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**A NEW SPECIES OF THE GENUS *APHIDUROMYZUS* UMAROV ET  
IBRAIMOVA, 1967 (HEMIPTERA: APHIDOMORPHA: APHIDIDAE)  
FROM KAZAKHSTAN**

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**Summary.** *Aphiduromyzus dzhungaricus* Kadyrbekov, **sp. n.** is described from the South-Eastern Kazakhstan (Dzhungar Alatau). The new species differs from *A. rosae* Umarov et Ibraimova, 1967 by ratios of processus terminalis to base of VI antennal segment, length of siphunculus to length of cauda, and ultimate rostral segment to base of VI antennal segment, by the presence of marginal tubercles only on the pronotum, I–IV and VII abdominal segments and quantity of setae on the cauda. A key to apterous and alate viviparous females of the genus *Aphiduromyzus* Umarov et Ibraimova, 1967 is provided.

**Key words:** aphids, *Aphiduromyzus*, taxonomy, new species, key, Palaearctic region.

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**Резюме.** Из Юго-Восточного Казахстана (Джунгарский Алатау) описан *Aphiduromyzus dzhungaricus* Kadyrbekov, **sp. n.** Новый вид отличается от *A. rosae* Umarov et Ibraimova, 1967 соотношением шпика к основанию VI членика усиков, длиной трубочек к длине хвостика и последнего членика хоботка к основанию VI членика усиков, наличием краевых бугорков только на переднеспинке, I–IV и VII брюшных тергитах и количеством щетинок на хвостике. Составлена определительная таблица для бескрылых и крылатых живородящих самок рода *Aphiduromyzus* Umarov et Ibraimova, 1967.

**INTRODUCTION**

The new species from different genera of the family Aphididae has been described from Kazakhstan recently (Kadyrbekov, 2021; Kadyrbekov *et al.*, 2022). Now we continue such investigations. The genus *Aphiduromyzus* Umarov et Ibraimova, 1967 was considered a monotypic genus known from Middle Asia (Northern Kyrgyzstan) (Umarov & Ibraimova, 1967). Morphologically, this genus is most closely related to *Amphicercidus* Oestlund, 1922,

species of which live on the bark and leaves of *Lonicera* (Caprifoliaceae) and are found in Asia and North America (Blackman, 2021). The type species of *Aphiduromyzus*, *A. rosae* Umarov et Ibraimova, 1967, was collected from the underside of leaves of *Rosa* sp. (Rosaceae) in the Issyk-Kul basin (Akterek gorge). A new species of *Aphiduromyzus* was collected from the bark of trunks on *Rosa alberti* in South-Eastern Kazakhstan (Dzhungar Alatau) in 2016. It is described below. Holotype and paratypes of a new species are stored in the collection of the Institute of Zoology of the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Almaty).

#### TAXONOMY

##### *Aphiduromyzus dzhungaricus* Kadyrbekov, sp. n.

<https://zoobank.org/NomenclaturalActs/66DD7278-C4C4-4270-9CC4-1263C4323E87>

Figs 1–7

**TYPE MATERIAL.** Holotype: apterous viviparous female (slide no 5507), **South-Eastern Kazakhstan:** Dzhungar Alatau mountings, Dzhungar-Alatau Nature park, Sarkan ravine, h=1500 m, on *Rosa alberti*, 9.VI 2016, leg. R. Kadyrbekov. Paratypes: one alate viviparous female and two apterous viviparous females, same place and date as holotype.

**DESCRIPTION. Apterous viviparous female** (holotype and paratypes). Body oval, 2.92–3.29. Noticeable marginal tubercles are present on the pronotum, I–IV and VII abdominal tergites. Frontal groove low with middle tubercle. Setae of frontal short, pointed at end, 0.68–0.88 times as long as diameter of third antennal segment at base.

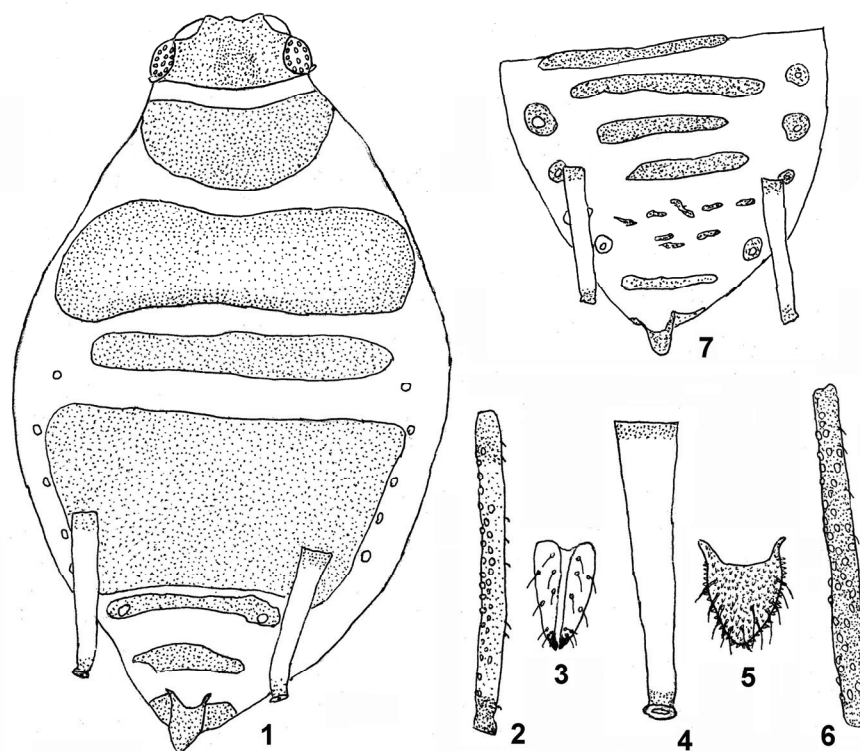
Antennae six-segmented, 0.68–0.73 of long as body. Length of segment III 1.79–2.07 times as long as segment IV, 0.93–1.10 times as long as head between eyes, 1.08–1.15 times as long as siphunculi, 0.80–0.91 of long as antennal segment VI. It has 24–35 secondary rhinaria located all over segment. Setae on segment III pointed at apex, 0.43–0.58 of long as diameter of segment III at base. Processus terminalis 4.07–4.43 times as long as base of antennal segment VI, 0.89–1.02 times as long of antennal segment III, 0.91–1.02 times as long as head between eyes, 0.96–1.13 times as long as siphunculi. Antennal segment IV, 1.19–1.32 times as long as antennal segment V.

The rostrum reaching the middle coxae. Ultimate rostral segment is stumpy, 0.74–0.84 times as long as second segment of hind tarsus, 1.07–1.36 times as long as base of antennal segment VI, with 10–12 accessory setae. Setae on abdominal tergite III 0.26–0.43, on tergite VIII 0.59–0.88 of long as basal diameter of antennal segment III. Abdominal tergite VIII has 5–6 setae. Anterior margin of subgenital plate with 12–16, posterior margin with 20–28 setae. The siphunculi are subcylindrical, with clear flanges. The siphunculi are 0.17–0.20 times as long as the body, 0.84–1.00 times as wide as the head between the eyes, and 2.52–2.60 times as long as the cauda. Cauda triangular, 0.96–1.20 its width at the base, with 10–14 long, thickened setae. Legs long, their hind femora 0.27–0.30 body length, 0.50–0.54 hind tibia length, 1.36–1.52 head width between eyes. Length of hind tibia 2.52–3.08 times head width, 0.50–0.56 body length. The second segment of the hind tarsus is 1.38–1.62 times as long as the base of the VI antennal segment. First tarsal segment with 3, 3, 3 setae.

**MEASUREMENTS** (holotype, in mm). Body 3.29, antennae 2.22, antennal segments: III 0.65–0.66, IV 0.33, V 0.27, VI (0.15+0.61); width of head between eyes 0.60; siphunculi 0.59/0.60; cauda 0.23; ultimate rostral segment 0.16; second segment of hind tarsus 0.22.

**COLOR IN LIVE.** Pink-brown with light tibiae and siphunculi. Antennae is dusky. Cauda is dark brown.

COLOR IN SLIDE. Head, I, II, VI, apex of III, proximal two-thirds of IV, V segments of antennae, rostrum, prothorax, mesothorax, field of the I–VI abdominal sclerites, transverse band on abdominal tergite VII–VIII, metathorax, subgenital and anal plates, coxae, femora (except base), base and apex of tibiae, tarsi, cauda, are dark brown. The remaining parts of the antennae are dusky. Tibiae and siphunculi are light with darkened base and apex.



Figs 1–7. *Aphiduromyzus dzhungaricus* sp. n. (1–5) – apterous viviparous female: 1 – body, frontal groove and dorsal sclerotization; 2 – III antennal segment; 3 – ultimate rostral segment; 4 – siphunculus; 5 – cauda; (6, 7) – alate viviparous female: 6 – III antennal segment; 7 – dorsal sclerotization.

**Alate viviparous female** (paratype). Body oval, 2.70. Noticeable marginal tubercles are present on the pronotum, I–V and VII abdominal tergites. Frontal groove low with middle tubercle. Setae of frontal short, pointed at end, 0.80–0.81 times as long as diameter of third antennal segment at base.

Antennae six-segmented, 0.89–0.90 of long as body. Length of segment III 1.73–1.97 times as long as segment IV, 1.11 times as long as head between eyes, 1.18–1.23 times as long as siphunculi, 0.79–0.80 times as long as antennal segment VI. It has 42–46 secondary rhinaria located along the entire length of the segment. Setae on segment III pointed at apex, 0.4 of long as diameter of segment III at base. Length of segment IV 1.15–1.31 times as long

as segment V. It has 9–13 secondary rhinaria located along the entire length of the segment. Antennal segment V has 0–2 secondary rhinaria. Processus terminalis 5.26–5.75 times as long as base of antennal segment VI, 1.06–1.07 times as long of antennal segment III, 1.11 times as long as head between eyes, 1.18–1.23 times as long as siphunculi.

Rostrum reaching the middle coxae. Ultimate rostral segment is stumpy, 0.84 times as long as second segment of hind tarsus, 1.25–1.36 times as long as base of antennal segment VI, with 10 accessory setae. Setae on abdominal tergite III 0.32, on tergite VIII 0.61 of long as basal diameter of antennal segment III. Abdominal tergite VIII with 6 setae. Along anterior margin of subgenital plate are 12, along posterior margin are 28 long setae. Siphunculi are subcylindrical, with clear flanges. Siphunculi are 0.20–0.21 times as long as the body, 0.91–0.94 times as wide as the head between the eyes, and 2.82–2.94 times as long as the cauda. Cauda triangular, equal its width at the base, with 10–14 long, thickened setae. The legs are long, their hind femora are 0.34–0.35 times as long as the body, 0.50–0.54 times as long as the hind tibia, and 1.51–1.53 times as wide as the head between the eyes. Length of hind tibia 2.81 times head width, 0.64 of body length. The second segment of the hind tarsus is 1.50–1.63 times as long as the base of the VI antennal segment. First tarsal segment with 3, 3, 3 setae.

MEASUREMENTS (in mm). Body 2.70, antennae 2.40–2.42, antennal segments: III 0.68, IV 0.35–0.40, V 0.30, VI (0.13–0.14+0.73); head width between eyes 0.61; siphunculi 0.55/0.58; cauda 0.20; ultimate rostral segment 0.17; second segment of hind tarsus 0.21.

COLOR IN LIVE. Pink-brown with brown antennae, femora, tarsi and cauda. The tibiae and siphunculi are light colored.

COLOR IN SLIDE. Head, antennae, rostrum, thorax, coxae, femora (except bases), bases and apices of tibiae, tarsi, cauda, transverse stripes on abdominal tergites I–VIII, subgenital and anal plates are dark brown. Round marginal spots with tubercles inside on abdominal tergites I–VI are dark brown. Tibiae and siphunculi are light with darkened base and apex sclerites.

DIAGNOSIS. New species differs from *A. rosae* by ratios of processus terminalis to base of VI antennal segment by alate viviparous females (5.26–5.72 versus 6.78–6.88), siphunculus to cauda by apterous and alate viviparous females (2.52–2.60 and 2.82–2.94 in comparison 3.10–3.13 and 3.40–3.46), and ultimate rostral segment to base of VI antennal segment by apterous viviparous females (1.38–1.62 and 2.20–2.25), by the presence of marginal tubercles only I–IV and VII abdominal segments (I–VII abdominal sclerites), difference in sclerotization of abdominal tergites by alate viviparous females and quantity of setae on the cauda.

BIONOMY. Aphids live scattered on the rosehip bark *Rosa alberti* Rgl. (Rosaceae). Only alate and apterous viviparous females have been found. Visited by ants.

DISTRIBUTION. South-Eastern Kazakhstan.

ETYMOLOGY. The species is named after the Dzhungar Alatau mountings where it was collected.

#### Key to species of the genus *Aphiduromyzus*

- 1(4) Apterous viviparous female.
- 2(3) Length of siphunculus to length of cauda 3.10–3.13 and ultimate rostral segment to base of VI antennal segment 2.20–2.25. Marginal tubercles are present on the pronotum, I–VII abdominal sclerites. Cauda with 8–10 setae. On the leaves .....  
..... *A. rosae* Umarov et Ibrahimova, 1967
- 3(2) Length of siphunculus to length of cauda 2.52–2.60 and ultimate rostral segment to base of VI antennal segment 1.38–1.62. Marginal tubercles are present on the pronotum, I–IV and VII. Cauda with 10–14 setae. On the bark ..... *A. dzhungaricus* **sp. n.**

- 4(1) Alate viviparous female.
- 5(6) Ratios of processus terminalis to base of VI antennal segment 6.78–6.88. Length of siphunculus to length of cauda 3.40–3.46. Marginal tubercles are present on the pronotum, I–VII abdominal tergites. On I–VI abdominal tergites is field of sclerotization ..... *A. rosae*
- 6(5) Ratios of processus terminalis to base of VI antennal segment 5.26–5.72. Length of siphunculus to length of cauda 2.82–2.94. Marginal tubercles are present on the pronotum, I–V and VII abdominal tergites. On I–VI abdominal tergites are transverse stripes ..... *A. dzhungaricus* **sp. n.**

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