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HOKKAIDO UNIVERSITY

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SOME NEW APHIDS FROM HOKKAIDO.

By

MATSUJI HORI.

About one hundred and forty species of Aphididae have been recorded from Hokkaido by Prof. S. MATSUMURA^(a), Mr. R. TAKAHASHI^(b) and the author^(c). Yet there are not a few species that have escaped from the informations hitherto published. Examinations on them prove some to be undoubtedly new to science. The present paper is intended to report these members.

The author wishes to express his sincere thanks to Prof. S. MATSUMURA who has helped and encouraged me throughout my work with many valuable suggestions and allowed me also the privilege of the free use of his collections. My obligation is also due to Mr. S. KUWAYAMA who has had the kindness to aid me in many ways in the preparation of this paper.

1. *Acaudus rhamni* HORI, n. sp. (Pl. VI, fig. 1-9)

(Alate viviparous female).—General colour shiny green. Head, eyes, antennae, cornicles and cauda black. Legs green with the apical one-third of the femora, the apices of tibiae and the entire tarsi, which are blackish. Wing-veins and stigma brownish and the third oblique of the fore-wing slightly clouded. Abdomen with a large blackish area at the middle of the dorsum and three pair of marginal dark spots on the segments. Head large, slightly elevated at the base of each antenna. Antennae longer than the body, imbricated, with several fine hairs. The usual primary and accessory sensoria are present. Secondary circular sensoria are as follows: Joint III with 39-52 irregularly sized sensoria, not in a regularly row, over the whole length; IV with 5-14, not in a straight row, scattered on the middle; V with 0-3 on the basal part.

(a) S. MATSUMURA:—A List of the Aphididae of Japan, with Description of New Species and Genera.

[Jour. Coll. Agr. Tohoku Imper. Univ., Sapporo Japan, Vol. VII, pt. 6, pp. 351-414 (1917)].

—:—Synopsis of Pemphigidae of Japan. [A Collection of Essays for Mr. YASUSHI NAWA, pp. 39-94 (1917)].

—:—New Aphidinae of Japan. [Trans. Sapporo Nat. Hist. Soc. Vol. VII, pt. 1, pp. 1-22 (1918)].

—:—New Species and Genera of Callipterinae of Japan. [Trans. Sapporo Nat. Hist. Soc. Vol. VII, pt. 2, pp. 99-114 (1919)].

(b) R. TAKAHASHI:—Japanese Aphididae 1, pp. 19-30 (1921).

(c) M. HORI:—Biological Studies of Aphididae of Hokkaido. [Hokkaido Agric. Exp. Stat., Rept. No. 17, pp. 1-47 (1926)].

Antennal measurement:

No.	III	Sensoria on III	IV	Sensoria on IV	V	Sensoria on V	IV
(1)	0.581	39	0.413	9	0.450	1	0.844(0.113+0.731)
	0.600	50	0.413	5	0.450	1	0.825(0.113+0.712)
(2)	0.563	44	0.413	9	0.394	1	0.834(0.103+0.731)
	0.544	50	0.394	9	0.338	0	0.806(0.103+0.703)
(3)	0.600	40	0.413	8	0.413	1	0.863(0.113+0.750)
	0.600	41	0.413	8	—	—	—
(4)	0.448	42	0.375	13	0.356	0	0.769(0.103+0.666)
	0.506	45	0.375	13	0.375	2	0.769(0.103+0.666)
(5)	0.619	52	0.469	13	0.450	0	0.863(0.103+0.760)
	0.630	51	0.469	14	0.431	3	0.863(0.103+0.760)
(6)	0.630	51	0.488	10	0.422	0	0.863(0.103+0.760)
	0.630	50	0.488	10	0.431	0	0.844(0.103+0.741)

Rostrum extending beyond the 2nd coxae. Wing-venation normal. Cornicles cylindrical, imbricated, slightly broadening towards the base. Cauda and anal plate reduced to a mere broadly rounded structure, with several long stout hairs.

Measurements: Body length 1.931–2.025 mm. (av. 1.969 mm.). Body-width 1.069–1.125 mm. (av. 1.088 mm.). Head-width 0.225 mm. Antennae 2.427–2.588 mm. (av. 2.450 mm.). Fore-wing 3.188 mm. Cornicles 0.319–0.338 mm. (av. 0.328 mm.). Cauda 0.169 mm.; width at its base 0.188 mm. Hind-tarsi 0.130 mm.

(Apterous viviparous female)—General colour shiny green. Head deeper in colour. Eyes black. Antennae green with the apical half of III, the apical one-third of IV and V, and VI, which are blackish. Cornicles black. Cauda dark green. Abdomen with a large blackish area occupying the larger part of the dorsum as in the alate female, but no marginal spot.

Head concave, somewhat elevated at the base of each antenna. Antennae longer than the body, imbricated, with a few hairs. Primary and accessory sensoria usually present. Joint III with 3–7 secondary circular sensoria in a row at the basal part of the joint; IV with no sensoria.

Antennal measurement:

No.	III	Sensoria on III	IV	V	VI
(1)	0.581	3	0.450	0.375	0.844(0.113+0.731)
	0.600	3	0.488	0.394	0.919(0.113+0.806)
(2)	0.581	5	0.450	0.338	0.863 0.113+0.750)
	0.591	5	—	—	—
(3)	0.488	6	0.431	0.375	0.788(0.113+0.675)
	0.600	7	0.488	0.467	0.806(0.113+0.693)

(4)	0.619	6	0.450	0.450	0.750(0.113+0.638)
	0.600	7	0.413	0.394	0.750(0.113+0.638)
(5)	0.600	6	0.488	0.450	0.881(0.131+0.750)
	0.600	7	0.488	0.450	0.863(0.122+0.741)

Rostrum reaching somewhat beyond the third coxae. Cornicles, cauda and anal plate almost similar to those of the alate viviparae.

Measurements: Body-length 1.875–2.063 mm. (av. 1.969 mm.). Body-width 1.406 mm. Antennae 2.288–2.606 mm. (av. 2.460 mm.). Cornicles 0.356–0.375 mm. (av. 0.360 mm.). Cauda 0.047 mm.; width at its base 0.206 mm. Hind-tarsi 0.121–0.150 mm. (av. 0.131 mm.).

(Alate male)—General colour pale greenish yellow. Head deep brown. Eyes dark red. Antennae black. Rostrum dark yellow with blackish apex. Legs dark yellow with the apical one-half of each of the femora and tibiae, and the entire tarsi, which are blackish. Cornicles black. Abdomen with four or five blackish bands on the dorsum. Antennae longer than the body, with a few spines. Secondary sensoria circular, of various sizes, on the joints III, IV and V, scattered along the whole length in an irregularly row.

Antennal measurement:

III	Sensoria on III	IV	Sensoria on IV	V	Sensoria on V	VI
0.525	61	0.488	48	0.413	23	0.919(0.113+0.806)
0.562	76	0.488	49	0.431	31	0.938(0.113+0.825)

Rostrum reaching to the 3rd coxae. Cornicles rather slender than those of the alate viviparous female, 2 times as long as the hind tarsi, and as long as the head-width between the eyes. Cauda and anal plate much similar to those of the alate viviparae.

Measurements: Body length 1.931 mm. Body-width 0.881 mm. Antennae 2.531–2.606 mm. (av. 2.569 mm.). Fore-wing 2.906 mm. Cornicles 0.206 mm. Cauda 0.186 mm. Hind-tarsi 0.113 mm.

Author found one apterous male copulating with an apterous oviparous female.

(Apterous oviparous female)—General colour pale yellowish green. Head dark yellow to yellowish brown. Eyes reddish brown. Antennae and legs pale yellow; the apical one-half of the joint III, the apices of IV and V, the entire VI, the apices of the femora and tibiae, and the entire tarsi, black. Cornicles black. Abdomen with a very large dark area on the dorsum as in the viviparous female. Body narrow and oblong. Antennae longer than the body, imbricated, with the usual primary sensoria, but no secondary one.

Antennal measurement:

No.	III	IV	V	VI
(1)	0.281 0.281	0.281 0.281	0.263 0.244	0.563(0.094+0.469) —
(2)	0.263 0.263	0.290 0.290	0.263 0.263	— 0.544(0.085+0.459)

Hind tibiae moderately swollen, with numerous sensoria scattered along the whole length. Rostrum large, reaching beyond the third coxae. Cornicles and cauda almost similar to those of the viviparous female, the former being two-thirds the length of joint III of the antenna.

Measurements: Body-length 1.181–1.313 mm. (av. 1.247 mm.). Body-width 0.563 mm. Antennae 1.519–1.556 mm. (av. 1.540 mm.). Cornicles 0.188 mm. Cauda 0.056 mm.; width at its base 0.113 mm. Hind-tarsi 0.094 mm.

Food-plant—*Rhamnus japonica* (*Kuroumemodoki*).

Locality—Sapporo (at the Hokkaido Agr. Exp. Stat.).

Observations—This green aphid occurs in a large colony on the leaves, tender shoots and hard stems of *Rhamnus japonica*, causing a considerable curl of the foliage.

This species is found on the same host plant all the year round. The eggs which are deposited on the twigs, begin to hatch early in May and the stem-mothers deposit the living young in the latter part of this month. The first generation is wingless and in the second generation there may be seen two types of winged and wingless. Afterwards, the winged forms appear in each viviparous generation, but their percentage to the wingless insects generally lower and decreases until the sexuales occur. Then, about the middle of September, the male and oviparous forms appear and lay eggs.

2. *Acaudus jozankeanus* MATSUMURA et HORI, n. sp. (Pl. VI, fig. 10-19)

(Alate viviparous female) (described from the preserved material in alcohol)—General colour yellowish brown. Antennae of the ground colour except the apical three-fourths of III, the apices of IV and V, and the entire VI, which are blackish. Apical one-half of the femur, the apex of the tibia, and the entire tarsi, black. Third oblique vein of the fore-wing clouded. Abdomen with a large blackish patch at the middle of the dorsum as that of *Acaudus rhamni*. Body and antennae somewhat hairy. Antennae one and a half times as long as the body, imbricated; joint III of the antenna rather broader at the middle; V and VI with the usual primary sensoria. Secondary sensoria are as follows: Segment III with 36–50 circular sensoria, irregular in size, scattered irregularly over the whole length; IV with 12–20 regularly sized sensoria located almost in a row; V with 0–2 sensoria on the basal part.

Antennal measurement:

No.	III	Sensoria on III	IV	Sensoria on IV	V	Sensoria on V	VI
(1)	0.563	45	0.581	20	0.488	1	0.938(0.094+0.844)
	0.563	40	0.581	18	0.469	1	1.032(0.094+0.938)
(2)	0.544	36	0.563	14	0.469	0	1.013(0.094+0.919)
	0.581	50	0.581	12	0.506	1	1.032(0.094+0.938)
(3)	0.544	40	0.563	18	0.469	1	1.032(0.094+0.938)
	0.525	42	0.563	20	0.450	0	1.013(0.094+0.919)
(4)	0.544	47	0.563	14	0.506	2	0.919(0.094+0.825)
	0.544	50	0.581	18	0.506	1	1.013(0.094+0.919)
(5)	0.563	48	0.581	18	0.438	1	0.956(0.094+0.862)

Rostrum reaching near the third coxae. Wing-venation normal. Cornicles cylindrical, the same width throughout, imbricated. Cauda and anal plate rounded, with many stout hairs.

Measurements: Body-length 1.819–1.894 mm. (av. 1.875 mm.). Body-width 0.938 mm. Antennae 2.738–2.869 mm. (av. 2.794 mm.). Fore-wing 3.655 mm. Cornicles 0.356–0.394 mm. (av. 0.375 mm.). Cauda 0.075 mm.; width at its base 0.131 mm. Hind tarsi 0.113 mm.

(Apterous viviparous female)—General colour yellow. Head yellowish brown. Antennae yellow; joints I and II concolorous with the head; the apical half of the joint III, each apical one-third of IV and V, and VI, black. Eyes reddish brown. Abdomen with a large blackish patch on the dorsum as that of the alate form. Cornicles, cauda and rostrum yellow. Legs yellow with the apices of the femora and tibiae, and the entire tarsi, which are blackish. Head concave, slightly elevated at the base of each antenna, with short hairs. Antennae longer than the body, imbricated. The usual primary sensoria present. Joint III with 14–21 secondary circular sensoria along nearly the whole length.

Antennal measurement:

No.	III	Sensoria on III	IV	V	VI
(1)	0.563	19	0.525	0.469	0.938(0.103+0.835)
	0.563	17	0.544	0.450	0.900(0.113+0.787)
(2)	0.525	18	0.488	0.450	0.919(0.113+0.806)
	0.525	15	0.469	0.431	0.900(0.113+0.787)
(3)	0.544	14	0.450	0.413	0.881(0.103+0.778)
	0.525	19	0.450	0.394	0.919(0.113+0.806)
(4)	0.544	18	0.506	0.450	0.938(0.113+0.825)
	0.544	16	0.483	0.431	0.938(0.113+0.825)
(5)	0.563	21	0.525	0.450	0.975(0.113+0.862)
	0.563	20	0.525	0.440	0.975(0.113+0.862)

Cornicles cylindrical, imbricated, slightly tapering towards the apex. Cauda and cornicles similar to those of the alate form.

Measurements: Body-length 1.875–2.156 mm. (av. 1.988 mm.). Body-width 1.219–1.256 mm. (av. 1.220 mm.). Antennae 2.475–2.681 mm. (av. 2.569 mm.). Cornicles 0.319–0.338 mm. (av. 0.331 mm.). Cauda 0.047 mm.; width at its base 0.188 mm. Hind-tarsi 0.131 mm.

Food-plant—*Polygonum sachalinense* (*Ô-itadori*).

Locality—Jozankei (12-IX-'18 Prof. S. MATSUMURA). Maruyama (15-VIII-'24; 9-IX-'24 Mr. I. ISE).

Observations—This species feeds on the tender shoots and leaves of *Polygonum sachalinense*. In August apterous form only present, but in September many alate forms are found.

Remarks—The present species shows a superficial resemblance to *Neolachnaphis itadori* SHINJI which may be referred to the genus *Acaudus* [Zool. Mag. (Dobutsugaku-zasshi) XXXVI, p. 353, 1924], but it clearly differs from the latter by the larger number of sensoria on the antennal joints III and IV, and in the high ratio of the length of IV to III.

Acaudus rhamni and *A. jozankeanus* are also closely related to each other, but we can distinguish them in the following points:

A. rhamni

A. jozankeanus

Alate viviparous female

- | | |
|---|---|
| 1). Antennal joint III longer than IV, about 1.4 times as long as the latter. | Joint III rather shorter than IV. |
| 2). Joint IV with 5–14 secondary sensoria. | Joint IV with 12–20 secondary sensoria. |

Apterous viviparous female

- | | |
|--|---|
| 3). Joint III with 3–7 secondary sensoria on the basal half. | Joint III with 14–21 secondary sensoria along the whole length. |
| 4). Body green and cornicles black. | Body and cornicles yellow. |

3. *Anuraphis japonica* HORI, n. sp. (Pl. VI, fig. 20–26)

(Alate viviparous female)—General colour dark greenish brown, covered with white powder. Rostrum pale greenish brown with blackish apex. Legs pale greenish brown, except the apical one-third of the femora, one-fourth of the tibiae, and the entire tarsi, which are blackish. Wings with brownish stigma and veins. Cornicles and cauda dark green. Head without prominent antennal tubercles, with about 6 hairs. Antennae subequal to the body; joint

III with 65-85 irregularly sized circular sensoria scattered over the whole length V and VI with the usual primary sensoria.

Antennal measurement :

No.	III	Sensoria on III	IV	V	VI
(1)	1.031 1.050	84 78	0.469 0.450	0.356 0.333	0.488(0.132+0.356) 0.525(0.141+0.384)
(2)	1.050 1.069	85 80	0.450 0.488	0.356 0.356	0.600(0.150+0.450) 0.638(0.150+0.488)
(3)	1.069 0.994	70 65	0.488 0.469	0.338 0.356	0.619(0.150+0.469) 0.619(0.150+0.469)
(4)	0.881 —	67 —	0.431 —	0.312 —	0.600(0.150+0.450) —
(5)	0.900 —	82 —	0.450 —	0.337 —	0.600(0.150+0.450) —

Rostrum reaching to the 2nd coxae. Legs moderately long and thick, with many fine hairs. Wing-venation normal. Cornicles long, subequal to joint IV of the antenna, thick, imbricated, tapering towards the apex. Cauda short, not as long as the width. Cornicles with a few stout hairs, width subequal to the basal part of joint VI of the antenna. Anal plate flat, with many long hairs.

Measurements: Body-length 2.588-3.130 mm. (av. 2.813 mm). Body-width 1.219-1.238 mm. (av. 1.228 mm.). Antennae 2.550-2.756 mm. (av. 2.644 mm.). Fore-wing 3.468 mm. Cornicles 0.413-0.506 mm. (av. 450 mm.). Cauda 0.113 mm. Hind tarsi 0.131 mm.

(Apterous viviparous female)—General colour dark reddish, very pulverulent. Head, eyes, legs and the sides of the body pale reddish brown. Antennae pale yellowish brown, except the apices of III, IV and V, and the entire VI, which are blackish. Rostrum pale brown with blackish apex. Cornicles pale yellowish brown. Cauda dark reddish. Head concave, with a few fine hairs. Antennae a little shorter than the body, III very long, with 25-34 circular secondary sensoria located on the greater part excepting the apical portion. The usual primary sensoria occur on joints V and VI.

Antennal measurement :

No.	III	Sensoria on III	IV	V	VI
(1)	0.806 0.806	26 25	0.375 0.375	0.319 0.319	0.544(0.140+0.404) 0.469(0.121+0.348)
(2)	0.900 0.938	30 34	0.394 0.394	0.319 0.338	0.450(0.140+0.310) 0.478(0.121+0.357)
(3)	0.825 0.825	30 28	0.394 0.356	0.319 0.263	0.525(0.140+0.385) 0.431(0.121+0.310)
(4)	0.815 0.806	26 27	0.384 0.384	0.319 0.319	0.450(0.131+0.319) —

Rostrum reaches between the second and third coxae. Legs long, with several hairs on the tibiae; hind-tibiae twice as long as the basal part of joint VI of the antenna. Cornicles similar to the alate form in appearance, slightly longer than the joint VI of the antenna, width at the base about as long as the basal part of VI. Cauda and anal plate almost the same as those of the alate form.

Measurements: Body-length 3.056-3.280 mm. (av. 3.169 mm.). Body-width 1.688-1.875 mm. (av. 1.781 mm.). Antennae 2.081-2.456 mm. (av. 2.269 mm.). Cornicles 0.563-0.638 mm. (av. 0.600 mm.). Cauda 0.131 mm.; width at its base 0.169 mm. Hind tarsi 0.263 mm.

(Alate male)—Generally similar to the alate viviparous female, although rather smaller and slender than the latter. Antennae longer than the body; secondary sensoria exist on the joints III, IV and V along the whole length.

Antennal measurement:

III	Sensoria on III	IV	Sensoria on IV	V	Sensoria on V	VI
0.525	54	0.300	9	0.263	10	0.356(0.113+0.243)
0.525	50	0.300	8	0.244	9	0.347(0.103+0.244)

Rostrum reaching near the third coxae. Cornicles somewhat thicker than those of the alate viviparous female and the width at the base being one-third of the length.

Measurements: Body-length 1.406 mm. Body-width 0.656 mm. Antennae 1.584-613 mm. (av. 1.598 mm.). Cornicles 0.188-0.197 mm. (av. 0.192 mm.). Hind-tarsi 0.169 mm.

(Apterous oviparous female)—General colour greenish brown. Antennae pale yellow, except the apices of III, IV and V, and all VI, which are dusky. Eyes dark red. Cornicles pale yellow. Cauda greenish brown. Antennae two-thirds the length of the body, somewhat hairy; joint III slightly shorter than VI, with one secondary sensoria on the basal part.

Antennal measurement:

III	Sensoria on III	IV	V	VI
0.319	1	0.188	0.188	0.338(0.103+0.235)
0.319	1	0.188	0.188	0.346(0.103+0.243)

Rostrum reaches between the second and third coxae. Legs thick, long, hairy; hind tarsi as long as the joint IV of the antenna; hind tibiae thick, with the numerous circular sensoria. Cornicles cylindrical, broadening towards the base, imbricated, 1.5 times as long as the joint IV of the antenna.

Measurements: Body-length 1.838 mm. Body-width 0.844 mm. Antennae 1.200-1.208 mm. (av. 1.204 mm.). Cornicles 0.281 mm. Hind-tarsi 0.188 mm.

Food-plant—*Lonicera morrowii* (*Kinginboku*).

Locality—Sapporo (at the Hokkaido Agr. Exp. Stat. and the Botanical Garden of the Hokkaido Imp. Univ.).

Observations—This species feeds on the tender shoots, twigs and rarely young fruits. The white masses of this insect on the twigs are very conspicuous as in the case of the woolly apple aphid.

In the fall and early winter, the eggs are laid on the twigs of *Lonicera morrowii* and they hatch in the following spring. The author observed that the mature stem-mothers deposit the living young on the tender shoots in the latter part of May. The first generation is wingless and a moderate number of the winged forms appear in the second generation and they are produced in each generation until finally all the insects become the winged forms, which migrate to an unknown summer host. On the primary host-plant, the author could not find this aphid in the latter part of July. Then, the fall migrants return to *Lonicera* from a secondary host-plant in the beginning of October. The author caught the oviparous female and the male in November.

Remarks—This species apparently allied to the genus *Aphidella* THEOBALD, but by its notable characteristics, it seems to be better to classify in the genus *Anuraphis*.

This species can easily be distinguished from other two pulverulent species, respectively, *Aphis lonicerae* MONELL and *Aphis lonicericola* WILLIAMS, which are known to feed on *Lonicera* sp. in America, by the following points:

Aphis lonicerae

(Alate form)

- (1) Cornicles shorter than broad or scarcely projecting above the surface.
- (2) Antennal joint VI equal to IV and V taken together.

Aphis lonicericola

(Apterous form)

- (1) Antennal joint III with no secondary sensoria.
- (2) Cornicles constricted near the middle.
- (3) Antennal joint III shorter than IV and V taken together.
III almost equal to the filament of VI.

Anuraphis japonica

(Alate form)

- Cornicles much longer than width.
- Antennal joint VI much shorter than IV and V taken together.

Anuraphis japonica

(Apterous form)

- Antennal joint III with 25-34 secondary sensoria.
- Cornicles not constricted, and cylindrical.
- Antennal joint III longer than IV and V taken together.
III more than twice as long as the filament of VI.

4. *Anuraphis mume* HORI, n. sp. (Pl. VI, fig. 27-36)

(Alate viviparous female)—General colour reddish black, slightly covered with white powder. Head, thorax, antennae, legs, cornicles and cauda black. Each basal part of joint III of the antenna and the femora of the legs dusky yellowish green. Rostrum dusky yellowish green with blackish apex. Wing-veins pale brown and stigma dark. Head short with no prominent antennal tubercle. Antennae shorter than the body, with several short bristles. Joint III with 14-17 circular sensoria arranged not in a row over the whole length except at the base; joint IV with 1-3 circular sensoria in a row.

Antennal measurement:

No.	III	Sensoria on III	IV	Sensoria on IV	V	VI
(1)	0.281	15	0.188	2	0.094	0.356(0.056+0.300)
	0.281	15	0.188	2	0.094	0.356(0.056+0.300)
(2)	0.251	17	0.188	3	0.113	0.375(0.075+0.300)
	0.300	14	0.197	3	0.113	0.375(0.075+0.300)

Rostrum reaching to the second coxae. Wing-venation normal. Cornicles twice as long as the base of the antennal joint VI, the widest at the base, somewhat flaring at the mouth. Cauda conical, as long as the basal part of the joint VI, being not as long as the width, with 2 or 3 bristles on each side, imbricated. Anal plate rounded, with several long bristles.

Measurements: Body-length 1.256-1.406 mm. (av. 1.313 mm.). Body-width 0.656 mm. Antennae 1.039-1.106 mm. (av. 1.050 mm.). Fore-wing 2.063 mm. Cornicles 0.131-0.169 mm. (av. 0.150 mm.). Cauda 0.056-0.094 mm. (av. 0.075 mm.); width at its base 0.094 mm. Hind-tarsi 0.056 mm.

(Apterous viviparous female)—General colour dark reddish brown, pulverulent. Other coloration similar to that of the alate viviparous female. Body oval, head short, with no prominent antennal tubercle. Antennae shorter than the body, imbricated, with no secondary sensoria, provided with several short bristles.

Antennal measurement:

No.	III	IV	V	VI
(1)	0.300	0.188	0.198	0.432(0.094+0.338)
	0.263	0.198	0.188	0.451(0.113+0.338)
(2)	0.244	0.150	0.150	0.432(0.094+0.338)
	0.244	0.150	0.150	0.432(0.094+0.338)
(3)	0.244	0.198	0.188	0.432(0.094+0.338)
	0.300	0.206	0.198	0.413(0.094+0.319)
(4)	0.300	0.188	0.188	0.488(0.094+0.394)
	0.300	0.206	0.188	0.469(0.094+0.375)
(5)	0.244	0.150	0.159	0.450(0.075+0.375)
	0.244	0.150	0.150	0.431(0.084+0.347)

Rostrum extending a little beyond the second coxae. Legs large, moderat-

ly long, with many bristles; hind tarsi a little longer than the basal part of the antennal joint VI. Abdomen with a few lateral tubercles on the dorsum. Cornicles and cauda similar to those of the alate form.

Measurements: Body-length 1.650–1.688 mm. (av. 1.669 mm.). Body-width 1.031 mm. Antennae 1.125–1.265 mm. (av. 1.219 mm.). Cornicles 0.206–0.281 mm. (av. 0.244 mm.). Cauda 0.131 mm.; width at its base 0.113 mm.

Food-plant—*Prunus Mume* (*Ume*), *Prunus persica* (*Momo*).

Locality—Sapporo (at the Hokkaido Agr. Exp. Stat.).

Observations—During the spring and early summer this pulverulent species is often abundant. It feeds on the tender shoots and leaves, causing the leaves seriously curl. Early in the summer, the winged migrant departs the *Prunus* spp. for an unknown secondary host-plant.

Remarks—This species differs from *A. helichrysi* KALT. in the coloration and from *A. amygdali* BUCKT. by the lesser secondary sensoria on the joints III and IV, and also joint III equal to or shorter than the filament of VI, but never longer.

5. *Anuraphis rumecicola* HORI, n. sp. (Pl. VI, fig. 37-46)

Colour records of this species were made from the materials in alcohol.

(Alate viviparous female)—Described from only one specimen. General colour yellowish brown. Antenna dark with paler base of the joint III, imbricated, provided with many hairs. Legs yellowish brown excepting the apical three-fourths of the femora, the apices and bases of the tibiae, and the entire tarsi, which are blackish. Abdomen with a large blackish area on the dorsum and several dark marginal spots. Cornicles and cauda dark. Body oval. Head short, with many spine-like hairs on the front, without prominent antennal tubercles. Antennae much shorter than the body, finely imbricated, with several hairs. Circular and the same sized secondary sensoria occur on III and IV in an irregularly row.

Antennal measurement:

III	Sensoria on III	IV	Sensoria on IV	V	VI
0.450	25	0.234	7	0.150	0.356(0.094+0.262)
0.450	26	0.225	7	0.150	0.376(0.094+0.282)

Rostrum reaching to the third coxae. Legs very thick, provided with many spine-like hairs. Abdomen oval, with several lateral tubercles on each side. Cornicles short, as long as the antennal joint V, slightly broader at the middle on one side, imbricated. Cauda very short, conical, with many stout hairs. Anal plate rounded.

Measurements: Body-length 2.156 mm. Body-width 1.031 mm. Antennae 1.313–1.331 mm. Fore-wing 3.094 mm. Cornicles 0.150 mm. Hind-

tarsi 0.131 mm.

(Apterous viviparous female)—Described from one specimen. Coloration nearly similar to that of the alate form. Abdomen with about three dark transverse lines on the hinder segments. Body oval, hairy. Antennae much shorter than the body, finely imbricated, with many fine hairs, having no secondary sensoria. The usual primary sensoria occur on V and VI.

Antennal measurement:

III	IV	V	VI
0.309	0.169	0.103	0.263(0.075+0.188)
0.338	0.169	0.113	0.263(0.075+0.188)

Rostrum reaching to the third coxae. Legs thick, with many spine-like hairs, especially on the tibiae. Hind tibiae as long as the cauda. Abdomen with many lateral tubercles. Cornicles short, as long as the antennal joint IV, tapering towards the apices. Cauda conical, the width at the base equal to the length, hairy.

Measurements: Body-length 2.288 mm. Body-width 1.219 mm. Antennae 0.975 mm. Cornicles 0.169 mm. Cauda 0.113 mm. Hind-tarsi 0.113 mm.

Food-plant—*Rumex crispus* (*Nagaba-gishigishi*).

Locality—Sapporo (at the Hokkaido Agr. Exp. Stat.).

Observations—One alate and one apterous form were collected on the leaves of *Rumex crispus* by Mr. I. ISE on June 24, 1924.

6. *Pergandeidea kalopanacis* HORI, n. sp. (Pl. VI, fig. 47-54)

(Alate viviparous female)—General colour dark greenish brown. Head, antennae, thorax, cornicles and cauda black. Eyes blackish red. Legs dusky yellowish green with the apices of the femora and tibiae, and the entire tarsi, which are blackish. Abdomen with the dorsal dusky markings and several pair of marginal spots. Antennae shorter than the body, slender, imbricated, without prominent antennal tubercles. Joint III with 12-13 circular and the same sized sensoria, arranged almost in a single row along the whole length; joint IV with 5-9 circular sensoria in a straight row.

Antennal measurement:

No.	III	Sensoria on III	IV	Sensoria on IV	V	VI
(1)	0.281	12	0.206	9	0.225	0.450(0.113+0.337)
	0.281	13	0.188	5	0.197	0.431(0.103+0.328)
(2)	0.281	12	0.188	7	0.206	0.431(0.103+0.328)
	0.281	12	0.197	8	0.206	0.431(0.103+0.328)

Rostrum extending near the third coxae. Wing-venation normal and stigma moderately narrow. Cornicles very short, three-fifths the length of the cauda. Cauda long and broad, somewhat constricted about the middle, provided with

four or five curved spines on each side. Anal plate rounded, with several spines.

Measurements: Body-length 1.556–1.574 mm. Body-width 0.656 mm. Antennae 1.219–1.265 mm. Fore-wing 1.969 mm. Cornicles 0.084 mm. Cauda 0.150 mm.

(Apterous viviparous female)—General colour purplish black. Antennae dusky yellow, with the apices of the joints III, IV and V, and the entire VI, which are blackish. Legs dusky yellow, with the most parts of the femora excepting the basal parts, tips of the tibiae, and the entire tarsi, which are blackish. Eyes and cornicles black. Cauda concolorous with the body. Abdomen with many dorsal dusky markings. Body oval, provided with many stout hairs. Head small. Antennae three-fifths the length of the body, rather slender, with several spine-like hairs, slightly imbricated, without secondary sensoria, but the usual primary sensoria occur on V and VI.

Antennal measurement:

No.	III	IV	V	VI
(1)	0.281	0.150	0.150	0.394(0.103+0.291)
	0.223	0.150	0.169	0.375(0.094+0.281)
(2)	0.300	0.225	0.215	0.375(0.094+0.281)
	0.300	0.206	0.206	0.375(0.094+0.281)
(3)	0.281	0.197	0.197	0.375(0.094+0.281)
	0.281	0.206	0.197	0.375(0.094+0.281)

Rostrum extending to or a little beyond the second coxae. Legs thick, with a number of spine-like hairs. Hind-tarsi as long as the basal part of VI of the antenna. Stigma of the fore-wing rather narrow. Cornicles very short, imbricated, the widest at the base and tapering towards the tip. Cauda broader and longer than that of the alate form.

Measurements: Body-length 1.931–1.969 mm. Body-width 1.294 mm. Antennae 1.031–1.219 mm. (av. 1.144 mm.). Cornicles 0.094 mm. Cauda 0.197–0.225 mm.

(Alate male)—Coloration much similar to that of the alate viviparous form. Secondary circular sensoria occur on the joints III, IV and V which are scattered in an irregularly row. V and VI provided with the usual primary sensoria.

Antennal measurement:

No.	III	Sensoria on III	IV	Sensoria on IV	V	Sensoria on V	VI
(1)	0.263	25	0.206	13	0.206	9	0.394(0.094+0.300)
	0.263	30	0.188	24	0.188	11	0.394(0.094+0.300)
(2)	0.281	26	0.225	20	0.197	10	0.413(0.094+0.319)
	0.281	27	0.225	18	0.188	9	0.394(0.094+0.300)

Rostrum reaching near the third coxae. Cornicles very short, thick, finely imbricated. Cauda large, not constricted at the middle.

Measurements: Body-length 1.500 mm. Body-width 0.712 mm. Antennae 1.163-1.219 mm. (av. 1.200 mm.). Fore-wing 2.438 mm. Cornicles 0.056 mm. Cauda 0.131 mm.

Food-plant—*Kalopanax ricinifolius* (Harigiri).

Locality—Sapporo (at the Botanical Garden of the Hokkaido Imperial University).

Observations—This aphid is found throughout the year on the lower sides of the leaves and petioles of *Kalopanax ricinifolius*. The apterous viviparous forms are very abundant, but the alate viviparae always scarce. In the fall, often as early as October, sexual alate male and apterous oviparous female begin to appear. Eggs are deposited in dense masses at the bases of buds and shoots of the host-plant.

Remarks—This remarkable black species is quite distinct from *P. thalictri* MATSUMURA in its coloration and the relative length of the antennal joints as well as in the distribution of the secondary sensoria of the alate viviparous female, and also this species closely allied to *P. siphonella* ESSIG et KUWANA, differing however, from it in longer cornicles and the relative length of the antennal joints.

摘 要

堀 松 次

本編には著者の最近数年間本道に於て採集したる蚜蟲並に松村教授所蔵の同教授採集に係るものうち新種と認むべきもの一種、合計六種を記載す。即ち次の如し

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| 1. <i>Acaudus rhamni</i> HORI (n. sp.) | ウメモドキヲマルアブラムシ |
| 2. <i>Acaudus jozankeanus</i> MATSUMURA et HORI (n. sp.) | シヤウザンチマルアブラムシ |
| 3. <i>Anuraphis japonica</i> HORI (n. sp.) | キンギンボクアブラムシ |
| 4. <i>Anuraphis mume</i> HORI (n. sp.) | ウメクロアブラムシ |
| 5. <i>Anuraphis rumecicola</i> HORI (n. sp.) | ギシギシアブラムシ |
| 6. <i>Pergandeidea kalopanaxis</i> HORI (n. sp.) | ハリギリクロアブラムシ |
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EXPLANATION OF PLATE VI.

- Fig. 1-9. *Acaudus rhamnii* HORI (n. sp.)
1-7. Alate viviparous female.
1. Joints I-III of antenna. 2. Joint IV. 3. Joint V. 4. Joint VI. 5. Cornicle. 6. Cauda. 7. Anale plate.
8-9. Apterous viviparous female.
8. Cornicle. 9. Part of head and joints I-III of antenna.
- Fig. 10-19. *Acaudus jozankeanus* MATSUMURA et HORI (n. sp.)
10-17. Alate viviparous female.
10. Part of head and joints I-II of antenna. 11. Joint III. 12. Joint IV. 13. Joint V. 14. Joint VI. 15. Cauda. 16. Anale plate. 17. Cornicle.
18-19. Apterous viviparous female.
18. Joints I-III of antenna. 19. Cornicle.
- Fig. 20-26. *Anuraphis japonica* HORI (n. sp.)
20-25. Alate viviparous female.
20. Head and joints I-II of antenna. 21. Joint III. 22. Joints IV-V. 23. Joint VI. 24. Cornicle. 25. Cauda.
26. Apterous viviparous female.
26. Joint III of antenna.
- Fig. 27-36. *Anuraphis nume* HORI (n. sp.)
27-31. Alate viviparous female.
27. Head and joints I-II of antenna. 28. Antenna. 29. Cauda. 30. Anale plate. 31. Cornicle.
32-36. Apterous viviparous female.
32. Joints III-IV of antenna. 33. Joints V-VI. 34. Cornicle. 35. Cauda. 36. Anale plate.
- Fig. 37-46. *Anuraphis rumecicola* HORI (n. sp.)
37-42. Alate viviparous female.
37. Head and joints I-III of antenna. 38. Joints IV-V. 39. Joint VI. 40. Cornicle. 41. Cauda. 42. Anale plate.
43-46. Apterous viviparous female.
43. Joints I-IV of antenna. 44. Joints V-VI. 45. Cornicle. 46. Cauda.
- Fig. 47-54. *Pergandeidea kalopanacis* HORI (n. sp.)
47-50. Alate viviparous female.
47. Part of head and joints I-IV of antenna. 48. Joints V-VI. 49. Cornicle. 50. Cauda and anale plate.
51-54. Apterous viviparous female.
51. Joints I-IV. 52. Joints V-VI. 53. Cornicle. 54. Cauda and anale plate.
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