

Four New Swedish Aphids (*Hem. Hom.*).

With Description of a New Genus.

By

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***Atheroides niger*, n. sp.**

Description. *Apterous viviparous female.* (Fig. 1.) Body elongate, lanceolate, broadest in the region of abd. segm. II, above strongly sclerotized. Abdominal segments II-VII fused, the remaining segments free. Pleura fused with the terga. Antennae reaching well past posterior border of pronotum. Head anteriorly strongly convex, roundish. Dorsum with many long and a number of shorter spiny hairs, the longest being as long as ant. segm. VI. The long spines are distinctly arranged in six irregular longitudinal rows: one spinal, one pleural and one marginal pair. On each of abd. segments I-VII the spinal row contains one anterior, more medial and shorter, and one posterior, longer and more lateral spine. In most abdominal segments the pleural row consists of one long, the marginal series of 4-6 long or moderately long hairs. The longest pleural setae are as a rule somewhat shorter than the longest spinal ones in the same segment, except in segment VII, where they may even be longer. Abd. segment VIII as a rule with an unpaired median hair. Venter with long fine hairs and some intersegmental sclerites. Rostrum reaches to 2nd pair of coxae. Antennal hairs normal, the longest ones about as long as ant. segm. II. Chaetotaxy formula of antennae: (I) 3-5, (II) 2, (III) 3-5, (IV) 1-2, (V) 2 (rudiments on basal segments not included). Legs moderately long with long and fine hairs, the longest about as long as proc. terminalis or even longer, those of the tibiae arising from the latter at an angle of 60°-90°. Colour: above pitch black, below dirty yellow, legs and antennae yellowish, tarsi and ant. segments I and VI often fuscous.

Systematic position. This new species has about the same chaetotaxy and shape and arrangement of hairs as *Atheroides hirtellus* (Hal.), but it is at once easily separated from the latter by its pitch black colour. Further, the antennae are longer than in *hirtellus*, and in the latter the tibial hairs arise at a smaller angle. *Atheroides niger* is more robust than any other Swedish *Atheroides*, and its lanceolate shape of the body is also unique among our species, the others having a body with almost parallel side margins.

Measurements in mm and prop. of antennal segments

No.	Length of body	Antennae	Antennal segments (prop.)		
			III	IV	V
1	2.26	0.57	100 : 44	53	58
2	2.44	0.70	100 : 40	42	46
3	2.44	0.65	100 : 38	43	49
4	2.30	0.64	100 : 40	44	49
5	2.37	0.70	100 : 46	40	48
6	2.38	0.71	100 : 48	44	50

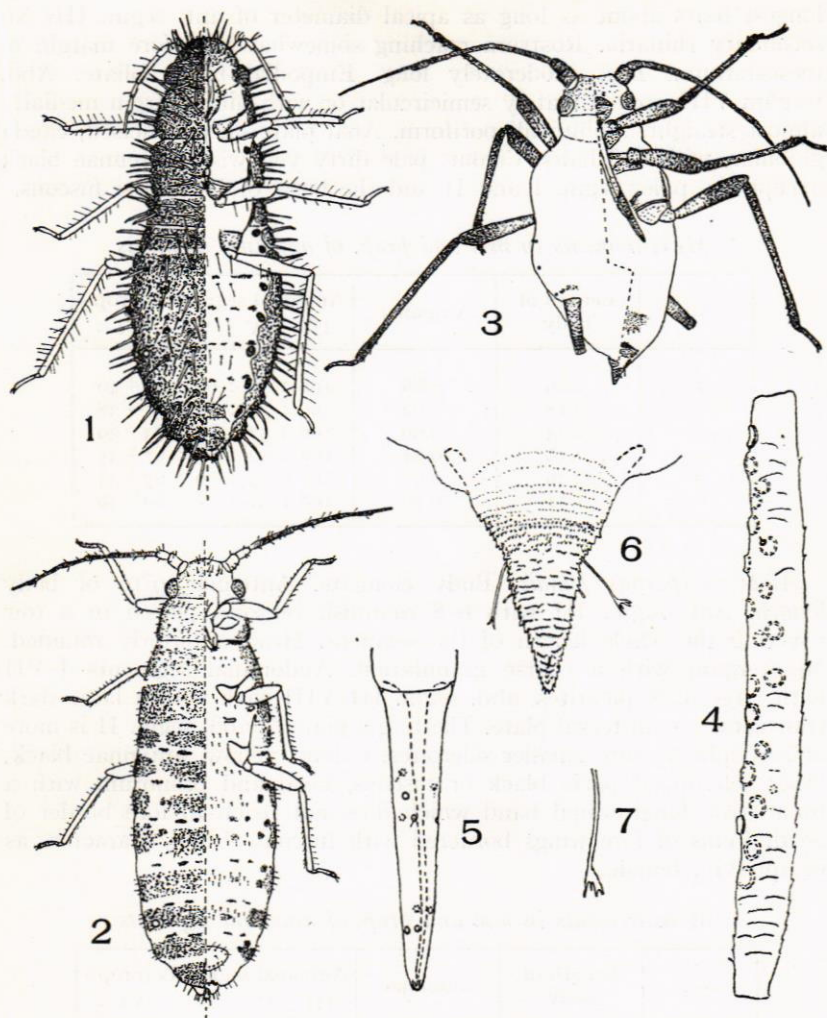
Habitat. I found the material described by beating a tuft of *Deschampsia caespitosa* PB. near Markkärret in Örebro (Nr.), on July 6th, 1954. Only apterae and some larvae were found. Other tufts of the same grass growing in the vicinity produced no specimens of *niger*, but in one of them I collected material of *Atheroides hirtellus* (Hal.), a species very rare in Sweden. It was very striking that the two species living on the same plant species were not found together, though the distance between the two tufts did not exceed one metre.

Types: holotype (Prep. No. 5952) and 50 paratypoids, all apterous viviparous females, in the collection of the Institute of Plant Pathology and Entomology, Upsala, Sweden.

***Thripsaphis caespitosae*, n. sp.**

Description. First instar larva. Elongate, pale yellowish. Body above with hairs placed in distinct spinal, pleural and marginal rows, the latter in the abdomen consisting of 2 pairs of hairs in each segment. Abdominal hairs placed on distinct dark sclerites. Chaetotaxy formula of antennae: (I) 1+1, (II) 2, (III) 3-5, (IV) 3. (Quednau (Mitt. Biol. Zentralanst. Land- u. Forstwirtschaft. Berl.-Dahlem 78, 1954, p. 38) gives the antennal formula 1+1, 2, 4, 4 for the present species. In none of my specimens, however, there are more than 3 hairs on ant. segm. IV, if the apical ones are not included.) Length of body 0.7-0.75 mm.

Apterous viviparous female. (Fig. 2.) Body elongate. Head anteriorly evenly arched. Dorsal hairs spine-like, scattered over the whole dorsum. Dorsal microtrichiae minute, indistinct. Terga of abdomen sclerotic, free from each others, each tergal plate consisting of many fused sclerites, so that a number of "windows" or unsclerotized areas are visible. The pleura are often but not always fused with the terga. Transverse intersegmental sclerites present on the venter as well as on the tergum of abdomen. Well-defined abdominal sternites small or absent. Antennae short, just reaching to fore margin of 1st abd. segment. Their



Figs. 1-7. (1) *Atheroides niger*, n. sp., apterous viviparous female (23 ×). (2) *Thripsaphis caespitosae*, n. sp., apterous viviparous female (27 ×). (3) *Macrosiphoniella hillerislambersi*, n. sp., apterous viviparous female (24 ×). (4) same, apterous viviparous female, 3rd antennal segment (200 ×). (5) same, apterous viviparous female, apical segment of rostrum (200 ×). (6) same, apterous viviparous female, cauda (200 ×). (7) same, apterous viviparous female, caudal hair (380 ×). — In Figs. 1-3, the right half of each figure represents the ventral aspect of the specimens reproduced.

longest hairs about as long as apical diameter of ant. segm. III. No secondary rhinaria. Rostrum reaching somewhat past fore margin of mesosternum. Legs moderately long. Empodial hairs foliate. Abd. tergum VIII approximately semicircular or with hind margin medially almost straight. Siphunculi poriform. Anal plate deeply incised, cauda globular, with 6-8 hairs. Colour: pale dirty yellowish, antennae black except the paler segm. I and II and the basis of III. Tarsi fuscous.

Measurements in mm and prop. of antennal segments

No.	Length of body	Antennae	Antennal segments (prop.)			
			III	IV	V	VI
1	2.09	0.86	100	: 56	: 69	: 76 + 40
2	2.18	0.93	100	: 54	: 65	: 71 + 38
3	2.25	0.90	100	: 57	: 67	: 73 + 39
4	2.19	0.94	100	: 52	: 63	: 67 + 35
5	2.26	0.96	100	: 55	: 60	: 67 + 33
6	1.91	0.79	100	: 51	: 71	: 80 + 49

Alate viviparous female. Body elongate. Antennae 9/16 of body length. Ant. segm. III with 6-8 roundish sensoria placed in a row covering the whole length of the segment. Head anteriorly rounded. Mesotergum with a coarse granulation. Abdominal segments I-VII with large dark pleurites, abd. segm. III-VIII each with a large dark transversely oval tergal plate. The tergal plate of abd. segm. II is more or less split up into smaller sclerites. Colour: yellow, antennae black, other sclerotized parts black or fuscous, head and pronotum with a broad pale longitudinal band which does not reach to fore border of head. Veins of fore wings bordered with fuscous. Other characters as in apt. viv. female.

Measurements in mm and prop. of antennal segments

No.	Length of body	Antennae	Antennal segments (prop.)			
			III	IV	V	VI
1	1.76	0.86	100	: 52	: 60	: 61 + 34
2	2.18	1.08	100	: 49	: 57	: 57 + 26
3	1.91	1.11	100	: 58	: 55	: 58 + 31

Oviparous female. Hind tibiae as broad as the hind femora, with very numerous sensoria. Subsiphuncular wax glands each with one lateral and one medial incision. Colour: greyish yellow. Other characters as in apt. viv. female.

Measurements in mm and prop. of antennal segments

No.	Length of body	Antennae	Antennal segments (prop.)			
			III	IV	V	VI
1	2.12	0.93	100	: 55	: 58	: 68 + 40
2	2.20	0.93	100	: 53	: 60	: 65 + 35
3	2.25	0.89	100	: 56	: 64	: 70 + 40
4	2.26	0.94	100	: 50	: 63	: 70 + 37
5	2.26	0.90	100	: 55	: 67	: 71 + 39
6	2.26	0.95	100	: 52	: 61	: 67 + 39

Male. Apterous, body very elongate, parallel-sided. Antennae 7/10 of body length. Head broad, anteriorly but little curved. Rostrum reaching near middle coxae. Number of sec. rhinaria on ant. segm. III: 5-9, on IV: 0, on V: 0-6, on basal part of VI: 0-6, all rhinaria fringed. The rhinaria on ant. segm. III are scattered over the whole segment except its very basis, those on V tend to concentrate on the apical half of the segment. Legs relatively longer than in female forms. Abdominal terga free from each others, as a rule fused with the pleura, fainter pigmented than the intersegmental sclerites. Genitalia moderately developed. Colour: light yellow, antennae black or fuscous except segments I and II and the very basis of III.

Measurements in mm and prop. of antennal segments

No.	Length of body	Antennae	Antennal segments (prop.)			
			III	IV	V	VI
1	1.42	0.78	100	: 58	: 60	: 72 + 40
2	1.37	0.84	100	: 57	: 65	: 76 + 39
3	1.36	0.76	100	: 58	: 75	: 83 + 48
4	1.32	0.86	100	: 54	: 65	: 73 + 38
5	1.40	0.81	100	: 59	: 64	: 77 + 41

Systematic position. This species is very closely related to *Thripsaphis ballii* Gill. from *Carex* sp. in North America. But in apterous *ballii* (according to specimens in a slide lent to me by Dr. W. Quednau), the dorsal microtrichiae on the fore part of the body are much more distinct than in *caespitosae*. In *ballii*, the ventral abdominal sclerotization forms large paired segmental plates, which are absent or very small in *caespitosae*. In the American species, ant. segm. VI of apterae is as a rule shorter than segm. III, while the opposite is the case in *caespitosae*. According to Quednau (l. c.), the antennal chaetotaxy formula in the 1st larval instar of *ballii* is 1+1, 2, 4, 7, while the corresponding formula in the present species is 1+1, 2, 3-5, 3 (or 4, according to Quednau (l. c.)).

Habitat and biological data. I found apterous and alate specimens of this species by beating tufts of its host plant, *Carex caespitosa* L., in a ditch at Upsala, Kungsängen, on June 6th, 1953. More material was easily reared on the same *Carex* in my laboratory. Sexual forms appeared in my cultures from August 31st on, while oviparae were collected outdoors on Sept. 11th, 1953.

Types: in the collection of the Institute of Plant Pathology and Entomology, Upsala. Holotype: one apterous viviparous female collected on the locality above mentioned on July 16th, 1953 (Prep. No. 4868). Paratypoids: 7 alate and about 70 apterous viviparous females, 22 oviparae, 6 males and some larvae, all collected on the locality above mentioned or reared from specimens collected there.

I am much indebted to Dr. W. Quednau, Berlin, who lent me a slide with specimens of *Thripsaphis ballii* Gill. for comparison.

Macrosiphoniella (Ramitrichophorus) hillerislambersi, n. sp.

Description. Apterous viviparous female. (Fig. 3.) Body comparatively small, convex. Hairs not on distinct scleroites, very short, length of most dorsal and ventral body hairs not exceeding $1/4-1/3$ of basal diameter of ant. segm. III. Head dark, broad, fore border almost straight, without frontal tubercles. Length of antennae about $4/5$ of body length. Antennae dark, segm. III (Fig. 4) with 15-23 roundish rhinaria of varying size arranged along one side of the segment from basis to apex. Ant. segment IV with 0-1 rhinarium. Proc. terminalis $4.5 \times$ basis of VI and distinctly longer than III. Rostrum reaching well past hind coxae, apical segment (Fig. 5) long, almost parallel-sided and very slender, as long as hind tarsi (with claws), almost as long as ant. segm. IV, and $2/3$ of length of siphunculi. Legs dark, femora lighter near basis, tibiae not or very slightly lighter near middle. Hairs of legs very small except on tarsi and some near apex of tibiae. 1st tarsal joints each with 3 hairs. Anterior siphuncular sclerite small and only faintly pigmented in my specimens. Siphunculi dark, rather short with apical $2/5-1/2$ reticulated, without a distinct flange. Cauda (Fig. 6) shortly triangular, acute, half of length of siphunculi, with 4-7 hairs. In each of my individuals, however, only 1-2 of these caudal hairs are relatively long and bi- or trifold (Fig. 7) as normal in *M. (R.) janckei* CB. Anal plate with a few long hairs, bifid or normal. These and the longest caudal hairs are the only long hairs of the body. Subgenital plate with 2-4 hairs on its anterior half and with 12-14 hairs along its posterior margin. These hairs are blunt or indistinctly club-shaped. Colour: reddish with a large black patch on dorsum of abdomen. This patch is absent in macerated specimens.

Systematic position. This new species is very closely related to *Macrosiphoniella (Ramitrichophorus) janckei* CB. (1939), but the latter has *Entomol. Ts. Arg.* 75. H. 2-4, 1954

Measurements in mm and prop. of antennal segments

No.	Length of body	Ant.	Siph.	Cauda	Last rostr.	Prop. of ant. segments			
						III	IV	V	VI
1	1.62	1.31	0.28	0.15	0.20	100	: 57	: 47	: 27+110
2	1.72	1.51	0.33	0.18	0.20	100	: 53	: 45	: 25+119
3	1.60	1.39	0.28	0.15	0.19	100	: 57	: 44	: 30+122
4	1.86	1.55	0.33	0.16	0.21	100	: 61	: 47	: 27+120
5	1.61	1.54	0.33	0.16	0.19	100	: 62	: 42	: 31+128
6	1.61	1.45	0.31	0.14	0.20	100	: 64	: 46	: 33+133

a still longer last rostral segment and is amply provided with long dorsal hairs of the same type as the very few long ones in *hillerislambersi*.

Habitat. I found 6 apterous viviparous females and a few larvae of the present species on subterranean parts of *Helichrysum arenarium* Moench in Scania, Åhus, 23.VI, 1953. The small colony was attended by ants (*Lasius niger*).

Types: holotype (Prep. No. 5181) and 4 paratypoids in the collection of the Institute of Plant Pathology and Entomology, Upsala 7. One paratypoid in the collection of Dr. D. Hille Ris Lambers.

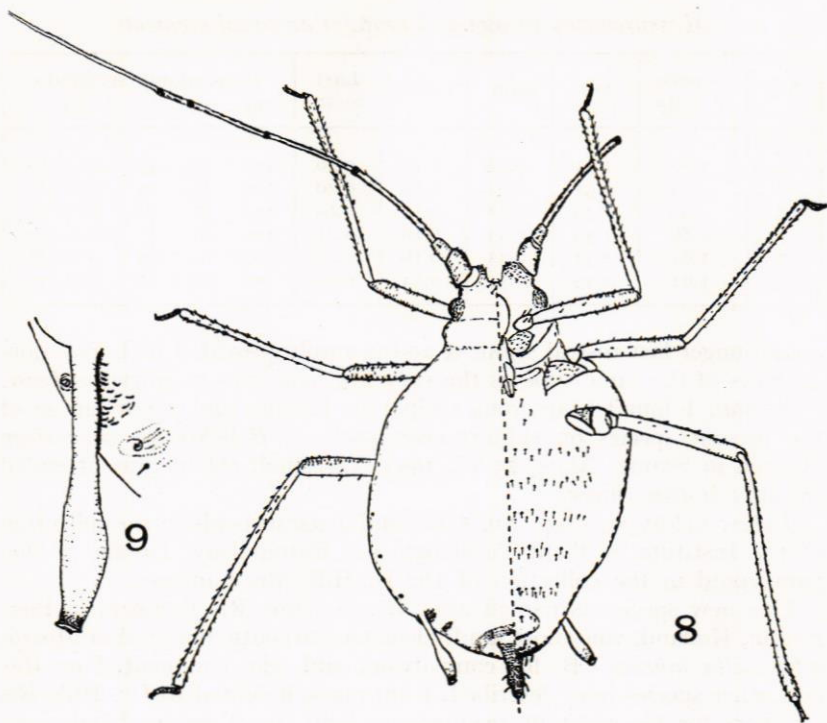
This new species is named after Dr. D. Hille Ris Lambers in Bennekom, Holland, who most kindly lent me authentic material of *Macrosiphoniella janckei* CB. for comparison, and who commented on this and other species here described. I am much indebted to Dr. Hille Ris Lambers for his constant readiness to help in all my problems concerning aphids.

Galiaphis, n. gen.

Tergum in apterae and abdominal tergum in alatae membranous. Frontal tubercles well developed, more or less scabrous. Antennae very long. Secondary rhinaria in apterous and alate viviparous females present on ant. segment III only, few in number. Siphunculi swollen in their apical half, almost completely smooth. Cauda with a small number of hairs. Related to *Amphorophora* Buckt., and to *Wahlgreaniella* HRL. Type: *Galiaphis annae*, n. sp.

Galiaphis annae, n. sp.

Description. *Apterous viviparous female.* (Fig. 8.) Body convex, oval, delicate, shining. Frontal tubercles well developed, with almost parallel or somewhat diverging inner margins, faintly scabrous. Median frontal tubercle little developed. Antennae longer than body, their two basal segments scabrous as well as the following ones. 1st ant. segment with 7-11, the second one with 5-6 short hairs. Length of the hairs on ant.



Figs. 8-9. (8) *Galiaphis annae*, n. sp., apterous viviparous female (27 \times) (right half representing ventral aspect). (9) same, apterous viviparous female, left siphunculus with adjacent part of integument (83 \times).

segment III about $\frac{1}{4}$ of basal diameter of that segment. Dorsal hairs on head about $\frac{1}{2}$ of that diameter. Ant. segment III with 0-2 (normally 1) rhinaria near basis. Apices of ant. segments III, IV, and V, and of basal part of VI, conspicuously darker than the rest of the antennae. Rostrum reaching to the region between 2nd coxae. Its apical segment approximately as long as the 2nd segment of hind tarsus, with a varying number of hairs. Stem of mesosternal furca very short, almost absent. Legs rather long, femora in their apical $\frac{1}{2}$ - $\frac{2}{3}$ imbricated, first tarsal joints with 3 hairs. In specimens collected in August, the hind tibiae are sometimes equipped with a few sensoria. Tergum membranous. There is a small imbricated but unpigmented post-siphuncular area, and a similar rudimentary pleurite in the region of abd. spiracle VII. Dorsal abdominal hairs very short, as long as or little longer than those on ant. segment III. Siphunculi (Fig. 9) in length about $\frac{4}{5}$ of ant. segment III, almost completely smooth, swollen in their apical half, with a small flange, pale but with the extreme

apex fuscous. VIIIth abd. tergum sclerotic but colourless, with 4 hairs. Cauda with a distinct constriction, finger-like and rather acute, with 7-8 hairs. Length of cauda = $2/3$ of siphunculi. Rudimentary gonapophyses 3. Subgenital plate on its anterior half with one pair of long median hairs and more laterally with 2-3 pairs of shorter hairs. Ventral abdominal hairs long. Colour: whitish yellow, pale yellowish green, or light green, tarsi and pigmented parts (see above) fuscous.

Measurements in mm and prop. of antennal segments

No.	Length of body	Ant.	Siph.	Cauda	Last rostr.	Prop. of ant. segments			
						III	IV	V	VI
1	2.26	3.02	0.46	0.34	0.10	100	: 85	: 77	: 34 + 158
2	2.26	2.78	0.46	0.30	0.09	100	: 88	: 78	: 33 + 151
3	1.81	2.66	0.42	0.28	0.10	100	: 89	: 87	: 36 + 178
4	2.10	2.78	0.48	0.29	0.10	100	: 90	: 78	: 32 + 154
5	2.06	2.99	0.46	0.31	0.10	100	: 89	: 77	: 32 + 136
6	1.93	2.60	0.39	0.27	0.09	100	: 87	: 76	: 33 + 164

Alate viviparous female. Very like apterous viviparous female. Region of median frontal tubercle fuscous. The antennae may also be more or less fuscous, but the apices of ant. segments III-V and of basal part of VI are always distinctly darker. Mesoscutal lobes only pale fuscous. Extreme tips of femora, apices of tibiae, and tarsi fuscous. The entire legs may also be faintly fuscous. Wings with veins bordered with fuscous. Ant. segment III with 5-7 rhinaria. Colour: fore part of body pale yellow, abdomen light green, pigmented parts (see above) fuscous. Remaining characters as in apt. viv. female.

Measurements in mm and prop. of antennal segments

No.	Length of body	Ant.	Siph.	Cauda	Last rostr.	Prop. of ant. segments			
						III	IV	V	VI
1	2.34	3.48	0.48	0.31	0.10	100	: 100	: 95	: 33 + 151
2	2.38	3.36	0.45	0.32	0.10	100	: 96	: 91	: 37 + 147
3	2.25	3.17	0.45	0.29	0.10	100	: 88	: 94	: 36 + 166
4	2.25	3.16	0.44	0.30	0.10	100	: 94	: 83	: 35 + 150

Oviparous female. Very like apterous viviparous female. Basal half of hind tibiae somewhat swollen, with a relatively small number of sensoria (in one specimen 28 on the left tibia, 9 on the right one). Legs and antennae often somewhat stronger pigmented than in viviparous apterae. Cauda shorter ($3/5$ of siphunculi) and less distinctly constricted than in viviparous females. Colour as in the apterous viviparous form.

Measurements in mm and prop. of antennal segments

No.	Length of body	Ant.	Siph.	Cauda	Last rostr.	Prop. of ant. segments			
						III	IV	V	VI
1	1.86	3.03	0.48	0.27	0.10	100	: 81	: 78	: 33 + 152
2	2.09	2.78	0.44	0.28	0.10	100	: 85	: 75	: 35 + 165
3	1.79	2.87	0.41	0.23	0.10	100	: 82	: 73	: 31 + 129
4	2.25	2.87	0.48	0.29	0.10	100	: 90	: 80	: 32 + 144
5	2.20	2.87	0.50	0.29	0.12	100	: 92	: 81	: 35 + 158
6	1.89	2.60	0.45	0.28	0.10	100	: 95	: 82	: 36 + 155

Male. Apterous, very like apterous females, but body more slender, not much broader than the head. Area between frontal tubercles fuscous. Ant. segm. III with 19-26, IV with 14-20, and V with 11-13 sec. rhinaria placed along the whole length of the segments. Genitalia moderately developed. Cauda scarcely constricted. Legs and antennae faintly fuscous, siphunculi gradually darker towards apex, colour greenish yellow or light green.

Measurements in mm and prop. of antennal segments

No.	Length of body	Ant.	Siph.	Cauda	Last rostr.	Prop. of ant. segments			
						III	IV	V	VI
1	1.59	2.32	0.41	0.20	0.10	100	: 95	: 74	: 36 + 174
2	1.58	2.44	0.41	—	0.09	100	: 93	: 78	: 35 + 170

Systematic position. This species does certainly belong to the *Amporphora-Wahlgreniella* complex, but as it cannot be satisfactorily placed in either of these genera, I had to erect the new genus *Galiaphis* for it. It is quite distinct from any described aphid so far known by me.

Habitat. The viviparous apterae and oviparae of this species were first found on *Galium boreale* L. in the forest of Jälla in Vaksala (Upl.), on August 16th, 1953. More oviparae were reared on the same host plant during September, while the males were collected on the original finding-place on Sept. 13th, 1953. One alata was obtained on August 8th, 1954, by rearing material collected on the same locality in June, 1954. I also found one apterous viviparous specimen on *Galium boreale* near Arnöhuvid in Skokloster (Upl.) on June 26th, 1954, while a few apterous specimens and some nymphs were collected on the same host plant in Sala (Vstm.) on July 1st, 1954. The nymphs were kept alive and after a few days developed into alatae. As the males are apterous, the species is doubtless monophagous-holocyclic on *Galium boreale*. It infests the stems and the under side of the leaves.

Types: holotype (one apterous viviparous specimen from Jälla, Prep. No. 5809) and paratypoids (3 males, 46 oviparae, 21 apterous and 5 alate viviparous females) in the collection of the Institute of Plant Pathology and Entomology, Upsala 7.

Some of the material above described was collected during a successful and agreeable excursion to which I was invited by my friends, Ann and Rolf Frankenberg, Upsala. I have much pleasure in dedicating the present species to Mrs. Frankenberg.
