5.8-6.7 of the ultimate rostral segment. Cauda is finger-shaped (fig. 1f). Other characters are as in apterous viviparous female.

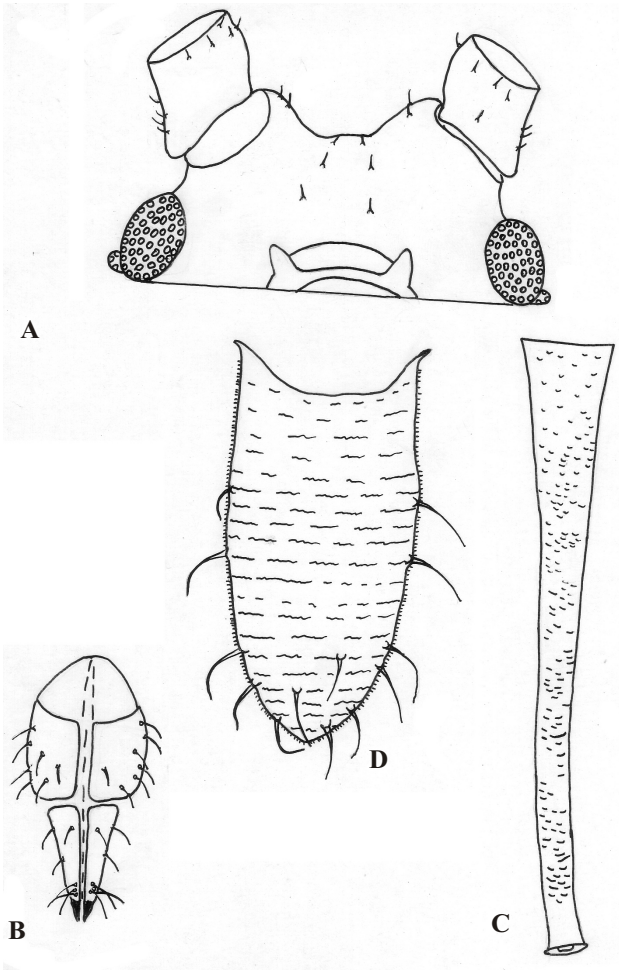

Fig. 1. Apterous viviparous female of *Acyrthosiphon galijae* sp. n.: A – frons, B – ultimate and penultimate rostral segments, C – siphunculus, D – cauda.

Color on slide: 1st, apex of the 3rd, 4-5th, base of the 6th antennal segments are bright brown, thorax, apices of tibiae, tarsi are brownish. Body is pale.

Dimension of allotype. B. 3.35; ant. 3.61-3.70: III 0.91-0.95, IV 0.72-0.73, V 0.59, VI 1.16-1.21 (0.20-0.22+0.96-0.99); siph. 0.74; c. 0.44; u. r. s. 0.11; 2 s. h. t. 0.18.

Host plant. *Sanguisorba officinalis* L. (Rosaceae).

Bionomy. An aphid lives in stems and leaves, not visited by ants.

Material examined. Holotype: ap.v.f., slide N 2070, SE. Kazakhstan, S. sl. of Dzhungar Alatau, Kojanditau gor., 12 km to NW. from Konirolen s.t., H-1800 m.a.s.l., 25.06.1991, R. Kadyrbekov. Paratypes – 2 al.v.f., 7 ap.v.f., same place and date.

Taxonomical notes. New species relates to *A. ignotum* Mordv. in the keys of V.F. Eastop (1971) and O.E. Heie (1994). *A. galijae* sp. n. differs from this species by the numerous accessory hairs ((6)8 versus 4-6), form of cauda and quantity of caudal hairs ([10]11-13 in comparison with 7-10), long hairs on 8th tergite (0.040-0.067 against 0.023-0.030), ratio of the diameter of siphunculi in the middle to diameter of the hind tibiae in the middle (0.8-1.0 versus 1.2-1.5). It relates to *A. sanguisorbae* Sec. (Seccombe, 1987) too. It distinguishes from last species by the coloration of apices antennae and siphunculi, less quantity of secondary rhinaria of apterous (1-4 versus 4-6), longer frontal hairs (0.017-0.028 in comparison with 0.005-0.010), quantity of caudal and accessory hairs ([10] 11-13; (6)8 against 8-10; 5-7), ratio of siphunculi to body (0.21-0.29 versus 0.28-0.37).

Etymology. New species is named in honor of my mother Galija Kadyrbekova, who assists me in the work.

Acyrthosiphon heptapotamicum Kadyrbekov, sp. n.

Apterous viviparous female (by 10 specimens). Body is elliptic, 3.20-3.91 (fig. 2a). Cuticle is membranous or slightly imbricate. Frons is deeply grooved, 0.27-0.37 of the distance between bases of antennae. Median frontal tubercle is faintly visible. Antennal tubercles are high diverged. Frontal hairs (0.045-0.051) are pointed, 0.9-1.0 of basal diameter of 3rd antennal segment. Antennae are six-segmented, 1.25-1.56 of body length. First antennal segment with 6-12 hairs. Third segment is 1.0-1.12 of 4th. *Processus terminalis* is 3.8-4.8 of the base of 6th segment and (1.07)1.15-1.35(1.42) of the 3rd one. Base of the 6th antennal segment is 1.48-1.70(1.80) of the 2nd segment of hind tarsus. Secondary rhinaria in number (2)3-5 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are short, blunted (0.022-0.028), 0.45-0.55 of its basal diameter. Rostrum no reaches or reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.57-0.65 of the 2nd segment of hind tarsus with 6 accessory hairs (fig. 2b). Cylindrical siphunculi with distinct flanges are 0.32-0.42

of the body length, 2.8-3.2 of the cauda. Cauda is carrot-shaped, with 15-20 long hairs (fig. 2c). Dorsal hairs are blunted, on the 1-5th tergites (0.028-0.034), 0.55-0.67 of the basal diameter of 3rd antennal segment. There are 8-10 long hairs on the 8th tergite. Marginal tubercles are absent. Genital plate is broad oval, with 4-6 hairs on disk and 12-14 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3 hairs.

Color in life: body is bright-green, eyes are reddish. Color on slide: body is pale, only apices of the 3rdand 4th, 5th, 6th antennal segments, tarsi, apices of siphunculi are brownish.

Dimension of holotype. B. 3.67; ant. 4.63-4.65: III 0.92-0.91, IV 0.90, V 0.91-0.94, VI 1.58-1.60 (0.27-0.30+ 1.30-1.31); siph. 1.25-1.26; c. 0.39; u. r. s. 0.11; 2 s. h. t. 0.18.

Color on slide: 1st, apex of the 3rd, 4-5th, base of the 6th antennal segments are bright brown, thorax, apices of tibiae, tarsi are brownish. Body is pale.

Host plant. *Clematis songarica* Bunge (Ranunculaceae).

Bionomy. An aphid lives in stems and leafs, not visited by ants.

Material examined. Holotype: ap.v.f., slide N 2677, SE. Kazakhstan, Charyn r., left bank, Sartogai, gallery forests, 6.05.1999, R. Kadyrbekov. Paratypes – 2 al.v.f., 7 ap.v.f., same place and data.

Taxonomical notes. New species relates to *A. pisum* species group. *A. heptapotamicum* sp. n. differs from *A. pisum* (Harris) and *A. fragariaevescae* Nevs. by the ratios of siphunculi to cauda length (2.8-3.2 versus 1.2-2.0), to the ultimate rostral segment (10.4-12.7 against 5.2-9.3), more numerous hairs of the 8th tergite (10[8] in comparison 5-8[10]) and other host plant.

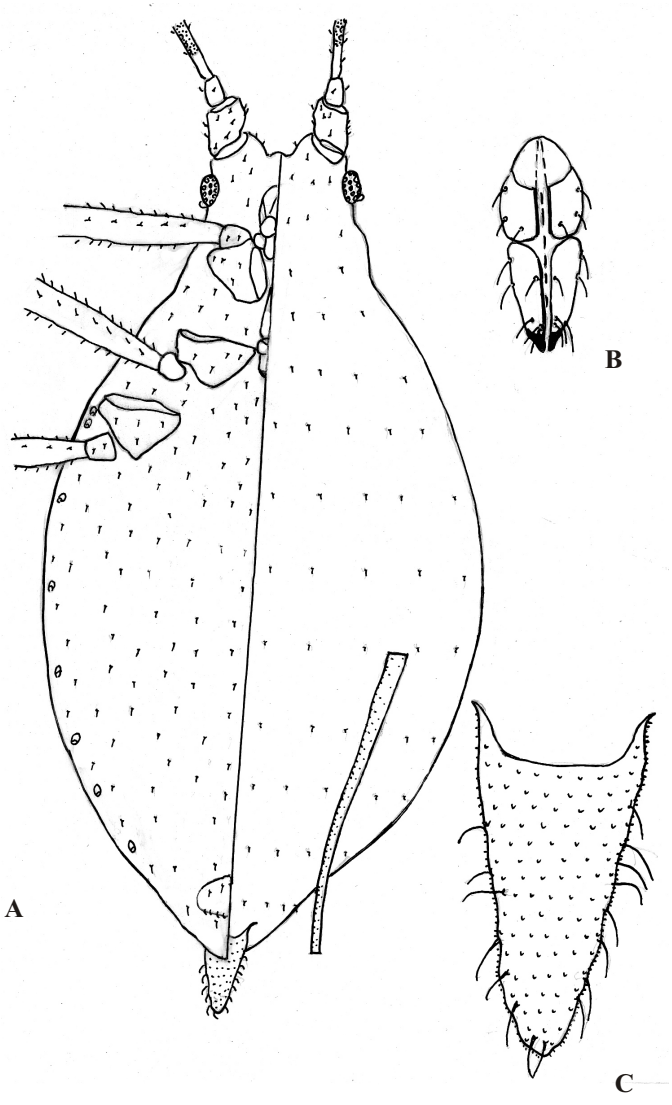

Fig. 2. Apterous viviparous female of *Acyrthosiphon heptapotamicum* sp. n.: A – habitus, B - ultimate and penultimate rostral segments, C – cauda.

Etymology. New species is named by the local denomination of the Southern-Eastern Kazakhstan territory.

Acyrthosiphon bidentis montanum Kadyrbekov, ssp. n.

Apterous viviparous female (by 21 specimens). Body is elliptic, 1.95-2.59. Cuticle is membranous or slightly imbricate. Frons is slightly grooved, 0.12-0.20 of the distance between bases of antennae. Antennal tubercles are gently diverged. Median frontal tubercle is faintly visible. Frontal hairs (0.011-0.020) are short, slightly capitate, 0.4-0.7 of basal diameter of 3rd antennal segment. Antennae are

six-segmented, 0.9-1.1 of body length. First antennal segment with 5-8 hairs. Third segment is 1.1-1.4 of 4th, 0.6-0.8 of the 6th ones. *Processus terminalis* is 3.3-5.1 of the base of 6th segment, (0.9)1.0-1.5 of the 3rd one, 0.95-1.30 of siphunculi. The base of the 6th antennal segment is 0.95-1.20 of the 2nd segment of hind tarsus. Secondary rhinaria in number 1-4 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are short, slightly capitates (0.006-0.010), 0.2-0.3 of its basal diameter. Rostrum reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.75-0.90 of the 2nd segment of hind tarsus with 5-8 accessory hairs. Cylindrical siphunculi with distinct flanges are 0.22-0.25(0.28) of the body length, 1.7-2.2 (2.4) of the cauda, 3.9-5.4 of the ultimate rostral segment. Their diameter in the middle is 1.0-1.1 of diameter of the hind tibia in the middle. Cauda is finger-shaped with distinct constriction, sometimes without constriction, and with 7-10 long hairs. Dorsal hairs are slightly capitate, on the 1-5th tergites (0.006-0.011), 0.2-0.4 of the basal diameter of 3rd antennal segment. There are 4-7 long hairs on the 8th tergite (0.022-0.030), 0.7-1.0 of the basal diameter of the 3rd antennal segment. Small marginal tubercles are sometimes placed on the 2-4 tergites. Genital plate is broad oval, with 2 hairs on disk and 7-11 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3 hairs.

Colour in life: body is bright-green, eyes are reddish. Colour on the slides: in norm - 6th, apices 3-5th antennal segments, tarsi, ends of siphunculi are darkish. By few specimens – antennae (apart of the base of the 3rd antennal segment), ultimate rostral segment, apices of the femora and tibiae, distal part of siphunculi, genital plate are darkish. Tarsi are blackish.

Dimension of holotype. B. 2.43; ant. 2.19-2.21: III 0.55, IV 0.39, V 0.34-0.35, VI 0.70-0.73 (0.14+0.56-0.59); siph. 0.56-0.57; c. 0.27; u. r. s. 0.12; 2 s. h. t. 0.135.

Alate viviparous female (by 13 specimens). Body is 2.07-2.52. Frontal hairs are blunted (0.017-0.028), 0.5-0.7 of the basal diameter of the 3rd antennal segment. Frons is slightly grooved, 0.11-0.15 of the distance between apices of antennal tubercles. Antennae are 1.0-1.2 of body length. The third antennal segment is 1.2-1.6 of the 4th, 0.75-0.85 of the 6th ones. *Processus terminalis* is 3.0-4.5 of the base of the 6th antennal segment, 0.95-1.20 of the 3rd antennal segment, 1.1-1.3 of siphunculi. The third antennal segment with 11-20 secondary rhinaria. Hairs on the 3rd segment are short, blunted (0.011-0.017), 0.3-0.4 of its basal diameter. Siphunculi are 0.20-0.23 of the body length, 0.8-0.9 of the 3rd antennal segment, 1.7-2.1 of cauda, 3.9-4.3 of the ultimate rostral segment. Dorsal hairs are blunted, on the 1-5th tergites (0.011-0.022), 0.3-0.6, on the 8th tergite (0.035-0.056), 1.0-1.6 of the basal diameter of 3rd antennal segment. Small marginal tubercles are frequently placed on the 2-4th abdominal tergites. Other characters as apterous viviparous female.

Colour on the slides: head, antennae (apart of the base of the 3rd antennal segment), rostrum, thorax, distal parts of the femora and siphunculi, the bases and apices of tibiae, tarsi, genital plate are darkish. Marginal abdominal sclerites are developed on the 2-6 tergites.

Dimension of allotype. B. 2.07; ant. 2.08-2.09: III 0.53, IV 0.35-0.36, V 0.34-0.35, VI 0.68-0.69 (0.16-0.17+0.52); siph. 0.46; c. 0.24; u. r. s. 0.12; 2 s. h. t. 0.15.

Host Plants. *Carduus* sp., *Cicerbita azurea* (Ledeb.) Beauverd., *Hieracium korshinskyi* Zahn., *Inula* sp., *Tripleurospermum ambiguum* (Ledeb.) Fr. et Sav. (Asteraceae), *Draba lanceolata* Royle, *Barbarea arcuata* Reichb. (Brassicaceae), *Gagea emarginata* Kar. et Kir. (Liliaceae), *Ranunculus* sp. (Ranunculaceae), *Codonopsis clematidea* (Schrenk) Clarke, *Adenophora liliifolia* (L.) Bess., *Campanola glomerata* L. (Campanulaceae).

Bionomy. An aphid lives in stems and leaves, not visited by ants.

Type material. Holotype – ap.v.f., slide N2074, SE. Kazakhstan, S. sl. of Dzhungar Alatau, Kojanditau gor., 12 km to NW from Konirolen s.t., 1800 m.a.s.l., *Hieracium korshinskyi*, 25. 06. 1991, R. Kadyrbekov. Paratypes – 6 ap.v.f., 7 al.v.f., the same place and date; 1 ap.v.f., N2064, the same place and date, *Codonopsis clematidea;* 5 ap.v.f., N2069, the same place and date, *Campanula glomerata;* 1 ap.v.f., 4 al.v.f., N724, SE Kazakhstan, Northern Tien-Shan, Ketmen gor., Shalkudisu r., 2000 m.a.s.l., *Draba lanceolata*, 28. 06. 1987, R. Kadyrbekov; 3 ap.v.f., N711, N. Tien-Shan, Ketmen gor., 20 km. to SE. from Ulken Aksu s.t., 2500 m.a.s.l., *Codonopsis clematidea*, 24.0.6.1987, R. Kadyrbekov; 2 ap.v.f., 4 al.v.f., SE Kazakhstan, Northern Tien-Shan, Trans-Ili Alatau gor., Talgar gor., 2100 m.a.s.l., *Hieracium korshinskyi*, 9.07.1996, R. Kadyrbekov; N1491, N. sl. Dzhungar Alatau, Kungey gor., 10 km. to SE. from Koktuma s.t., 1800 m.a.s.l., *Adenophora liliifolia*, 5.08.1989, R. Kadyrbekov;

Distribution. Mountainous regions of the S. and SE Kazakhstan - W. Tien-Shan: Talass Alatau gor., Aksu-Dzhabagly res., 3100 m.a.s.l.; N. Tien-Shan: Trans-Ili Alatau and Ketmen gor., 1800-3000 m.a.s.l.; Dzhungarskiy Alatau: Tishkantau, Toksanbai and Kojanditau gor., 1700-2200 m.a.s.l.

Taxonomical notes. New subspecies differs from nominative one by the ratios of processus terminalis to 3rd antennal segment ((0.9)1.0-1.5 versus 0.9-1.0), to siphunculi (0.95-1.30 in comparison to 0.8-1.0), of siphunculi to body (0.22-0.25(0.28) against (0.23)0.25-0.32), to cauda (1.7-2.2(2.4) versus (1.8)2.1-2.6), of the length of hairs on the 8th abdominal tergite to the basal diameter of the 3rd antennal segment (0.7-1.0 in comparison to 0.5-0.8). *A. bidentis bidentis* East. live in the deserts and arid mountainous on the heights no more than 1000 m.a.s.l. *A. bidentis montanum ssp.n.* inhabits only in humid mountings meadows on the heights 1500-3100 m.a.s.l.

Acyrthosiphon neerlandicum brevisiphon Kadyrbekov, ssp. n.

Apterous viviparous female (by 6 specimens). Body is elliptic, 3.60-4.39 (fig. 3a). Cuticle is membranous or slightly imbricate. Frons is deeply grooved, 0.30-0.37 of the distance between bases of antennae. Antennal tubercles are high diverged. Median frontal tubercle is faintly visible. Frontal hairs (0.039) are pointed, 0.6-0.7 of basal diameter of the 3rd antennal segment. Antennae are six-segmented, 1.0-1.2(1.4) of body length. The first antennal segment is with 10-14 hairs. The third segment is (0.96)1.05-1.30 of 4th. *Processus terminalis* is 3.5-4.5 of the base of the 6th segment and 0.9-1.1 of the 3rd one. The base of the 6th antennal segment is 1.0-1.25(1.35) of the 2nd segment of hind tarsus. The secondary rhinaria in number 2-4 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are blunted (0.025-0.034), 0.4-0.6 of its basal diameter. Rostrum doesn't reach or reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.4-0.5 of the 2nd segment of hind tarsus with 2-4 accessory hairs (fig. 3b). Cylindrical siphunculi with distinct flanges are 0.17-0.21(0.23) of the body length, 1.1-1.3 of the cauda, 7.7-10.3 of the ultimate rostral segment. Cauda is carrot-shaped, with 14-18 long hairs (fig. 3c). Dorsal hairs are blunted, on the 1-5th tergites (0.017-0.028), 0.3-0.5 of the basal diameter of the 3rd antennal segment. There are 8-10 long hairs on the 8th tergite. Ventral hairs are long, pointed. Marginal tubercles are absent. Genital plate is broad oval, with 5-7 hairs on disk and 12-17 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3 hairs.

Color in life: body is bright-green, eyes are reddish. Color on slide: body is pale, only tarsi are brownish.

Dimension of holotype. B. 3.78; ant. 4.02-4.10: III 0.95-0.98, IV 0.86-0.87, V 0.66-0.69, VI 1.20-1.21 (0.22+0.98-0.99); siph. 0.77-0.79; c. 0.70; u. r. s. 0.09; 2 s. h. t. 0.22.

Host plant. *Euphorbia lamprocarpa* Prokh., *E. soongarica* Boiss. (Euphorbiaceae).

Bionomy. An aphid lives in stems and leaves, not visited by ants.

Material examined. Holotype: ap.v.f., slide N 1259, E. Kazakhstan, Zaisan cavity, Aighyrkum sandy, 16 km to N from Rozhkovo s.t., 28.06.1989, R. Kadyrbekov. Paratypes – 1 ap.v.f., same place and date; 4 ap.v.f., slide N 1399, E. Kazakhstan, Saur. gor., 10 km to S from Zaisan t., Zhanaturmys s.t. env., H-1000 m a.s.l., 24.07.1989, R. Kadyrbekov.

Taxonomical notes. New subspecies differs from nominative one by the ratios of processus terminalis to the base of 6th antennal segment (3.5-4.5 versus 3.0), siphunculi to the body (0.17-0.21[0.23] against 0.21-0.27) and to cauda (1.1-1.3 in comparison 1.2-1.6), hairs of the 3rd antennal segment to its basal diameter (0.4-0.6 versus 0.2-0.3) and less quantities of the secondary rhinaria on the 3rd antennal segment of apterous (2-4 and 3-10).

Acyrthosiphon ilka Mordvilko, 1914

Apterous viviparous female. Body is elliptic, 1.89-2.57. Cuticle is membranous or slightly imbricate. Frons is deeply grooved, 0.21-0.29 of the distance between bases of antennae. Antennal tubercles are high diverged. Median frontal tubercle is faintly visible. Frontal hairs (0.017) are short, slightly capitates, 0.5-0.6 of basal diameter of 3rd antennal segment. Antennae are six-segmented, 0.85-1.20 of body length. First antennal segment with 5-9 hairs. Third segment is 1.1-1.5 of 4th, 0.65-0.92 of the 6th ones. *Processus terminalis* is 3.0-.4.5 of the base of 6th segment and 0.8-1.25 of the 3rd one, 0.8-1.1 of siphunculi. The base of the 6th antennal segment is 1.0-1.2 of the 2nd segment of hind tarsus. Secondary rhinaria in number 1-6 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are short, slightly capitates (0.008-0.009), 0.2-0.3 of its basal diameter. Rostrum reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.85-0.95(1.0) of the 2nd segment of hind tarsus with 6-8 accessory hairs. Cylindrical siphunculi with distinct flanges are 0.22-0.32 of the body length, 0.95-1.20 of the 3rd antennal segment, 1.7-2.2 of the cauda, 4.1-6.0 of the ultimate rostral segment. Their diameter in the middle is 0.9-1.1 of diameter of the hind tibia in the middle. Cauda is finger-shaped with distinct constriction, with 6-9 long hairs. Dorsal hairs are slightly capitates, on the

1-5th tergites (0.006-0.009), 0.2-0.3 of the basal diameter of 3rd antennal segment. There are 5-6 hairs (0.017-0.028) on the 8th tergite, 0.5-0.8 of the basal diameter of the 3rd antennal segment. Small marginal tubercles sometimes placed on the 2-4 tergites. Genital plate is broad oval, with 2 hairs on disk and 8-10 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3 hairs.

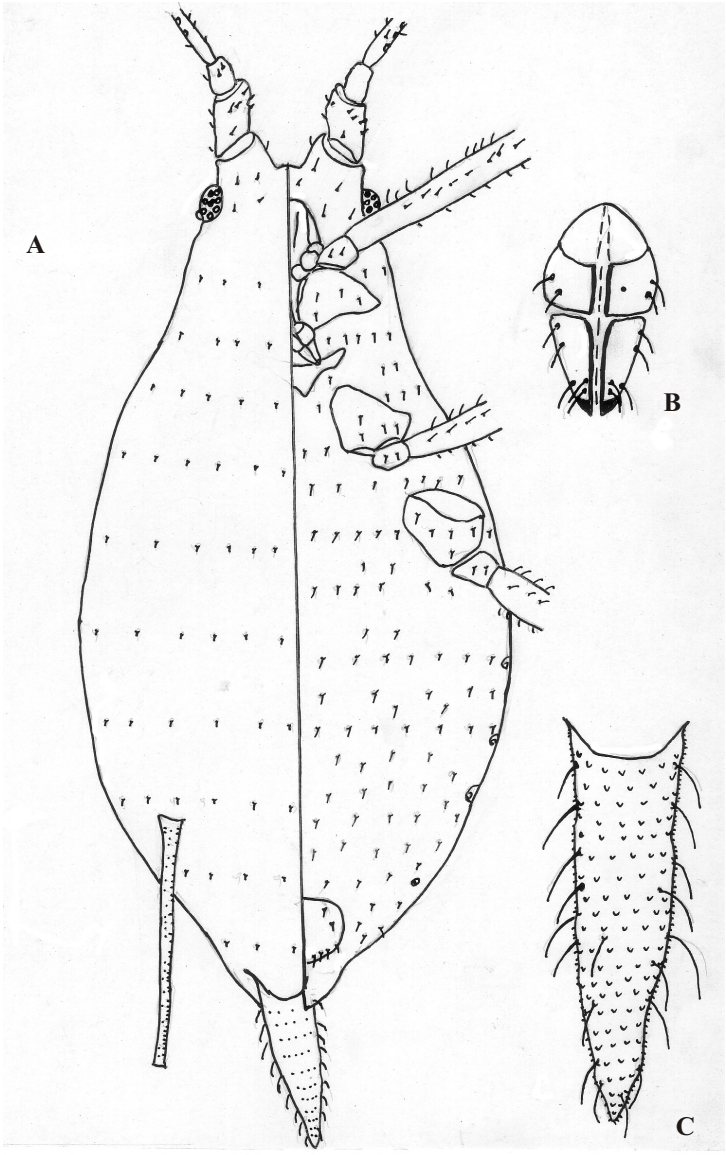

Fig. 3. Apterous viviparous female of *Acyrthosiphon neerlandicum brevisiphon* ssp. n.: A – habitus, B - ultimate and penultimate rostral segments, C – cauda.

Color in life: body is bright-green, eyes are reddish. Color on slide: body is pale, only apices of 3-5th and 6th antennal segments, tarsi, sometimes, apices of tibiae are brownish.

Alate viviparous female. Body is 2.18-2.35. Antennae are 1.08-1.20 of body length. Processus terminalis is 0.95-1.1(1.4) of siphunculi, 3.5-4.6 of the base of the 6th antennal segment. Third antennal segment with 12-17 secondary rhinaria. Ultimate rostral segment is 0.8-0.95 of the 2nd segment of the hind tarsus. Siphunculi are 0.8-1.1 of the 3rd antennal segment, 0.20-0.26 of cauda, 3.5-4.6 of the ultimate rostral segment. Their diameter in the middle is 1.0-1.3 of diameter of the hind tibia in the middle. Dorsal hairs are blunted, 0.7-0.9 (0.022-0.030) of the basal diameter of the 3rd antennal segment on the 8th abdominal tergite. Other characters as apterous viviparous female.

Color on slide: head, antennae (apart of the base of the 3rd segment), ultimate rostral segment, thorax, apices of the tibiae, tarsi are brownish. Body is pale.

Host plant. *Papaver croceum, P. nudicaule, P. pavoninum, P. somniferum* (Papaveraceae).

Bionomy. An aphid lives in stems and leafs, not visited by ants.

Material examined. Description is based on the descriptions by Mordvilko (1914), Narzykulov, Umarov (1969), materials from Kazakhstan and Kyrgyzstan. Type specimen from collection of Zoological Institute (Saint- Petersburg, Russia) is examined.

Taxonomical notes.

A. ilka is by mistake put in a rank of the "*nomen dubium*" (G. and M. Remaudiere, 1997). However it is valid species. V.F. Eastop (1971) considered its close to *A. bidentis* East. But, taking into account the depth of frontal groove, *A. ilka* enters into *A. malvae* species group.

Acyrthosiphon fragariaevescae Nevsky, 1951

Apterous viviparous female. Body is elliptic. Cuticle is membranous or slightly imbricate. Frons is deeply grooved, 0.32-0.40 of the distance between bases of antennae. Antennal tubercles are high diverged. Median frontal tubercle is absent. Frontal hairs (0.020-0.028) are short, pointed or blunted, 0.4-0.6 of basal diameter of 3rd antennal segment. Antennae are six-segmented, 0.8-1.4 of body length. First antennal segment with 7-14 hairs. Third segment is 0.8-1.2 of 4th, 0.45-0.75 of the 6th ones. *Processus terminalis* is 3.4-4.1 of the base of 6th segment and 1.1-1.2(1.75) of the 3rd one, (0.9)1.0-1.4 of siphunculi. Base of the 6th antennal segment is 1.5-1.7 of the 2nd segment of hind tarsus. Secondary rhinaria in number 0 (in norm), rarely 1-2 are developed in the basal part of the 3rd segment. Hairs on the 3rd segment are short, blunted (0.011-0.017), 0.2-0.3 of its basal diameter. Rostrum reaches the base of the middle coxae. Its ultimate rostral segment is short, blunted, 0.7-0.8 of the 2nd segment of hind tarsus with 6-7 accessory hairs. Cylindrical siphunculi with distinct flanges are 0.24-0.30 of the body length, 1.7-2.0 of the cauda, 8.7-9.1 of the ultimate rostral segment. Their diameter in the middle is 0.8 of diameter of the hind tibia in the middle. Cauda is carrot-shaped, with 9-13 short hairs. Dorsal hairs are blunted, on the 1-5th tergites (0.011-0.017), 0.2-0.3 of the basal diameter of 3rd antennal segment. There are 5-7 hairs on the 8th tergite (0.020-0.028), 0.4-0.6 of the basal diameter of the 3rd antennal segment. Marginal tubercles are absent. Genital plate is broad oval, with 2 hairs on disk and 9-12 ones along its posterior margin. Legs are long. First tarsal segment with 3:3:3 hairs.

Color in life: body is bright-green, eyes are reddish. Color on slide: body is pale, only apices of the 3-5th and 6th antennal segments, apices of tibiae, tarsi are brownish.

Host plant. *Fragaria vesca* (Rosaceae).

Material examined. The describtion is based on the description by V. Nevsky (1951) and 4 specimens (ap.v.f.) are deposited in the collection of Institute Zoology MES Kazakhstan Republic (Almaty).

Taxonomical notes. *A. fragariaevescae* Nevs. relates to *A. pisum* (Harris). It differs from this species by the quantity of the hairs on 1st antennal segment (7-14 versus 12-23), quantity of secondary rhinaria on the 3rd antennal segment (0-2 in comparison to 1-5), colour of siphunculi, ratio of 3rd antennal segment to 4th one (0.80-1.15 against 1.1-1.4) and other host plant.

Key for the identification of *Acyrthosiphon* species from Kazakhstan and adjacent regions

1(2). First tarsal segment with 5, 5, 5 hairs. Frons, antennae, distal part of siphunculi are brownish. Aphids live on *Euphorbia lamprocarpa, E. sp*. Tajikistan (*A. euphorbiae* Born. (Narzykulov, Umarov, 1969), Uzbekistan, S. Kazakhstan (W. and N. Tien-Shan).....
.....….*A. (s. str.) cyparissiae turkestanicum* Nevsky, 1929

2(1). First tarsal segment with 3, 3, 3 hairs. Frons, antennae, distal part of siphunculi are pale or darkish.

3(4). Frons, antennae, siphunculi, cauda, distal parts of the femora and tibiae are darkish or blackish. Siphunculi are 10-12 of the ultimate rostral segment. Aphids live on *Peucedanum*, *Ferula* (Apiaceae). Hungary, Ukraine, Kazakhstan (Dzhungar Alatau)…….....
…….....…….*A. (s. str.) nigripes peucedani* Bozhko, 1959

4(3). Frons, cauda, distal parts of the femora are pale.

5(6). Depth of frontal groove is 0.4-0.5 of the distance between the bases of antennae. Siphunculi are (0.32) 0.40-0.55 of the body length, 3.0-3.8 of cauda. Aphids live on *Eremosparton aphyllum, Goebelia alopecuroides, Ammodendron conollyi, A. argenteum, Caragana arborescens, Glycyrrhiza glabra, G. aspera, Alhagi sparsifolia, A. pseudoalhagi, Astragalus brachypus, A. spp., Oxytropis puberula* (Fabaceae), *Hulthemia persica* (Rosaceae), *Descurainia sophia, Lepidium obtusum* (Brassicaceae), *Gossypium, Malva neglecta* (Malvaceae), *Peganum harmala, Zygophyllum fabago* (Zygophyllaceae), *Xanthium strumarium, Artemisia sp.* (Asteraceae). Algeria, Egypt, Sudan, Israel, Iraq, Turkey, Italy, Iran, Pakistan, India, Turkmenistan, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan (desert zone, arid mountings), Ukraine (Crimea), Russia (N. Caucasus), NW. China.....
. …..…….....…..…..*A. (s. str.) gossypii* Mordvilko, 1914

6(5). Depth of frontal groove is no more than 0.4 of the distance between the bases of antennae.

7(12). Siphunculi are no more than 0.19 of the body length.

8(11). Depth of frontal groove is no more than 0.18 of the distance between the bases of antennae. Processus terminalis is no more than 3 of the base of the 6th antennal segment.

9(10). Processus terminalis is 1.6-2.5 of the base of the 6th antennal segment. Siphunculi are 0.10-0.14 of the body length, 2.2-2.6 of the ultimate rostral segment, 0.5-0.6 of the 3rd antennal segment. Aphids live on *Glaucium* spp., *Hypecoum parviflorum* (Papaveraceae). Tajikistan, Kyrgyzstan, S. Kazakhstan (Dzhungar Alatau), NW. China (Bogdo-Ola)…….……*A. (Xanthomyzus) glaucii* Narzykulov, 1966

10(9). Processus terminalis is 2.3-3.0 of the base of the 6th antennal segment. Siphunculi are 0.15-0.19 of the body length, 2.8-3.7 of the ultimate rostral segment, 0.65-0.75 of the 3rd antennal segment. Aphids live on *Crepis tenuifolia*. (Asteraceae). Mongolia…….……*A. (s. str.) crepidis* Holman, Szelegiewicz, 1975

11(8). Depth of frontal groove is no more than 0.22-0.25 of the distance between the bases of antennae. Processus terminalis is 3.5-4.1 of the base of the 6th antennal segment. Aphids live on *Vicia* sp (Fabaceae). Pakistan, India, Tajikistan……..*A. (s. str.) moltshanovi* Mordvilko, 1914

12(7). Siphunculi are no lesser than 0.20 of the body length. If that are 0.17-0.19 (few samples of *A. neerlandicum brevisiphon*) then depth of frontal groove is 0.30-0.37 of the distance between the bases of antennae.

13(16). Ultimate rostral segment with 16-25 hairs…….……subgen. *Tlja* Mordvilko, 1914

14(15). Base of the 6th antennal segment is 1.1-1.3 of the 2nd segment of the hind tarsus. Secondary rhinaria (3-6) are little, placed in basal part of the 3rd antennal segment. Hairs on the 3rd antennal segment (0.017-0.022) are 0.5 of its basal diameter. Siphunculi are 1.4-2.0 of cauda. Aphids live on *Lactuca serriola, L. sp.* N. Africa, Great Britain, Portugal, Spain, Belgium, France, Italy, Yugoslavia, Germany, Sweden, Poland, Hungary, Bulgaria, Israel, Turkey, Iraq, Iran, Pakistan, Ukraine, Russia, Kazakhstan (N. Tien-Shan, SW. Altai), N. America…….……..*A. (T.) lactucae* (Passerini, 1860)

15(14). Base of the 6th antennal segment is 0.70-0.83 of the 2nd segment of the hind tarsus. Secondary rhinaria (4-11) are large, placed on the all-3rd antennal segment. Hairs on the 3rd antennal segment (0.008-0.011) are 0.3-0.4 of its basal diameter. Siphunculi are 2.0-2.3 of cauda. Aphids live on *Lactuca serriola, L. sp., Sonchus arvensis.* Italy, Yugoslavia, Ukraine (Crimea), Georgia, Kazakhstan (arid zone of S. and E. parts), Uzbekistan, Tajikistan…..……..*A. (T.) scariolae* Nevsky, 1928

16(13). Ultimate rostral segment with no more than 14 hairs. If it with 16-23 ones (few samples of *A. malvae malvae, A. malvae agrimoniae*) then ultimate rostral segment is 1.1-1.5 of the 2nd segment of hind tarsus and processus terminalis is 4.8-7.5 of the base of 6th antennal segment.

17(34). Antennal tubercles are high, depth of frontal groove is (0.27)0.30-0.35 of the distance between the bases of antennae. If that only 0.27 (few samples of *A. heptapotamicum*) then siphunculi are 2.8-3.2 of cauda length and 0.32-0.42 of body length. Cauda is carrot-shaped or elongate-conic without constriction.

18(25). The base of the 6th antennal segment is 1.5-1.8 of the 2nd tarsal segment.

19(20). Siphunculi are 2.8-3.2 of cauda length and 10.4-12.7 of ultimate rostral segment. 8th tergite with 10(8) hairs. Aphids live on *Clematis songarica*. Kazakhstan (Charyn river) .....……..*A. heptapotamicum* sp. n.

20(19). Siphunculi are no more than 2.0 of cauda length and no more than 9.5 of ultimate rostral segment. 8th tergite with 6-8(10) hairs. Aphids not live on *Clematis*.

21(22). First antennal segment with (7)9-14 hairs. Third antennal segment with 0 (in norm) or 1-2 secondary rhinaria, 0.80-1.15 of the 4th one. Siphunculi are pale. Aphids live on *Fragaria vesca*. Kazakhstan (N. Tien-Shan, Tarbagatai)…….……..*A. (s. str.) fragariaevescae* Nevsky, 1951

22(21). First antennal segment with 12-23 hairs. Third antennal segment with 1-5 secondary rhinaria, 1.1-1.4 of the 4th one. Apices of tibiae and siphunculi are darkish. Aphids live on the plants from Fabaceae family. Cosmopolitan..…….……*A. (s. str.) pisum* (Harris, 1776)

23(24). Ultimate rostral segment with 3-7 accessory hairs. Cauda with 7-13 hairs. Aphids live on *Pisum, Lathyrus, Vicia, Trifolium, Medicago*. Cosmopolitan……...*A. pisum pisum* (Harris, 1776)

24(23). Ultimate rostral segment with (6)8-12 accessory hairs. Cauda with (11)15-23 hairs. Aphids live on *Ononis* spp. Great Britain, France, Holland, Norway, Sweden, Denmark, Spain, Italy, Czech, Germany, Poland, Latvia…….……..*A. pisum ononis* (Koch, 1855)

25(18). The base of the 6th antennal segment is no more than 1.3 of the 2nd tarsal segment. Cauda is carrot-shaped or other form, with long hairs.

26(27). Siphunculi are 2.6 of cauda. Aphids live on *Sophora japonica, Goebelia alopecuroides* (Fabaceae). Pakistan, Tajikistan, S. Kazakhstan (W. Tien-Shan)..... ..…….……..*A.(s. str.) sophorae* Narzykulov, Umarov, 1969

27(26). Siphunculi are no more than 2.1 of cauda.

28(29). Ultimate rostral segment with 10 accessory hairs. Cauda with 5-6 hairs. Aphids live on *Polygonum bistorta*. (Polygonaceae). Russia (W. Siberia)…….*A. (s. str.) bistorti* Ivanovskaja, 1973

29(28). Ultimate rostral segment is no more than 7 accessory hairs. Cauda with no less than 7hairs. Aphids not live on the plants from Polygonaceae family.

30(33) Ultimate rostral segment is 0.7-0.9 of the 2nd segment of hind tarsus, with 4-8 accessory hairs. Siphunculi are (1.5)1.6-2.1 of cauda length. Cauda with 7-10 hairs. Aphids live on the Fabaceae plants.

31(32). Processus terminalis is 0.8-1.1 of the 3rd antennal segment. Ultimate rostral segment is 0.8-0.9 of the 2nd segment of the hind tarsus. 8th abdominal segment with 4-8 hairs. Aphids live on *Medicago, Trifolium* and some other plants from Fabaceae family. S. Africa, Iran, Pakistan, India, Russia (Far East), Korea, Japan, N. and S. America, Australia, ……...*A. (s. str.) kondoi* Shinji, 1938

32(31). Processus terminalis is 0.7-0.9 of the 3rd antennal segment. Ultimate rostral segment is 0.7-0.8 of the 2nd segment of the hind tarsus. 8th abdominal segment with 7-10 hairs. Aphids live on *Caragana arborescens, C. spp.* Great Britain, Netherlands, Norway, Sweden, Finland, Denmark, France, Switzerland, Germany, Czech, Poland, Hungary, Moldova, Latvia, Ukraine, Russia (European part Siberia, Far East), Kazakhstan, Kyrgyzstan, Tajikistan, Mongolia, N. America..... .....……...…….*A. (s. str.) caraganae* (Cholodkovsky, 1907)

33(30). Ultimate rostral segment is 0.4-0.5 of the 2nd segment of hind tarsus, with 2-4 accessory hairs. Siphunculi are 1.1-1.3 of cauda length. Cauda with 13-21 hairs. Aphids live on *Euphorbia lamprocarpa.* Kazakhstan (east)…….....……*A. (s. str.) neerlandicum brevisiphon* ssp. n.

34(17). Depth of frontal groove is no more than 0.29 of the distance between the bases of antennae. Cauda is elongate-conic or finger-shaped, with constriction.

35(42). Antennal tubercles are gentle, depth of frontal groove is 0.14-0.20 of the distance between the bases of antennae.

36(41). Secondary rhinaria are always developed on 3rd antennal segment. Processus terminalis is no less than 3.3 of the base of the 6th antennal segment. Dorsal hairs are capitate…..... ……..…….....……..*Acyrthosiphon* Mordvilko, 1914 subgen.

37(38). The base of the 6th antennal segment is 0.85-0.95 of the 2nd segment of the hind tarsus. On the 3rd antennal segment are placed 7-32 secondary rhinaria. Ultimate rostral segment is 0.4-0.6 of the 2nd segment of hind tarsus, with 2-4 accessory hairs. Aphids live on *Euphorbia* spp. France, Spain, Italy, Czech, Germany, Hungary, Bulgaria, Turkey, S. Kazakhstan (N. Tien-Shan), Kyrgyzstan..... .....……..*A. (s. str.) euphorbiae* Borner, 1940

38(37). The base of the 6th antennal segment is (0.95)1.0-1.2 of the 2nd segment of the hind tarsus. On the 3rd antennal segment are placed 1-5 secondary rhinaria. Ultimate rostral segment is 0.75-0.95 of the 2nd segment of hind tarsus, with (4)6-8 accessory hairs.……...*A. (s. str.) bidentis* Eastop, 1953

39(40). Processus terminalis is 0.9-1.0 of the 3rd antennal segment, 0.8-1.0 of siphunculi. Siphunculi are (0.23)0.25-0.32 of body length, (1.8)2.0-2.6 of cauda. Hairs of the 8th abdominal tergite are 0.5-0.8 of the basal diameter of the 3rd antennal segment. Aphids live in the Kazakhstan on *Papaver pavoninum, Roemeria refracta* (Papaveraceae), *Ferula* sp. (Apiaceae), *Tragopogon capitatus, T. ruber, T. sp., Sonchus arvensis, Steptorhamphus crassicaulis, Acroptilon australe, Crupina vulgaris, Cousinia chrysantha, Chondrilla sp., Koelpinia linearis, Carthamus tinctorius, Cirsium sp., Achillea millefolium* (Asteraceae), *Capsella bursa-pastoris, Descurainia sophia, Malcolmia sp.* (Brassicaceae), *Astragalus flexus, A. turczaninovii* (Fabaceae), *Asperugo procumbens* (Boraginaceae). Kenya, Morocco, Spain, Yemen, Iran, Armenia, Pakistan, Turkmenistan, S. Kazakhstan (deserts, arid mountings)..... ……..……...……..*A. bidentis bidentis* Eastop, 1953

40(39). Processus terminalis is (0.9)1.0-1.5 of the 3rd antennal segment, 0.95-1.30 of siphunculi. Siphunculi are 0.22-0.25(0.28) of body length, 1.7-2.2(2.4) of cauda. Hairs of the 8th abdominal tergite are 0.7-1.0 of the basal diameter of the 3rd antennal segment. Aphids live in the Kazakhstan on *Carduus* sp., *Cicerbita azurea*, *Hieracium korshinskyi*, *Inula* sp., *Tripleurospermum ambiguum* (Asteraceae), *Draba lanceolata*, *Barbarea arcuata* (Brassicaceae), *Gagea emarginata* (Liliaceae), *Ranunculus* sp. (Ranunculaceae), *Codonopsis clematidea*, *Adenophora liliifolia*, *Campanola glomerata* (Campanulaceae). Kazakhstan (humid mountings – W. and N. Tien-Shan, Dzhungar Alatau)…..…….…….....……..*A. bidentis montanum* ssp. n.

41(36). On the 3rd antennal segment are 0 (in norm) or 1-2 secondary rhinaria. Processus terminalis is 2.7-3.4 of the base of the 6th antennal segment. Dorsal hairs are blunted. Aphids live on *Chelidonium majus* (Papaveraceae). Netherlands, Denmark, Sweden, Finland, France, Germany, Switzerland, Austria, Czech, Poland, Hungary, Latvia, Ukraine, Russia, Kazakhstan (N. Tien-Shan), Korea, Japan…….....……*A. (Liporrhinus) chelidonii* (Kaltenbach, 1843)

42(35). Depth of frontal groove is 0.21-0.29 of the distance between the bases of antennae.

43(48). Ultimate rostral segment is 1.1-1.5 of the 2nd segment of the hind tarsus. Hairs of the 3rd antennal segment are 0.6-0.8 of its basal diameter….....….*A. (s. str.) malvae* (Mosley, 1841)

44(47). The base of the 6th antennal segment is 1.0-1.1 of the 2nd segment of the hind tarsus. Ultimate rostral segment with 10-23 accessory hairs. Aphids not live on *Fragaria*.

45(46). Cauda with 10-16 hairs. Aphids live on *Geranium, Althea, Malva*. Cosmopolitan, Kazakhstan (W., N. Tien-Shan, Dzhungar Alatau, Altai).....*A. malvae malvae* (Mosley, 1841)

46(45). Cauda with 6-12 hairs. Aphids live on *Agrimonia*. Great Britain, Netherlands, Denmark, Sweden, Germany, Poland, Latvia, Turkey, Kazakhstan (Tentek river)…….…….....
…….....……..*A. malvae agrimoniae* (Borner, 1940)

47(44). The base of the 6th antennal segment is 1.1-1.2 of the 2nd segment of the hind tarsus. Ultimate rostral segment with 6-14 accessory hairs. Aphids live on *Fragaria spp*. Great Britain, Spain, Denmark, Norway, Sweden, Finland, Germany, Poland, Kazakhstan (N. Tien-Shan)……..…….……*A. malvae rogersii* (Theobald, 1913)

48(43). Ultimate rostral segment is no more than 1.1 of the 2nd segment of the hind tarsus. Hairs of the 3rd antennal segment are no more than 0.5 of its basal diameter.

49(50). Processus terminalis is 6.2-6.5 of the base of the 6th antennal segment, 1.2-1.4 of the siphunculi. Hairs of the 3rd antennal segment are 0.4-0.5 of its basal diameter. Aphids live on *Rubus caesius, R. spp*. Pakistan, India, Tajikistan…….....…..*A. (s. str.) rubi* Narzykulov, 1957

50(49). Processus terminalis is no more than 6 of the base of the 6th antennal segment, no more than 1.2 of the siphunculi. Hairs of the 3rd antennal segment are 0.2-0.4 of its basal diameter.

51(52). Body is large. Siphunculi are 2.8-3.0 of cauda. Aphids live on *Rumex paulsenianus* (Polygonaceae). Tajikistan…….....……..*A. (s. str.) rumicis* Narzykulov, 1969

52(51). Body is no such large. Siphunculi are no more than 2.8 of cauda. Aphids not live on *Rumex*.

53(54). Ultimate rostral segment is 0.9-1.1 of the 2nd segment of hind tarsus. Hairs of 3rd antennal segment are 0.3-0.4 of its basal diameter. Aphids live on *Potentilla spp*. Iceland, Great Britain, Sweden, Finland, Switzerland, Czech, Poland, Hungary, Latvia, Kazakhstan (W., N. Tien-Shan, Dzhungar Alatau), Canada, Greenland…..*A. (s. str.) boreale* Hille Ris Lambers, 1952

54(53). Ultimate rostral segment is no more 1.0 of the 2nd segment of hind tarsus, if that former is 0.9-1.0 (few specimens of *A. ilka*), then processus terminalis no more than 4.5 of the base of the 6th antennal segment. Hairs of 3rd antennal segment are 0.2-0.3 of its basal diameter. Aphids not live on *Potentilla spp*.

55(58). Siphunculi are 2.0-2.8 of cauda, if that former is 2.0-2.2 (few specimens of *A. soldatovi),* then base of the 6th antennal segment is 1.4-1.9 of the 2nd segment of the hind tarsus.

56(57). Processus terminalis is 5.5-5.6 of the base of the 6th antennal segment. Aphids live on indistinct host plant. Tajikistan……..….....……*A. (s. str.) pamiricum* Nevsky, 1929

57(56). Processus terminalis is 3.2-4.3 of the base of the 6th antennal segment. Aphids live on *Spiraea spp*. Tajikistan, Kazakhstan (W., N. Tien-Shan, Dzhungar Alatau, Tarbagatai), Russia (Far East) .....……...……*A. (s. str.) soldatovi* Mordvilko, 1914

58(55). Siphunculi are no more than 2.2 of cauda, if that former is 2.0-2.2 (few specimens of *A. galijae, A. ignotum, A. ilka),* then base of the 6th antennal segment is no more than 1.25 of the 2nd segment of the hind tarsus.

59(60). Siphunculi are 0.31-0.35 of the body length, 8.2-8.6 of the ultimate rostral segment. Aphids live on *Linum spp.* Ukraine, Russia (W. Siberia), S. Kazakhstan (W. Tien-Shan), Kyrgyzstan.....
...……..……*A. (s. str.) mordvilkoi* Nevsky, 1928

60(59). Siphunculi are 0.21-0.33 of the body length, 4.1-8.5 of the ultimate rostral segment, if they more 7.5 (few specimens of *A. galijae*), then processus terminalis is 0.88-1.0 of siphunculi in combination with 10-13 caudal hairs. Aphids not live on *Linum spp*.

61(66). The base of 6th antennal segment is 0.95-1.25 of the 2nd segment of hind tarsus. Cauda is slender, sword-shaped or finger-shaped, with distinct constriction, and with 6-10 hairs.

62(63). Ultimate rostral segment is 0.85-1.0 of the 2nd segment of hind tarsus, with 6-8 accessory hairs. Siphunculi are 4.1-6.0 of the ultimate rostral segment. Diameter of siphunculi in the middle is 0.9-1.1 of diameter of the hind tibiae in the middle. Aphids live on *Papaver croceum, P. nudicaule, P. pavoninum, P. somniferum* (Papaveraceae). France, Spain, Greece, Turkey, Iran, Tajikistan, Kyrgyzstan, Kazakhstan (N. Tien-Shan, Dzhungar Alatau), Russia (E. Siberia)..... ……*A. (s. str.) ilka* Mordvilko, 1914

63(62). Ultimate rostral segment is 0.65-0.85 of the 2nd segment of hind tarsus, with 4-6 accessory hairs. Siphunculi are 5.9-7.5 of the ultimate rostral segment. Diameter of siphunculi in the middle is 1.2-1.5 of diameter of the hind tibiae in the middle.

64(65). Hairs on the 8th abdominal tergite are 0.030-0.040 mm. Siphunculi are dumpy, softly squamous, 0.21-0.25 of the body length, 1.45-1.85 of cauda. Aphids live on *Cicer songoricum, Hedysarum semenovii* (Fabaceae). Tajikistan, Kyrgyzstan, SE Kazakhstan (Dzhungar Alatau)..... ……*A. (s. str.) hissaricum* Umarov, 1966

65(64). Hairs on the 8th abdominal tergite are 0.023-0.030 mm. Siphunculi are slender, coarsely squamous, 0.25-0.33 of the body length, 1.7-2.0 of cauda. Aphids live on *Spiraea spp*. Denmark, Norway, Sweden, Netherlands, Germany, Czech, Poland, Latvia, Ukraine, Georgia, Russia (with Far East), Kazakhstan (apart the deserts), Kyrgyzstan, Tajikistan, India, NW. China, Mongolia..... ……*A. (s. str.) ignotum* Mordvilko, 1914

66(61). The base of 6th antennal segment is 0.70-0.95 of the 2nd segment of hind tarsus. Cauda is dumpy, knife-shaped, without constriction, and with 10-13 hairs. Aphids live on *Sanguisorba officinalis* (Rosaceae). Kazakhstan (Dzhungar Alatau)……*A. (s. str.) galijae* sp. n.

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Резюме

Кадырбеков Р.Х. **Тли рода *Acyrthosiphon* Mordvilko, 1914 (Homoptera, Aphididae, Macrosiphini) из Казахстана.**

Описаны два новых вида и два новых подвида тлей рода *Acyrthosiphon* Mordv. *A. galijae* sp. n. с *Sanguisorba officinalis* наиболее близок к *A. ignotum* Mordv., от которого отличается большим числом акцессорных волосков ([6]8 против 4-6-ти) и волосков хвостика ([10]11-13 в сравнении с 7-10-ю), формой хвостика, более длинными волосками на 8-м тергите (0.040-0.067 и 0.023-0.030), меньшей пропорцией диаметра трубочек в их середине к среднему диаметру задних голеней (0.8-1.0 в сравнении с 1.2-1.5-ю) и иным кормовым растением. Новый вид также близок к *A. sanguisorbae* Sec. (Seccombe, 1987), который тоже обитает на *Sanguisorba* в Афганистане. Описанный таксон можно легко отличить от этого вида, по окраске вершин усиков и трубочек, меньшему числу вторичных ринарий у бескрылой морфы (1-4 против 4-6-ти), более длинным лобным волоскам (0.017-0.028 в сравнении с 0.005-0.010-ю), по числу хвостовых и акцессорных волосков ([10]11-13; [6]8 и 8-10; 5-7) и пропорции трубочек к телу (0.21-0.29 в сравнении с 0.28-0.37).

A. heptapotamicum sp. n. с *Clematis songarica*, габитуально входит в состав видовой группы *A. pisum*. Новый вид легко отличим от *A. pisum* (Harris) и *A. fragariaevescae* Nevs. по более высокой пропорции трубочек к хвостику (2.8-3.2 против 1.2-2.0-х) и к последнему членику хоботка (10.4-12.7 в сравнении с 5.2-9.3-мя), более многочисленными волосками на 8-м тергите (10[8] и 5-8[10]) и кормовым растением из семейства лютиковых (Ranunculaceae).

A. bidentis montanum ssp. n. – полифаг, найденный на растениях из семейств (Asteraceae, Brassicaceae, Campanulaceae, Liliaceae, Ranunculaceae) отличается от номинативного подвида большей пропорцией шпица к 3-му членику усиков ([0.9]1.0-1.5 против 0.9-1.0-го), меньшей пропорцией трубочек к телу (0.22-0.25[0.28] в сравнении с [0.23]0.25-0.32-ю), к хвостику (1.7-2.2[2.4] и [1.8]2.1-2.6), пропорцией длины волосков 8-го тергита к диаметру 3-го членика усиков в основании (0.7-1.0 в сравнении с 0.5-0.8-ю). *A. bidentis bidentis* East. обитает в пустынной зоне и аридных горах и предгорьях до высоты не более 1000 м н.у.м. *A. bidentis montanum ssp.n.* отмечен только на горных разнотравных лугах, на высотах 1500-3100 м н.у.м.

A. neerlandicum brevisiphon ssp. n. с *Euphorbia lamprocarpa* отличается от номинативного подвида пропорциями шпица к основанию 6-го членика усиков (3.5-4.5 против 3.0), трубочек к телу (0.17-0.21[0.23] в сравнении с 0.21-0.27-ю) и к хвостику (1.1-1.3 и 1.2-1.6), волосков 3-го членика усиков к его базальному диаметру (0.4-0.6 против 0.2-0.3), а также меньшим числом вторичных ринарий (2-4 и 3-10).

Сделаны переописания с учетом современных данных *A. fragariaevescae* Nevs. и *A. ilka* Mordv. Первый (*A. fragariaevescae*) входит в видовую группу *A. pisum*. В последнем мировом каталоге тлей (G. and M. Remaudiere, 1997) *A. ilka* был отнесен в разряд “nomen dubium”, но как показывают наши исследования, это валидный вид, правильно описанный А.К. Мордвилко (Мордвилко, 1914). В. Ф. Истоп (Eastop, 1971) считал его близким к *A. bidentis* East., однако он принадлежит к видовой группе *A. malvae*. Составлена определительная таблица по бескрылым живородящим самкам для различения 34 видов *Acyrthosiphon,* обитающих в Казахстане и на территории сопредельных государств.

Тұжырым

Қадырбеков Р.Х. Қазақстандағы *Acyrthosiphon* Mordvilko, 1914 (Homoptera, Aphididae, Macrosiphini) туысының өсімдік биттері.

Мақалада *Acyrthosiphon* Mordvilko туысындағы өсімдік битінің екі жаңа түрі мен түршесі сипатталып жазылған.