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Three new species of *Cinara*, together with a preliminary list of the species of this genus known from Alaska (Aphididae, Homoptera)

by

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Cinara alaskana, n.sp.

APTEROUS VIVIPAROUS FEMALE. — Length from vertex to end of cauda 2.20 mm.

Head. — Width across eyes 0.82 mm. Color of head dusky brown. Median transverse suture indistinct. Antennal segment III pale dusky, segment IV dusky towards apex, segment V almost uniformly dusky, segment VI dusky throughout. Lengths of antennal segments as follows: III: 0.58; IV: 0.20; V: 0.26; VI: 0.17 + 0.02 mm. Antennal segment III without sensoria; segment IV in holotype with one small secondary sensorium, in paratype specimens without sensoria; segment V with only a primary sensorium. Hairs on antennal segment III more numerous and much longer on anterior margin of segment than on posterior margin, upstanding, varying in length from 0.08—0.10 mm. Unguis short but pointed. Eyes small, shallow; ocular tubercles present, but poorly developed, and easily overlooked. Hairs on dorsum of head numerous, but not present along posterior margin, varying from 0.9 to 0.11 mm in length. Rostral segments 2, 3, 4 and 5 combined 1.98 mm in length; last three segments of the rostrum 0.30, 0.24 and 0.05 mm long. Hairs on fourth rostral segment confined to either side of groove.

Thorax. — Mesosternal tubercle lacking. Lengths of pro-, meso- and metathoracic femora as follows: 1.05, 0.99 and 1.47 mm. Lengths of pro-, meso- and metathoracic tibiae as follows: 1.42, 1.50 and 2.32 mm. First metatarsal segment 0.13 mm, second metatarsal segment 0.32 mm. Hairs on metathoracic tibiae numerous, set at an angle of about sixty degrees, on outer margin in length varying

from 0.10—0.11 mm; hairs on inner margin more numerous and not quite so long. First metatarsal segment with about eleven hairs on ventral surface.

Abdomen. — Diameter of cornicles 0.39 mm. Cornicles dark brown. Hairs on cornicles quite uniformly distributed over surface. Anterior to the cornicles there are small irregular pigmented areas. Hairs on dorsum of abdomen about 0.12 mm in length; hairs on ventral surface of abdomen about half as long with some hairs much shorter. Cauda and anal plate with a spinulose surface, both structures with few coarse hairs. Pigmented areas anterior to cauda very wide, close together, with the hairs not confined to a row.

Discussion. In PALMER's key to the genus *Cinara* in "Aphids of the Rocky Mountain Region" this species keys to couplet number 17 and cannot be keyed beyond couplet 19. In my key to the species on *Picea* (*Great Basin Naturalist* 21: 48—50, 1961) this species keys to couplet number 21. It is not *C. obscura* Bradley or *C. jucunda* Hottes, although it is closely allied to that species. It differs from *jucunda* in being much more robust, in having all measurements except those for the cornicles larger. It may at once be distinguished from *jucunda* by the absence of sensoria on antennal segment III and only the primary sensorium on antennal segment V.

Holotype: apterous viviparous female, deposited in U.S. National Museum. Taken at Fairbanks, Alaska, June 1957, by R. H. WASHBURN. Host not recorded, but without question *Picea* sp.

Cinara glacialis n.sp.

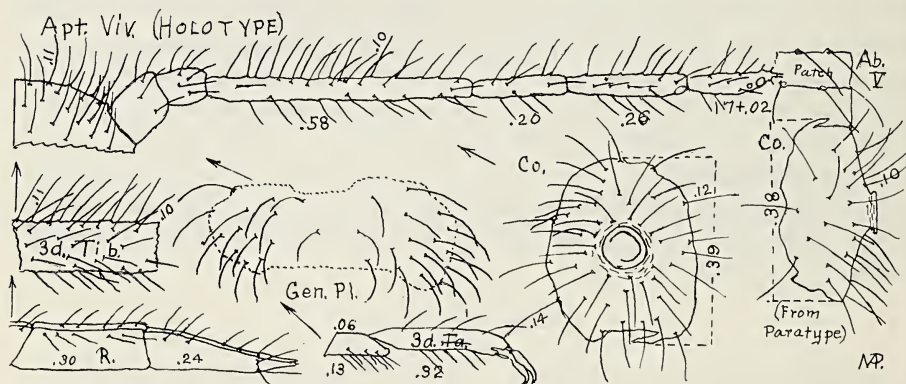
APTEROUS VIVIPAROUS FEMALE. — Length from vertex to end of cauda approximately 2.70 mm.

Head. — Dusky brown, mounted in such a manner that the width of head cannot be determined. Antennal segments I and II quite hairy; some hairs on the second segment 0.08 mm in length. Length of antennal segments as follows: III: 0.50; IV: 0.22; V: 0.27; VI: 0.18 + 0.05 mm. Antennal segment III free of sensoria, segment IV with only primary sensorium, antennal segment V with one secondary and the primary sensorium. Antennal hairs quite upstanding, fine, pale, those on anterior margin of segment III 0.16 mm in length. Antennal segment VI moderately imbricated. Unguis rather thin and sharply pointed. Ocular tubercles only moderately well developed. Dorsum of head with coarse hairs which vary in length from 0.12 to 0.16 mm.

Thorax. — Mesosternal tubercle absent. Lengths of pro-, meso- and metathoracic femora as follows: 0.86, 1.12, and 1.23 mm. Lengths of pro-, meso-, and metathoracic tibiae as follows: 1.09, 1.35 and 1.87 mm. Metatarsal segments 0.13 and 0.30 mm. long. Hairs on outer margin of metathoracic tibiae 0.16 mm in length; these hairs are slightly longer, fewer and more upstanding than the hairs on the inner margin. Hairs on ventral surface of first metatarsal segment not all present, when in full number perhaps 16. Hairs on dorsal surface of second metatarsal segment longer than those on the ventral surface. All femora rather pale dusky. Metathoracic tibiae with short distance at base dusky brown, this followed by a pale area which extends well beyond middle; remainder of tibiae brown.

Abdomen. — Cornicles dusky brown, 0.50 mm across, provided with hairs which are evenly distributed over the surface, and which vary in length from 0.08 to 0.12 mm. All hairs on the cornicles of the same texture. Hairs on dorsum of abdomen moderately abundant, rather coarse, varying in length from 0.16 to 0.18 mm. Hairs on ventral surface of abdomen more numerous than hairs on dorsum, but somewhat shorter. Pigmented areas anterior to cauda narrow, with hairs not confined to the posterior margin.

Discussion. In PALMER's key to the genus *Cinara* in "Aphids of the Rocky Mountain Region" this species keys more nearly to *C. sibiricae* (Gill. & Palmer) than to *C. sabiniae* (Gill. & Palmer), but it has no close affinity to either species. In my key to the species of *Cinara* which have *Picea* for host this species keys to



Top to bottom: *Cinara alaskana* n.sp., *Cinara glacialis* n.sp. and *Cinara yukona* n.sp.

C. palmerae (Gill.), another species with which it has no close affinity. From *C. sitchensis* Hottes it differs in much longer hairs on the tibiae and antennae, much longer antennal segments, and much longer terminal rostral segments.

Holotype: apterous viviparous female, deposited in the U.S. National Museum. Taken on *Picea sitchensis*, June 28, 1957 at Juneau, Alaska by G. L. DOWNING.

Cinara yukona, n.sp.

ALATE VIVIPAROUS FEMALE. — Length from vertex of head to end of cauda 3.37 mm. Color in cleared mounted specimen as follows. Head and thorax dark dusky brown, abdomen yellowish, cornicles dusky. First and second antennal segments concolorous with head. Third antennal segment shading quickly from pale at the base to dusky at the end. Remaining antennal segments dusky. All femora with basal and apical portions paler than middle portion. All tibiae with a short basal region brown, followed by a long pale region which shades to dusky at the apex. Tarsal segments brown.

Head. — Width through the eyes 0.72 mm. Length of antennal segments as follows: III: 0.46; IV: 0.21; V: 0.28; VI: 0.16 + 0.05 mm. Primary and secondary sensoria large, with wide rims. Marginal sensoria in a row, the apical sensorium far forward and large. Unguis rather pointed. Antennal segments I and II with a moderate number of hairs. Vertex with numerous fine hairs which vary in length from .08—.10 mm in length. Rostrum reaching to end of metathoracic coxae; last three segments with the following lengths: 0.22, 0.20 and 0.10 mm. Length of rostrum to zone of junction 1.38 mm. Ocular tubercles well developed.

Thorax. — Lateral lobes of thorax with lateral portions free from hairs. Median posterior lobe of thorax with numerous hairs. Lengths of prothoracic femora and tibiae 0.97 and 1.35 mm. Lengths of metathoracic femora and tibiae 1.35 and 2.02 mm. Lengths of metatarsal segments 0.12 and 0.42 mm. All femora with numerous long fine hairs, the hairs on the metathoracic femora 0.25 mm in length. All tibiae with numerous long upstanding hairs, those on the metathoracic tibiae varying from 0.15—.18 mm in length, with a very few hairs as short as 0.08 mm. Hairs on inner margin of tibiae less upstanding than those on outer margin, more numerous and not quite as long. Hairs on ventral surface of first metatarsal segment about sixteen in number. Most of the wings missing.

Abdomen. — Dorso-lateral portions of the abdomen with two rows of small wax pore plates. Cornicles with diameter of 0.48 mm. Outer margin of the cornicles irregular; orifice acentric, closer to the posterior margin. Hairs on cornicles fine, varying in length from 0.11 to 0.14 mm, less numerous near margin. Hairs on dorsum of abdomen not numerous, rather coarse, about 0.12 mm in length. Hairs on ventral surface of abdomen numerous, varying in length from 0.06 to 0.12 mm. Pigmented creas anterior to cauda with coarse hairs which extend to the middle of the areas. Cauda with hairs confined largely to the posterior margin, rest of cauda with a coarse spinulose surface. Genital plate rather rounded with the middle region almost free from hairs.

Discussion. This species is closely allied to *C. glehna* (Essig) from which it differs in longer antennal segments, longer femora and tibiae, longer second

tarsal segments, longer rostrum, the shape of the genital plate, and the less extensively pigmented tibiae.

Holotype: alate viviparous female, in my collection. Taken on white spruce (*Picea glauca*), Gulkana, Alaska, July 21, 1961 by myself.

Cinara bonica Hottes

The host of this species is not definitely known, but *Picea* was suggested in the original description. I looked for this species along the Gulkana river but failed to find it. *Picea glauca*, and *Picea mariana* are the only Coniferae in this region, and one or the other, or perhaps both must be hosts of this species.

Cinara bonita Hottes

Remarks under *C. bonica* apply to this species.

Cinara caliginosa Hottes

I took this species near Gakona on *Picea glauca*. The specimens were light brown.

Cinara fornacula Hottes

This species was quite common on both *Picea glauca* and *P. mariana*. I took it at Haines, Juneau, Tok Junction, Paxson and on the Kenai Peninsula. Most specimens had the apices of the tibiae much darker than the rest of the tibiae.

Cinara nimbata Hottes

This species is widely distributed in Alaska. I took it at Tok Junction, Paxson and on the Kenai Peninsula.

Cinara rara Bradley

Two specimens were taken dead, both with internal parasites, but they appear to be this species. Tok Junction, on *Picea mariana*.

Cinara vandykei (Wilson)

This species was quite common in Alaska. No specimens were metallic black, all being more or less ash-colored. It was taken once about twenty miles from Anchorage on the Cook Inlet, on *Picea glauca*, but not recognized as such when alive, because the color was pinkish red.

Cinara sp.¹⁾

G. A. BRADLEY is to describe this species from material taken in Canada. It is allied to *C. vandykei* (Wilson). I have one alate specimen which may or may not be this species. It has the tibiae with extensive light areas, the hairs on the cornicles are not all the same shape and the tarsal segments differ in length. My specimens were taken at Tok Junction, Gakona and Homer on the Kenai Peninsula.

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¹⁾ Since described as *Cinara nigripes*.