

**KEY TO THE APTERAE AND ALATAE VIVIPARAE OF THE KNOWN
UROLEUCON SPECIES (HOMOPTERA: APHIDIDAE) FROM IRAN.**

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Summary

Apterae and alate viviparae females of 20 Known *Uroleucon* species collected on various hostplants in Iran are keyed. Because of not being available, the alate of *U. muralis*? was not considered in the key. The five species *U. ranicum*, *U. virgatae*, *U. caspicum*, *U. tortuosissima* and *U. hymenoccephali* have been collected only in Iran and there is not any report from other parts of the world.

Introduction: This genus principally living on *Compositae* and partially on *Campanulaceae* are mostly monophagous. According to the morphological characters and hostplants these are closely related with *Macrosiphoniella* Del Guercio and *Paczoskia* Mordvilko. The living specimens of most species are brown to black, but some green ones are also found in the populations.

Almost 200 species of this genus have been reported from the world, mostly belonging to European, American and Far East specimens (HilleRisLambers 1939, Boerner & Heinze 1957, Remaudier 1958, Olive 1963, Szelegiewicz 1966, Müller 1969, Richards 1972, Meier 1975, Holman 1965, 1974, 1975, 1981a, 1981b, Lampel 1974, 1980, 1983).

Shaposhnikov (1964) keyed beside of the species of European part of

USSR, also those of central asia, Narzikulov & umarov (1969) those of Tadzhikistan and neighbouring regions, Bodenheimer & Swirski (1957) five and Eastope (1985) 14 Middle Eastern species of this genus including four species from Iran. Holman (1980) one and Rezwani & Lampel (1987, 1990) described four iranian ones.

Key to the apterae viviparae females

1) colour in life green to light green, ult. rostr. joint at most 0,12 mm as long as second joint of hind tarsus with at most 5 secondary hairs. On *Conyza canadensis* and *Bidens* sp. in western Azerbaijan and northern part of Iran. U. (Lambertius)

erigeronensis Thomas

- Colour in life grayish brown, light brown, dark brown to black. Ult. rostr. joint longer than 0,12 mm with more than 5 secondary hairs if less, then ult. rostr. joint shorter than 2nd joint of hind tarsus

2(1) Cauda and siphunculi always dark brown to black, siphunculi reticulated 20-28 % of distal part (Subgenus *Uromelan*)3

- Cauda pale or slightly brownish, siphunculi brown to dark brown. Sometimes pale at the basal or medial part, reticulated part covering 15-40% of the distal part. (*Uroleucon* s. str.)6

3(2) Genital plate bearing only two hairs in anterior half. Cauda with 12-18 hairs in different size, secondary rhinariae on 3rd ant. seg. covering 68-90% of the length of segment.

On *Carthamus tinctorius* and *Centaurea picris*, cosmopolite.

U. *compositae* (Theob).

- Genital plate bearing 2-4 hairs on anterior half and cauda 14-23 hairs, secondary rhinariae covering at most 65% of the whole length of segment, on other hostplants4

4(3) Cauda 2, 5-3, 5 times as long as basal part of VI. ant. seg. which is 1, 2-1,4 times as long as the 2nd joint of hind tarsus, on *Centaurea* spp

U. *jaceae* (L.)

- Cauda at least 4 times as long as basal part of VI. ant. seg. which is equal to

- 2nd joint of hind tarsus. Ult. rostr. joint 1, 5-1, 6 times as long as 2nd joint of h. tarsus. On other host plants.5
- 5(4) Cauda fingershaped, ult. rostr. joint with 8-10 secondary hairs. On *Cirsium Carduus*, *Onopordon* and *Thevenotia* in Tehran area, Central and northern of Iran. U. aenus (H.R.L.)
- Cauda dirkshaped, ult. rostr. joint at most with 7 secondary hairs. On *Carthamus oxycantha* in Tehran area. U. Carthami (H.R.L.)
- 6(2) Dorsal part of abdominal segments without sclerites or with some small and undistinct sclerites7
- Dorsal part of abdominal segments with distinct sclerites bearing 1-3 hairs. The sclerites distributed regularly on all segments.14
- 7(6) Abdominal segments 1-7 with tubercles, ult. rostr. joint 0, 12-0, 15 mm.....8
- Abdominal segments without tubercles, ult. rostr. seg. usually longer than 0,15 mm, if shorter, than dorsal part of abd. seg. with small sclerites.9
- 8(7) Processus terminalis of last ant. seg. 2,63-3, 81 times as long as basal part of the same. seg., number of secondary rhinariae on 3rd ant. seg. 18-39 and secondary hairs on apical part of rostrum 5-6. On *Centaurea virgata* subsp. *squarrosa* in Tehran area, Esfahan and northern part of Iran. U. *virgatae* Rezwani & Lampel
- Processus terminalis of last ant. seg. 2,13-2,63 times as long as the basal part of VI. ant. seg., number of secondary rhinariae on 3rd ant. seg. 7-19 and secondary hairs on ult. rostr. joint 7-9, on *Scorzonera tortuosissima* in Saveh. U. *tortuosissimae* Rezwani & Lampel
- 9(7) Antesiphuncular sclerites present. Processus terminalis of VI. ant. seg. 4-6 times as long as the basal part of the same seg.10
- Antesiphuncular sclerites absent, processus terminalis of last ant. seg. at most 3,5 times as long as basal part of the of the same seg.12
- 10(9) Siphunculi shorter than $\frac{1}{3}$ of the body length, $\frac{1}{4}$ distal part of 3rd ant. seg. slender, number of secondary rhinariae on 3rd ant. seg. 24-60 ,

- Scattered on the whole length of the seg., On *Cundelia tunifortii* in Tehran area. *U. iranicum* Holman
- Siphunculi at least of $\frac{1}{3}$ of the body length. 3rd ant. seg. nearly cylindrical, number of secondary rhinariae on 3rd ant. seg. at most 30 covering about 60% of the whole length of the seg. On other hostplants.11
- 11(10) 3rd ant. seg. with 14-30 secondary rhinariae. Siphunculi dark sometimes pale in medial part, 1,6-2,0 times as long as cauda. On *Lactuca spp.* and *Sonchus spp.* *U. sonchi* (L.)
- 3rd ant. seg. bearing at most 10 secondary rhinariae. siphunculi light brown and a little darker in basal and distal part, more than twice as long as cauda. On *Tussilago farfara* in Tehran province. *U. tussilaginis* (Walker)
- 12(9) Cauda 0,75-0,95 of the length of siphunculi, number of caudal hairs 18-29 secondary rhinariae on 3rd ant. seg. 16-30 distributed on 68-95% of the whole length of seg. On *Hymenocephalus rigidus* in Saveh. *U. hymenocephali* Rezwani & Lampel
- Cauda 0,55-0,80 times as long as siphunculi, bearing 10-12 hairs, secondary rhinariae on 3rd ant. seg. 7-9 distributed at most 60% of the whole length of seg. On *Lactuca spp.*13
- 13(12) Basal half of siphunculi pale, at most 1,5 times as long as cauda, ultimate joint rounded in apical part less than twice as long as its basal width bearing 9-11 secondary hairs. On *Lactuca spp.* in Tehran area, central and northern Iran. *U. bielawaski* (Szelegiewicz)
- Siphunculi wholly brown, 1,6 times as long as cauda. Ultimate rostral seg. triangular in shape, at least twice as long as its basal width, bearing 10-13 secondary hairs. On *Lactuca orientalis* in Tehran province. *U. muralis?* (Buckton)
- 14(6) Cauda short, as long as distance between two antennal bases or shorter, distal part of femora pale. On *Tanacetum partenifolium* in northern Iran.

U. tanacetii (L.)

- Cauda longer than distance between two antennal bases, distal part of femora dark. On other hostplants.15
- 15(14) First tarsal segments with 5:5:5 setae. Apical part of rostrum rounded, at most twice as long as its basal width and longer than 2nd joint of hind tarsus.16
- First tarsal joint with 3: 3: 3 or 4: 4: 4 setae , apical part of rostrum relatively sharp usually twice as long as its basal width and shorter than 2nd joint of hind tarsus17
- 16(15) Number of caudal hairs 24-41. Anterior sclerites absent, number of secondary rhinariae on 3rd ant. seg. 22-35. On *Serratula quinquefolia* from northern Iran. U. caspicum Rezwani & Lampel
- Number of caudal hairs 18-23, anterior sclerites present, number of secondary rhinariae on 3rd ant. seg. 50-72 on *Crepis micrantha* from northern Iran. U. hypochoeridis (H.R.L.)
- 17(15) Ult. rostr. joint 1,2-1,35 times as long as 2nd joint of hind tarsus.18
- Ult. rostr. joint as equal to 2nd joint of hind tarsus or shorter.19
- 18(17) The whole length of antennae dark brown, 3rd ant. seg. with 44-64 secondary rhinariae covering to 80% of the whole length of the seg., 8. abdominal seg. with at most 6 hairs. Apical part of rostrum 3 times as long as its basal width . On *Picris sp.* from western Azarbaydjan and Tehran. U. picridis (F.)
- 3rd ant. seg. and basal part of IV. ant seg. pale, number of rhinariae on 3rd ant. seg. 26-39 covering at most 60% of the whole length of the seg., apical part of rostrum shorter than 3 times as its basal width . 8 . abdominal segment with 6-10 hairs. On *Cirsium arvense* from Western Azarbaydjan and northern Iran. U. Cirsii (L.)
- 19(17) Apical part of rostrum shorter than second joint of hind tarsus with 4-6 secondary hairs, 2nd joint of hind tarsus 1,2-1,4 times as long as basal part of last ant. joint. On *Chondrilla juncea* Cosmopolite.

U. chonarrillae (Nevski)

- Apical part of rostrum with 6 - 9 d secondary hairs , equal to 2nd joint of hind tarsus and basal part of last ant. joint Or *Cichorium*, *Crepis* *Lapsana communis*, *Tragopogon* sp. *Taraxacum syriacum* Cosmopolite.

U. cichorii (Koch)

Key to alate viviparae females

- 1) Colour in life green, number of secondary rhinariae on 3rd ant. seg. 22-30 and secondary hairs on ult. rost. joint 7-10, basal part of siphunculi pale. On *Conyza* and *Bidens* sp. U. erigeronensis
 - Colour in living specimens grayish brown, light, dark brown to black, number of rhinariae on 3 rd ant. seg. at least 30, if less than siphunculi black in the whole length. Number of caudal hairs at least 10. On other hostplants.2
- 2(1) Cauda always black 0,5-0,65 timea as long as siphunculi (Uromelan)3
 - Cauda light , rarely brownish, 0,4-0,95 times as long as siphunculi (Ureleucon s. str)6
- 3(2) Lateral abdominal tubercles absent, caudal hairs 10-19 and apical part of rostrum 1,1-1,4 times as long as basal part of last ant.seg. On *Centaurea picris*, *Carthamus tinctorius*. U. compositae
 - Lateral abdominal ubercles usually present on seg. 2-4, number of caudai hairs 13-28, apical part of rostrum 0,85-1,6 times as long as basal part of last ant. seg. on other hostplants4
- 4(3) Apical part of rostrum, 1,2-1,5 times as long as 2nd joint of hind tarsus and 3rd ant. seg. 1,0-1,1 times as long as siphunculi. On *Centarea spp.* U. jaceae
 - Apical part of rostrum 1,3-1,7 times as long a second joint of hind tarsus and 3rd ant. seg. 0,9-0,98 times as long as siphunculi On other hostplants5
- 5(4) Processus terminalis of last ant. seg. 5,5-6,4 times as long as basal part

of the same seg. and ult rostr. eg. 1,4-17 times as long as second joint of hind tarsus, On *Cirsium spp.* Carduus, Onopordon, Thevenottia.

U. aenus

Processus terminalis of last ant. seg. 4,5-5,0 times as long as basal part of the same seg. and apical part of rostrum 1,3-1,5 times as long as second joint of hind tarsus. On *Carthamus oxycantha*.

U. carthami

6(3) CU 1 and CU2 of fore wings with brown field, basal part of 3rd ant. seg. pale 7

CU1 and CU2 of fore wings without brown brown field, the whole length of 3rd ant. seg. brown to dark brown. 8

7(6) Number of rhinariae on 3rd ant. seg. 28-35. 2nd joint of hind tarsus almost equal to basal part of VI.ant. joint, secondary hairs on apical joint or rostrum 7-8. On *scorzonera tortuosissima*.

U. tortuosissimae

Number of secondary rhinariae on 3rd ant. seg. 41-54, second joint of hind tarsus 0,82-0,90 times as long as basal part of VI. ant seg., secondary hairs on ult rostr joint. 6,7. On *Hymenocephalus rigidus*.

U. hymenocephli

8(6) Cauda dark, abdominal dorsum without distinct sclerites, siphunculi 1,3-1,4 times as long as cauda. On *Centaurea virgata subsp. squanosa*.

U. virgatae

Cauda light, abdominal dorsum mostly with distinct sclerites bearing 1-3 hair. Siphunculi more than 1,5 time of the cauda length On other hostplants. 9

9(8) Siphunculi at most 0,3 of the body length and apical joint of rostrum longer than 2nd joint tarsus. On *Gundelia tunifortii*

U. iranicum

Siphunculi longer than 0,3 of the body length, apical joint of rostrum usually shorter or equal to the 2nd joint of hind tarsus, if it is longer, then

- not on *Gundelia*.10
- 10(9) Number of secondary rhinariae on 3rd ant. seg. 17-22, medial part of siphunculi pale. On *Tussilago farfara*. *U. tussilaginis*
- Number of secondary rhinariae on 3rd ant. seg. at least 30, siphunculi brown to black . On other hostplants.11
- 11(10) Antesiphuncular sclerites absent. On *Sonchus* spp and *Lactuca* spp
U. sonchi
- Antesiphuncular sclerites well developed . On different hostplants.12
- 12(11) Reticulated part covering 35-40% of the whole length of siphunculi, $\frac{1}{3}$ basal part of siphunculi pale, On *Lactuca* spp. *U. bielawski*
- Reticulated part covering 20-45% of the whole length of siphunculi which is completely brown. On other hostplants13
- 13(12) Cauda short, as long as distance between 2 antennal bases or shorter.
On *Tanacetum partenifolium* *U. tanaceti*
- Cauda longer than distance between 2 antennal bases. On other hostplants14
- 14(13) Body length 3, 94-4, 32 mm, tibiae black, first tarsal joint with 5:5:5 setae. Apical joint of rostrum 0,250-0,275 mm. On *serratula quinquefolia*.
U. caspicum
- Body length at most 3,8 mm, medial part of tibiae pale, first tarsal joint with 3:3:3 or 4:4:4 setae, apical part of rostrum less than 0,25 mm. On other hostplants15
- 15(14) Abdominal dorsal sclerites mostly with 3 hairs, apical joints of rostrum 1,4-1,6 times as 2nd joint of hind tarsus. On *Cirsium* spp
U. cirsii
- Abdominal dorsal sclerites with one, rarely two hairs, apical joint of rostrum at most 1,3 times as long as 2nd joint of hind tarsus. on other hostplants16

- 16(15) Apical joint of rostrum equal to or shorter than 2nd joint of hind tarsus.
17
- Apical joint of rostrum longer than 2nd joint of hind tarsus.....18
- 17(16) Number of secondary hairs on ult. rost. joint 5-6. on *Chondrilla juncea*.
 U. chondrillae
- Number of secondary hairs on ult. rost. joint 7-10. On *Crepis micrantha*
 U. hypochoeridis
- 18(16) Caudal hairs 12-22 in number, apical joint of rostrum 1,25-50 times as
 long as basal part of VI. ant. seg. On *Picris sp.*
 U. picridis
- Caudal hairs 18-30 in number, apical joint of rostrum 1, 0-1,2 times as
 long as basal part of VI. ant joint . On *Cichorium spp.* *Crepis spp.*
Tragopogon sp. and *Taraxacum syriacum.* U. cichorii

References

- BODENHEIMER, F.S. & E. SWIRSKI 1957: The Aphidoidea of the middle
 East.
- BÖRNER, K. & K. HEINZE 1957: Aphidina-Aphidoidea in: P. Sorauer.
 Handb. Pflanzenkr. V. Band.
- HILLE RIS LAMBERS, D. 1939 : Contribution to a monograph of the
 Aphididae of Europe, II. Temminckia 4, 1-134
- HOLMAN, J. 1965: Description of two new Dactynotus species (Homoptera :
 Aphididae) Acta. ent. boh., 62: 195-201
- « « 1974: Two new Uroleucon species (Homoptera: Aphididae)
 from the USSR. Acta ent. boh., 71: 20-26
- « « 1975: Aphids of the genus Uroleucon from Mongolia) Homoptera :
 Aphididae), Acta ent. boh., 72: 171-183
- « « 1980: Uroleucon iranicum sp.n. (Homoptera: Aphididae) from
 Iran. Acta ent. boh., 77: 332-337

- « « 1981a: One new and one little known Mediteranean Uroleucon species on Inula (Homoptera: Aphididae), Acta ent. boh., 78: 43-52.
- « « 1981b: A review of Uroleucon species (Homoptera: Aphididae) confined to Asteraceae: Inulae. Acta ent. boh., 78: 162-179
- LAMPEL, G. 1974: Die Blattlause (Aphidina) des Botanischen Gartens Freiburg/Schweiz. Bull. soc. Frib. sc. Nat. 63(2), 59-137
- « « 1980: Fur die Schweiz neu Blattlaus-Arten (Homoptera: Aphididae). Mitt. Schw. ent. Ges. 53: 229-281
- « « 1983: Fur die Schweiz neu Blattlaus-Arten)Homoptera: Aphididae). Mitt. Schw. ent. Ges, 56: 125-162
- MEIER, W. 1975: Ergänzungen zur Blattlausfauna der Schweiz II (Homoptera Aphididae). Mitt. Schw. ent. Ges. H. 3-4 416-419
- MIYAZAKI, M. 1971: A revision of the tribe Macrosiphini of Japan (Homoptera: Aphididae Insecta Matsumarana, 34, 1-246
- NARZIKULOV, M.N. & SH. A. UMAROV 1969: Aphids of) Tadzhhikistan

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