A List of Danish Aphids.

3.: *Microlophium* Mordv., *Hyalopteroides* Theob., *Idiopterus* Davis, *Amphorophora* Buckt., *Megoura* Buckt., *Hyperomyzus* Börner, *Nasonovia* Mordv., *Rhopalosiphoninus* Baker, *Rhopalomyzus* Mordv., *Chaetosiphon* Mordv., *Cryptomyzus* Oestl., *Pleotrichophorus* Börner, and *Capitophorus* v. d. G.

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List of the species.

52. *Microlophium carnosum* (Buckton, 1876).
53. *M. evansi* (Theobald, 1923).
54. *Hyalopteroides humilis* (Walker, 1852).
55. *Idiopterus nephrelepidis* Davis, 1909.
56. *Amphorophora rubi* (Kaltenbach, 1843).
57. *Megoura litoralis* F. P. Müller, 1956.
58. *M. viciae* Buckton, 1876.
59. *Hyperomyzus lactucae* (L., 1758).
60. *H. lampsanae* (Börner, 1932).
61. *H. pallidus* Hille Ris Lambers, 1935.
62. *H. (Hyperomyzella) rhinanthi* (Schouteden, 1903).
63. *Nasonovia pilosellae* (Börner, 1933).
64. *N. ribis-nigri* (Mosley, 1841).
65. *Rhopalosiphoninus calthae* (Koch, 1854).
66. *R. tulipaellus* (Theobald, 1916).
67. *Rhopalomyzus (Judenkoa) lonicerae* (Siebold, 1839).
68. *Chaetosiphon (Pentatrichopus) potentillae* (Walker, 1850).
69. *C. (P.) tetrarhodus* (Walker, 1849).
70. *Cryptomyzus galeopsidis* (Kaltenbach, 1843).
71. *C. korschelti* Börner, 1938.
72. *C. ribis* (L., 1758).
73. *Pleotrichophorus filaginis* (Schouteden, 1906).
74. *P. glandulosus* (Kaltenbach, 1846).
75. *Capitophorus carduinus* (Walker, 1850).
76. *C. elaeagni* (del Guercio, 1894).
77. *C. hippophaes* (Walker, 1852).
78. *C. horni* (Börner, 1931).
79. *C. similis* van der Goot, 1915.

Genus **MICROLOPHIUM** Mordvilko, 1914.

52. *Microlophium carnosum* (Buckton, 1876).
Microlophium carnosum Hille Ris Lambers, 1949, p. 205.
Microlophium carnosum Börner, 1952, p. 142, no. 541.

Distribution: Outside Denmark known from England, Netherlands, Germany, Poland (Szelegiewicz 1958), S. S. S. R., and U. S. A.

Occurrence in Denmark: Alate individuals have been caught in yellow Moericke-trays at Ørslev on Sealand (10-8-56) and at Borris in Jutland (July, August, and September, 1956).

Dr. Hille Ris Lambers most kindly made the determination. I have not seen the species on its host, Urtica urens.

53. *Microlophium evansi* (Theobald, 1923).
Microlophium evansi Hille Ris Lambers, 1949, p. 209.
Microlophium evansi Börner, 1952, p. 142, no. 542.

Distribution: Europe and perhaps U. S. A. It is known from Sweden.

Occurrence in Denmark: Found on stems and leaves of its host, Urtica dioica, in Jutland at Skive (1-9-56) and Højslev (6-9-56), on Funen at Nyborg (9-7-58), and on Turø (4-7-57). It has once been taken on Solanum tuberosum at Hornum in Jutland (10-8-58, 1 apt., Hille Ris Lambers det.). Alate individuals have been caught in yellow trays at Årslev on Funen (17-8-56) and at Tylstrup in Jutland (6-7-56).

Genus **HYALOPTEROIDES** Theobald, 1916.

54. *Hyalopteroides humilis* (Walker, 1852).
Hyalopteroides dactylidis Hille Ris Lambers, 1949, p. 213.
Hyalopteroides humilis Börner, 1952, p. 116, no. 429.
Hyalopteroides humilis Börner & Heinze, 1957, p. 173, fig. 67.

Distribution: Europe and North America. Known from Sweden.

Occurrence in Denmark: Collected from Achillea millefolium at Skive (28-7-57) and on Dactylis glomerata on the same locality (23-7-58), from Knautia arvensis at Brund near Horsens (28-6-59, one parasitized specimen), and in a yellow tray at Haderslev (8-7-55, several apterous specimens).

This aphid feeds only on Dactylis glomerata. The occurrence on the other above-mentioned plants was accidental.

Genus **IDIOPTERUS** Davis, 1909.

55. *Idiopterus nephrelepidis* Davis, 1909.

Idiopterus nephrelepidis Hille Ris Lambers, 1949, p. 218, pl. I fig. 1.
Idiopterus nephrolepidis Börner, 1952, p. 135, no. 514.
Idiopterus nephrolepidis Börner & Heinze, 1957, p. 213, fig. 84.

Distribution: According to Hille Ris Lambers probably of neotropical origin, but now distributed all over the world, in temperate climates nearly exclusively in glass-houses. The species occurs in Europe, North America, Chile, Argentina, Hawaii, Australia, Egypt, and South Africa (F. P. Müller 1958). It is known from Sweden.

Occurrence in Denmark: Collected from ferns indoors in Copenhagen (23-7-39) by dr. Sv. G. Larsson (material kept in the collection of the Zoological Museum of Copenhagen).

It is an anholocyclic species, feeding on ferns.

Genus **AMPHOROPHORA** Buckton, 1876.

56. *Amphorophora rubi* (Kaltenbach, 1843).

Amphorophora rubi Hille Ris Lambers, 1949, p. 237.
Nectarosiphon rubi Börner, 1952, p. 176, no. 689.
Nectarosiphon idaei Börner, 1952, p. 176, no. 690.

Distribution: Europe, Western Asia, and U. S. A. It is known from Sweden.

Occurrence in Denmark: In Jutland collected from Rubus idaeus at Skanderborg (24-7-56), Ødum (2-7-58, H. Rønde Kristensen leg.), Hornum (11-8-58, E. Larsen leg.), and Studsgård (9-7-59), from R. fruticosus (bramble) at Grejsdal (10-7-58) and Strandkjær at Femmøller (3-8-59), and from yellow trays at Tylstrup (13-7-56) and Jyndevad (29-6-56). On Funen collected from R. idaeus at Nyborg (9-7-58), from R. fruticosus at Svanninge Bakker (12-7-57), Fåborg (13-7-57), and Nyborg (9-7-58), and from a yellow tray at Årslev (20-7-56). On Sealand collected from R. idaeus at Sorgenfri (14-7-52). On other islands collected from Verbascum sp. at Mårup on Samsø (11-8-58, apt. viv. and larvae) and on Rubus idaeus at Svaneke on Bornholm (1-9-60, Ingrid Thomsen leg.).

It is a non-migrating species, feeding on Rubus spp. from spring till autumn. It is a noxious insect being able to transmit virus diseases of Rubus spp.

Genus **MEGOURA** Buckton, 1876.

57. *Megoura litoralis* F. P. Müller 1956.

Megoura litoralis (F. P. Müller n. sp. in litt.) Börner, 1952. p. 177, no. 697 a.
Megoura litoralis F. P. Müller, 1956, p. 506.

Distribution: Germany (at Warnemünde (Müller 1956), Rostock and on the coast between Prerow and Darsser Ort (Müller in litt.)), Sweden (Vitemölla (Andersson 1959), Ystad and Åhus (Ossiannilsson 1959 b)), and Denmark (fig. 3).

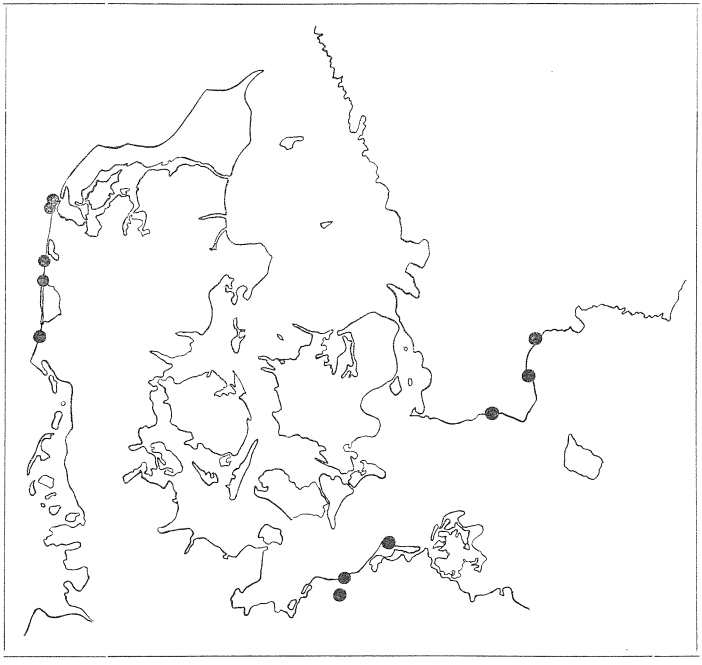

Fig. 3. The distribution of *Megoura litoralis* F. P. Müller, which lives on Lathyrus maritimus on dunes.

Occurrence in Denmark: Collected from Lathyrus maritimus at Thyborøn (22-6-57), Langer Huse (27-5-58), Vedersø Klit (27-5-58), Søndervig (30-6-58), and Henne Strand (30-6-58).

All the localities mentioned are dune areas along the west coast of Jutland. Colonies of this aphid species are more or less hidden in the inflorescenses or between parts of young leaves. Winged individuals were found in the last days of June.

The fundatrix has not been found before. Single specimens with their offspring occurred on the usual host in the last days of May (27-5-58), and they shall be described here.

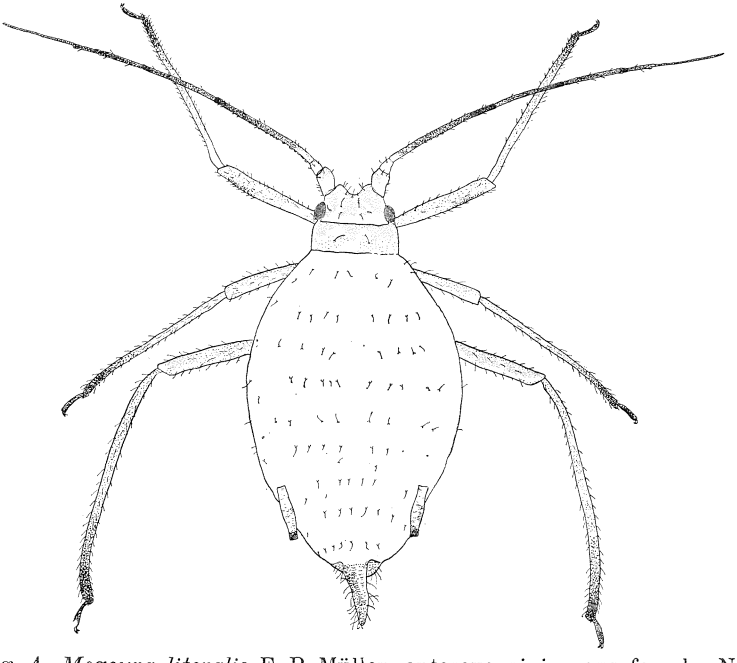

Fig. 4. *Megoura litoralis* F. P. Müller, apterous viviparous female. Natural size about 4 mm.

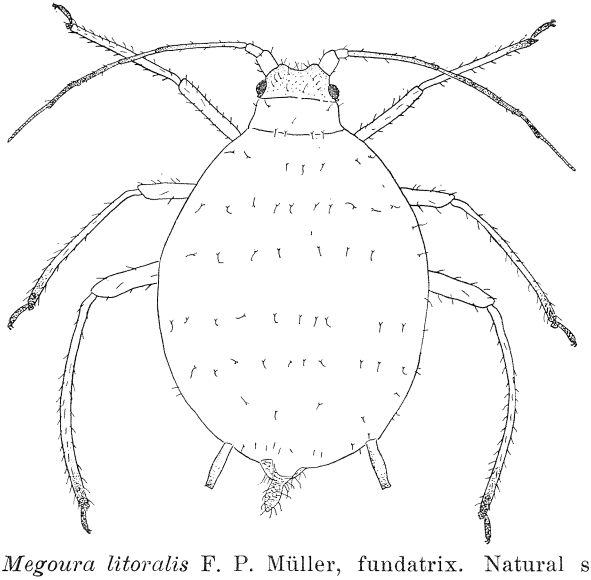

Fig. 5. *Megoura litoralis* F. P. Müller, fundatrix. Natural size about 3 mm.

Description of the fundatrix (fig. 5).

Morphological characters: Very much like the apterous viviparous female, but head and pronotum not so dark. The frontal tubercles are lower and more diverging. The length of the antennae only $^1/_2$-$^2/_3$ of body length. The segments III-V are only dark at the apices; IIIrd antennal segment with only 0-2 secondary rhinaria; IVth segment is shorter than Vth; processus terminalis (VIb) is only twice as long as the base of VIth segment (VIa). Siphunculi not so dark as in apterous viviparous female, but with the same shape. Cauda with 15-16 hairs.

Measurements of two specimens: a) Langer Huse, 27-5-58: Body 3,50 mm, antenna 2,24 mm, siphunculus 0,40 mm, cauda 0,41 mm, prop. of ant. segm. III:IV:V:VIa:VIb = 100:46:63:30:60. b) Vedersø Klit, 27-5-58: Body 4,25 mm, antenna 2,09 mm, siphunculus 0,39 mm, cauda 0,44 mm, prop. of ant. segm. III:IV:V:VIa:VIb = 100:39:54:30:54.

Colour: Light green. Eyes red.

58. *Megoura viciae* Buckton, 1876.

Megoura viciae Hille Ris Lambers, 1949, p. 264, pl. IV fig. 2.
Megoura viciae Börner, 1952, p. 177, no. 697.

Distribution: Europe and Northern Asia. It is known from Sweden and Norway.

Occurrence in Denmark: This species has been collected in Jutland from Lathyrus pratensis at Vridsted on Karup Å (16-6-57) and Blokhus in Vendsyssel (15-8-60) and from L. montanus at Madum Sø (25-5-59). In yellow Moericke-trays single alate specimens were taken at Jyndevad in Jutland (2-9-55) and at Ørslev on Sealand (3-8-56). It is mentioned among aphids doing harm to leguminous crops by S. Rostrup (1900, p. 51).

The species lives on Lathyrus, Vicia, and Medicago and does not migrate.

Genus **HYPEROMYZUS** Börner, 1933.

Subgenus **HYPEROMYZUS** s. str.

59. *Hyperomyzus lactucae* (Linné, 1758).

Hyperomyzus lactucae Hille Ris Lambers, 1949, p. 286.
Hyperomyzus lactucae Börner, 1952, p. 137, no. 525.

Distribution: Europe, Asia, North America, and South America. It is known from Sweden, Norway, Finland, and the Faroes.

Occurrence in Denmark: Very common in all parts of the country. The species is among those represented by greatest numbers of alate individuals caught in Moericke-trays. It has been collected (coll.) or only observed at the following places:

Jutland: On Ribes nigrum at Skive (May-June and October, coll. on 4-6-56 and 4-6-58) and Hornum (7-6-58, E. Larsen leg.), on Ribes sp. at Skive (May-June 1959). On Sonchus at Hirtshals (26-7-60), Jelstrup near Hjørring (24-7 60), V. Hjermitslev (2-8-60), Blokhus (29-7-60), Lemvig (4-7-59), Fur (22-8-57), Lyby in Salling (2-8-57), Resen near Skive (19-9-57), Skive (June-October, several times), Handbjerg near Struer (16-7-59), Katrinedal (11-7-58), Strandkjær at Femmøller (7-8-59, 6-7-60), Århus (14-8-57), Skanderborg (2-9-59), Brund near Horsens (28-6-59), and Rømø (4-7-58).

Funen: On Sonchus at Dyreborg (15-7-57), Fåborg (16-7-57), Udby (6-7-58), Køng (6-7-58), Årup (6-7-58,, coll.), Refsvindinge (8-7-58, coll.), Nyborg (9-7-58), Bovense between Nyborg and Kerteminde (9-7-58), and Brenderup (2-7-60).

Sealand: On Sonchus at Hornbæk (9-8-17, Math. Thomsen leg. et det.), Trollesminde near Hillerød (2-8-55, coll.), Holte (15-8-57, coll.), and Benløse at Ringsted (16-8-57).

Other islands: On Sonchus on Læsø (10-8-57, coll.), Samsø (9-8-58), Turø (2-7-57, coll.), Tåsinge (3-7-57), Strynø (7-7-57), Ærø (8-7-57), Lyø (11-7-57), Langeland at Frellesvig (6-7-57), Falster at Nykøbing F. (16-8-57, 15-8-58), and Lolland at Hunseby (16-8-57) and at Sløsse (15-8-58).

The species has been caught very often by means of yellow Moericke trays, f. inst. at Tylstrup, Borris, and Jyndevad in Jutland, at Årslev on Funen, and at Ørslev on Sealand in 1956 (Heie 1960 b).

Migration takes place between Ribes spp. (especially R. nigrum), the winter hosts, and Sonchus spp., the summer hosts. Some harm may be caused on Ribes in the spring, the leaves of which may be curled. The species and its economic importance both have been mentioned by Bovien & Thomsen: Haveplanternes Skadedyr (Copenhagen) and Plantesygdomme i Danmark, årsoversigter samlet ved Statens plantepatogiske Forsøg (syn. *Rhopalosiphum ribis,* in Danish: solbærbladlus). The leaf-curling of Ribes is also mentioned by Henriksen (1944, p. 108).

Alate individuals develop on Ribes during May (1959: observed from May 13; 1960: observed from about May 22), the spring

migration taking place mainly during June. In the summer months great colonies occur on Sonchus arvensis, S. oleraceus, and S. asper, sitting on the upper parts of the plants, especially between the inflorescenses. Alate viviparous females may be met with all the summer, flying from one Sonchus plant to another, representing a relatively great percentage of the aphids swarming in the air. The autumnal migrants return to Ribes in September-October.

60. *Hyperomyzus lampsanae* (Börner, 1932).
Hyperomyzus lampsanae Hille Ris Lambers, 1949. p. 292, pl. V fig. 1.
Hyperomyzus lampsanae Börner, 1952, p. 137, no. 527.

Distribution: Europe. Known from Sweden.

Occurrence in Denmark: Found on Lapsana communis in Jutland at Skive (31-7-57, 19-9-57), Randers (13-9-58), Mellerup (13-7-59), Tulstrup at Rye (21-7-59), and Strandkjær at Femmøller (5-8-59), on Funen at Svendborg (3-7-57) and at Fåborg (13-7-57), and on Falster at Nykøbing F. (15-8-58).

Lapsana communis is the only host of this non-migrating species.

61. *Hyperomyzus pallidus* Hille Ris Lambers, 1935.
Hyperomyzus pallidus Hille Ris Lambers, 1949, p. 295.
Hyperomyzus pallidus Börner, 1952. p. 137, no. 526.

Distribution: Netherlands, England, Italy, U. S. A., Sweden, Poland (Szelegiewicz 1958), and Denmark.

Occurrence in Denmark: Found on Sonchus arvensis in Jutland at Skive (4-8-57, 30-7-58), Brund near Horsens (28-6-59), Handbjerg near Struer (16-7-59), and Blokhus in Vendsyssel (3-8-60), on Sealand at Holte (15-8-57) and Stevns (15-8-57), on Lolland at Ullerslev (16-8-57), and on Samsø at Onsbjerg (9-8-58). It is a common aphid in yellow trays (Jutland, Funen, Sealand, Lyø).

The species migrates between Ribes uva-crispa and Sonchus arvensis. It sits under the lower leaves of the summer host unlike *H. lactucae,* which prefers the upper stems.

Subgenus **HYPEROMYZELLA** Hille Ris Lambers, 1949.

62. *Hyperomyzus (Hyperomyzella) rhinanthi* (Schouteden, 1903).
Hyperomyzus (Hyperomyzella) rhinanthi Hille Ris Lambers, 1949, p. 298.
Hyperomyzella erratica Börner, 1952, p. 138, no. 531.
Hyperomyzella erratica Börner & Heinze, 1957, p. 218.

Distribution: Outside Denmark known from England, Netherlands, Belgium, Germany, Latvia, Italy, Roumania, Switzerland, Sweden, Finland, Iceland, France, and Austria.

Occurrence in Denmark: Collected from Rhinanthus at Addit Forest near Silkeborg (28-6-59), Glyngøre in Salling (10-7-59), and Strandkjær at Femmøller (8-8-59), all in Jutland. Alate individuals have been found in yellow Moericke-trays in West Jutland at Borris (26-8-55 and from 31-8 until 28-9-56), Studsgård (7-9-56), and Spangsbjerg at Esbjerg (26-8-55).

Migration occurs. The winter host is Ribes, the summer host is Rhinanthus (= Alectorolophus). Alate males were observed at Borris in the last days of September.

Genus **NASONOVIA** Mordvilko, 1914.

63. *Nasonovia pilosellae* (Börner, 1933).

Nasonovia pilosellae Hille Ris Lambers, 1949, p. 313, pl. VI fig. 2.
Nasonovia (Submacrosiphon) pilosellae Börner, 1952, p. 137, no. 521.

Distribution: Outside Denmark known from Netherlands, Germany, Sweden, and France.

Occurrence in Denmark: Collected from Hieracium pilosella at Rønbjerg near Skive (22-7-57), Ulstrup near Ebeltoft (6-7-60), and Estvadgård Plantation at Flyndersø (22-8-60), and from H. aurantiacum at Skive (16-7-58) and Studsgård (9-7-59), all in Jutland.

At Ulstrup the aphids were found sitting on upper stems and inflorescences, whereas at Estvadgård they were found in galls developed by leaf-rolling upwards along the mid rib. The aphids most often are yellowish or greenish, but a few apterous adults with a dark dorsal spot have been seen. On H. aurantiacum a mixed colony was found made up of yellow *N. ribis-nigri* and greenish-white *N. pilosellae*.

64. *Nasonovia ribis-nigri* (Mosley, 1841).

Nasonovia ribis-nigri Hille Ris Lambers, 1949, p. 316.
Nasonovia ribis-nigri Börner, 1952, p. 136, no. 519.
Nasonovia ribis-nigri Börner & Heinze, 1957, p. 214, fig. 86.

Distribution: Europe. Known from Sweden, Finland (Heikinheimo), and the Faroes.

Occurrence in Denmark: It is a very common species. In Jutland collected from Hieracium pilosella at Blokhus (10-8-60), Funder (12-7-60), Addit Forest (28-6-59), and Strandkjær at

Femmøller (5-7-60), from H. vulgatum at Legind Bjerge on Mors (3-6-59), from H. aurantiacum at Skive (16-7-58) and Kjellerup (30-6-60), from Crepis capillaris at Skive (17-6-59), Rønbjerg (22-7-57), and Brund at Horsens (28-6-59), from Lapsana communis at Skive (29-7-57), from Veronica agrestis and V. sp. at Skive (24-7-57, 15-7-58, 30-7-58), from V. officinalis in Rold Forest (4-9-58), and from Ribes uva-crispa at Skive (9-6-57, 16-5-59) and Hornum (30-5-58, H. Rønde Kristensen leg.). On Funen collected from Cichorium intybus at Svendborg (3-7-57) and Fåborg (13-7-57), and from Lapsana communis at Svendborg (3-7-57). On Sealand collected from Hieracium sp. in Copenhagen (11-7-18, Math. Thomsen leg.) and from Cichorium intybus at Fakse (15-8-57). It has also been found on Tåsinge (3-7-57), Strynø (7-7-57), Ærø (8-7-57), and Avernakø (11-7-57) on Cichorium intybus. Alate specimens have flown into yellow trays at Ørslev on Sealand, Årslev on Funen, and Borris and Jyndevad in Jutland during the summer 1956 (Heie 1960 b) and on Lyø in 1959 (Heie 1961).

The aphids migrate from Ribes to members of the plant family Compositae in the spring and return to Ribes in the autumn. Veronica (belonging to Scrophulariaceae) is a common summer host too. On goose-berries the leaves may be curled as a result of the feeding of *N. ribis-nigri* in May-June.

Genus **RHOPALOSIPHONINUS** Baker, 1920.

65. *Rhopalosiphoninus calthae* (Koch, 1854).

Rhopalosiphoninus calthae Börner, 1952, p. 139, no. 538.

Rhopalosiphoninus calthae Hille Ris Lambers, 1953, p. 7.

Distribution: England, Netherlands, Belgium, Germany, Latvia, Russia, Austria, Sweden, and Denmark.

Occurrence in Denmark: Alate specimens have been found in yellow Moericke-trays at Virum on Sealand (15-7-55) and Spangsbjerg at Esbjerg in Jutland (15-7-55).

Caltha palustris is the only host of this species.

66. *Rhopalosiphoninus tulipaellus* (Theobald, 1916).

Myzotoxoptera tulipaella Börner, 1952, p. 139, no. 536.

Rhopalosiphoninus staphyleae subsp. tulipaellus Hille Ris Lambers, 1953, p. 25.

Myzotoxoptera tulipaella Börner & Heinze, 1957, p. 219 (but — according to Hille Ris Lambers and Müller — not fig. 89).

Rhopalosiphoninus tulipaellus F. P. Müller, 1959, p. 51, fig. 1 b-c.

Distribution: England, Netherlands, Germany, Belgium, and Denmark.

Occurrence in Denmark: Collected from beets (Beta vulgaris cult.) in clamps in Jutland at Hvidbjerg at Skive (8-5-54, Hille Ris Lambers det.) and Studsgård (2-5-60), on Funen at Årslev (8-5-58) and on Sealand at Benløse at Ringsted (7-6-52). It has been taken in a yellow tray at Borris in Jutland (20-7-56). Furthermore it has been observed several times on Sealand in beet clamps (Heie 1954 and especially Petersen 1959; in Danish: kulebladlus), but it is not so common here as *Myzus persicae* Sulz. In Netherlands and Germany it seems to be quite as common as or perhaps more common than *Myzus persicae* in clamps (Martini 1953). According to observations by Hille Ris Lambers (1953) and Müller (1955) the normal hosts probably are Labiatae (Glechoma, Lamium), the underground parts of which obviously are preferred by the aphids. Petersen (1959, p. 131) supposed that the species in the autumn arrived to the clamps as eggs sitting on Lamium or other weeds growing in the beet fields. This would explain why *R. tulipaellus* in the spring may occur in clamps, which have been too cold for wintering of *M. persicae*, but never has been found in clamps in the autumn. In this connexion it ought to be pointed out, however, that hitherto *R. tulipaellus* has not been observed on Labiatae in Denmark, nor have sexuales been found outside Germany (Müller).

Genus **RHOPALOMYZUS** Mordvilko, 1921.
Subgenus **JUDENKOA** Hille Ris Lambers, 1949.

67. *Rhopalomyzus (Judenkoa) lonicerae* (Siebold, 1839).
Rhopalomyzus lonicerae Börner, 1952, p. 123, no. 476.
Rhopalomyzus (Judenkoa) lonicerae Hille Ris Lambers, 1953, p. 46, pl. II fig. 3.

Distribution: The European continent (but not England according to Eastop (1956)). Known from Sweden.

Occurrence in Denmark: Collected from Lonicera periclymenum in Krabbesholm Forest at Skive (30-9-56), from grass at Madumsø in Himmerland (13-9-60), and from a yellow tray at Borris (21-9-56), all in Jutland.

This species migrates between Lonicera, the winter host, and grasses, the summer hosts (especially Baldingera arundinacea according to Hille Ris Lambers).

Genus **CHAETOSIPHON** Mordvilko, 1914.
Subgenus **PENTATRICHOPUS** Börner, 1930.

68. *Chaetosiphon (Pentatrichopus) potentillae* (Walker, 1850).
Passerinia potentillae Börner, 1952, p. 119, no. 449.
Chaetosiphon (Pentatrichopus) potentillae Hille Ris Lambers, 1953, pl. IV fig. 4.
Passerinia potentillae Börner & Heinze, 1957, p. 178, fig. 69 e.

Distribution: Europe. Known from Sweden.

Occurrence in Denmark: Common on Potentilla anserina. Found in Jutland at Aggersund (22-7-60), Skive (1-9-56), Lyby in Salling (22-7-57), Rønbjerg (22-9-57), Legind Bjerge on Mors (4-6-59), Mellerup at Randers Fjord (13-7-59), Sønderbæk at Skalså (3-8-59), Strandkjær at Femmøller (4-8-59), and Ebeltoft (6-8-59), on Sealand at Frederikssund (18-10-50) and Holte, on Lolland at V. Ulslev (15-8-58), on Amager (14-7-50, 29-8-51, 15-5-52), on Ærø at Marstal (9-7-57), on Samsø at Ørby (10-8-58), and on Læsø (6-8-57).

Oviparous females and eggs were found on the leaves of the host in October.

69. *Chaetosiphon (Pentatrichopus) tetrarhodus* (Walker, 1849).
Passerinia tetrarhoda Börner, 1952, p. 119, no. 447.
Chaetosiphon (Pentatrichopus) tetrarhodus Hille Ris Lambers, 1953, p. 78, pl. III fig. 4, pl. IV fig. 1.
Passerinia tetrarhoda Börner & Heinze, 1957, p. 176, fig. 69 c.

Distribution: Europe, Palestine, Egypt, U.S.A., and India.

Occurrence in Denmark: Collected from Rosa in Jutland at Resen at Skive (23-7-58), Jebjerg in Salling (26-7-58), Randers (30-5-59), Strandkjær at Femmøller (4-8-59), and at Blokhus in Vendsyssel (29-7-60), on Funen at Nyborg (10-7-58), and on Samsø at Ballebjerg (11-8-58).

The species does not migrate, but feeds on Rosa from spring till autumn.

Genus **CRYPTOMYZUS** Oestlund, 1922.

70. *Cryptomyzus galeopsidis* (Kaltenbach, 1843).
Myzella galeopsidis Börner, 1952, p. 134, no. 508.
Cryptomyzus galeopsidis Hille Ris Lambers, 1953, p. 96, pl. V fig. 2.
Myzella galeopsidis Börner & Heinze, 1957, p. 209.

Distribution: Europe. It is known from Sweden, Finland, Norway, and Iceland.

Occurrence in Denmark: Very common. In Jutland

on Ribes rubrum at Skive (28-7-57, 4-8-58), on R. nigrum at Skive (4-8-58, 6-5-59), on Galeopsis at Kvissel in Vendsyssel (20-8-56), Hjørring (10-8-60), Skive (22-7-57, 1-7-59), Resen at Skive (18-7-57), Nørre Nissum (22-6-57), Studsgård (31-7-54), and Bryrup (11-7-58), on Lamium purpureum at Studsgård (9-7-59), and on Veronica at Skive (24-7-57). On Funen found on Ribes nigrum at Fåborg (6-7-58) and on Galeopsis at Sinebjerg (15-7-57). On Sealand found on Ribes rubrum at Holte (28-6-50) and on Galeopsis in Copenhagen (11-7-18, Math. Thomsen leg. et det.), furthermore at a hedge at Lille Svenstrup (5-10-60). The species has also been found in yellow Moericke-trays at Tylstrup, Borris, and Jyndevad in Jutland, at Årslev on Funen, at Ørslev on Sealand, and on Lyø (Heie 1960 b and 1961).

Ribes rubrum and R. nigrum are the winter hosts of this aphid species. In 1959 the fundatrix was mature in the beginning of May. During June the main flight to the summer hosts (Galeopsis, Lamium, Veronica) takes place. Some specimens stay on Ribes, however.

C. galeopsidis subsp. *citrinus* H. R. L., which is the non-migrating strain on Ribes rubrum, differs from *galeopsidis* s. str. in its biology, but not morphologically. Hille Ris Lambers collected in Netherlands the sexuales of this form in the middle of September, which is earlier than findings of sexuales of *galeopsidis* s. str. I collected in Denmark the sexuales in July and August, already. The above-mentioned findings on Ribes rubrum at Skive on July 28, 1957, and August 4, 1958, consisted of oviparous females and larvae of subsp. *citrinus*. Males caught in yellow Moericke-trays at Borris and Jyndevad about August 1, 1956, already, also belonged to this subspecies, perhaps (Heie 1960 b).

C. galeopsidis subsp. *dickeri* H. R. L. stays on Ribes nigrum during the summer months. Probably the viviparous female and larva found on Ribes nigrum at Skive on August 4, 1958, belong to this strain. According to Hille Ris Lambers (1953) the viviparous female of subsp. *dickeri* differs from the viviparous females of the other forms by having relatively longer antennae and the primary rhinarium of the Vth antennal segment placed farther from the apex of the segment. The length of the antenna of my specimen from Ribes nigrum is 155 % of the body length, and the distance from the rhinarium of the Vth segment to the apex of that segment is 20 % of the length of the segment, where-

as the percentages are 129 % and 16 %, respectively, on a specimen from Galeopsis, and 130 % and 17 % on a specimen from Lamium. It may be mentioned that the specimen from R. nigrum has shorter body than the others, but obviously it belongs to subsp. *dickeri*. The specimen from R. nigrum taken at Fåborg on July 6, 1958, may belong to this subspecies, too (antenna 147 % of the body length, but the distance between the rhinarium of Vth segment and the apex of the segment only 17 % of the length of the segment).

A male of *Cryptomyzus galeopsidis* has been found on Fragaria (accidentally; this is not a host of this species) at Skive on October 11, 1958, which is the normal time of occurring of sexuales of the migrating form.

This aphid species does neither cause leaf-curling, nor pseudogalls on Ribes spp.

71. *Cryptomyzus korschelti* Börner, 1938.
Cryptomyzus korschelti Börner, 1952, p. 135, no. 512.
Cryptomyzus korschelti Hille Ris Lambers, 1953, p. 104.
Cryptomyzus korschelti Börner & Heinze, 1957, p. 210.

Distribution: Netherlands, Germany, Latvia, England, Sweden, and Denmark.

Occurrence in Denmark: Collected from Stachys silvatica at Strandkjær at Femmøller in Jutland (5-8-59), at Nyborg on Funen (9-7-58), and at Furesø at Holte on Sealand (15-8-57).

The winter host is Ribes alpinum, the summer host Stachys silvatica.

72. *Cryptomyzus ribis* (Linné, 1758).
Cryptomyzus ribis Börner, 1952, p. 135, no. 511.
Cryptomyzus ribis Hille Ris Lambers, 1953, p. 108, pl. V fig. 3.
Cryptomyzus ribis Börner & Heinze, 1957, p. 209.

Distribution: According to Hille Ris Lambers probable of palaearctic origin, but transported to other parts of the world with its main winter host, Ribes rubrum. It is known from Sweden and Finland.

Occurrence in Denmark: Collected from Ribes rubrum in Jutland at Skive (10 5, 30-6, 24-7-59) and on Sealand at Hellebæk (13-6-18, Math. Thomsen leg. et det.) and Holte (28-6-50). Alate specimens have been taken in Moericke-trays in Jutland at Borris and Jyndevad, on Funen at Årslev, and on Sealand at Ørslev in 1956 (Heie 1960 b). The usually reddish pseudogalls

on the leaves of R. rubrum are known from all parts of the country (Plantesygdomme i Danmark, årsoversigter samlet ved Statens plantepatologiske Forsøg; Bovien & Thomsen: Haveplanternes Skadedyr; Henriksen 1944; syn. *Myzus ribis*, in Danish: ribsbladlus).

According to Hille Ris Lambers (1953) the winter hosts are Ribes rubrum and occasionally R. bracteosum, R. cynosbati, R. longeracemosum, and R. missouriense. As shown by dr. Dicker, East Malling, England (Hille Ris Lambers 1953), there is a strain which remains on Ribes during the summer, producing both alate and apterous males in the autumn, whereas the usual form migrates in the beginning of the summer to Stachys, producing alate males only in the autumn. Probably the finding on Ribes rubrum at Skive on July 24, 1959, represents the non-migrating form.

The most normal summer hosts of the migrating form are Stachys annua and S. palustris (Hille Ris Lambers in litt.).

Genus **PLEOTRICHOPHORUS** Börner, 1930.

73. *Pleotrichophorus filaginis* (Schouteden, 1906).

Pleotrichophorus filaginis Hille Ris Lambers, 1953, p. 123, pl. V fig. 4, pl. VI fig. 2.

Distribution: Belgium, Netherlands, and Denmark.

Occurrence in Denmark: Collected from Helichrysum (Gnaphalium) arenarium at Strandkjær at Femmøller in Jutland (4-7, 8-9-60).

Single apterous viviparous females with few larvae were found feeding on the undersides of the lower leaves. It is difficult to detect them, because their colour looks like the surface of the greyish green, haired leaves. The aphids themselves are pale greenish with yellow to brown antennae and legs. The body is covered by small, capitate hairs yielding it a greyish appearance (fig. 6).

I made the determination of the specimens by means of the key and the description written by Hille Ris Lambers (1953). Dr. Hille Ris Lambers most kindly certified the determination. Morphologically there seems to be no difference from the specimens found in Netherlands, but the colour and the host are different. The colour of *P. filaginis* is said to be purplish grey, not green, and Helichrysum arenarium has not been recorded as a host plant of *P. filaginis* before. In Belgium it was described

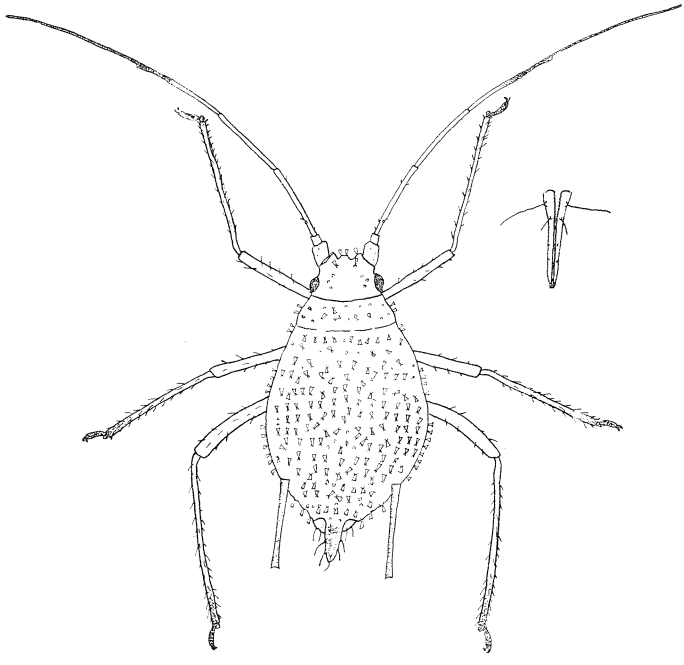

Fig. 6. *Pleotrichophorus filaginis* Schouteden, apterous viviparous female. Natural size about 1½ mm. The apical segment of the rostrum is a little more enlarged.

by Schouteden from Filago gallica. In Netherlands Hille Ris Lambers found it on Gnaphalium sylvaticum.

It is a non-migrating species.

74. *Pleotrichophorus glandulosus* (Kaltenbach, 1846).

Pleotrichophorus glandulosus Börner, 1959, p. 165, no. 613.

Pleotrichophorus glandulosus Hille Ris Lambers, 1953, p. 126, pl. VI fig. 1.

Pleotrichophorus glandulosus Börner & Heinze, 1957, p. 249.

Distribution: Europe and Asia. It is known from Sweden.

Occurrence in Denmark: Collected from Artemisia vulgaris at Skive (18-7-56, 25-6-57), Harboøre (16-7-59), Torslev near Brovst (22-7-60), and Store Vildmose (3-8-60), all in Jutland. It has furthermore been taken in yellow Moericke-trays at Jyndevad in Jutland (8-6-56) and Ørslev on Sealand (3-8-56) and observed, but not collected, on Artemisia vulgaris at Byrum on Læsø (9-8-57).

This species does not migrate. The aphids feed on the under-

sides of the leaves, especially the lower ones, of Artemisia vulgaris, which is the only host.

Genus **CAPITOPHORUS** van der Goot, 1913.

75. *Capitophorus carduinus* (Walker, 1850).
Capitophorus carduinus Börner, 1952, p. 134, no. 505.
Capitophorus carduinus Hille Ris Lambers, 1953, p. 140.
Capitophorus carduinus Börner & Heinze, 1957, p. 208.

Distribution: Outside Denmark known from England, Netherlands, Germany, Poland, and Sweden.

Occurrence in Denmark: Collected from thistles at Frederikssund on Sealand (18-10-50) and at Thorum in Salling (21-8-57) and Skive (24-9-57) in Jutland, and on Veronica sp. at Arninge on Lolland (16-8-57).

Sexuales have been found in September-October. The only hosts of this species are Cirsium and Carduus.

76. *Capitophorus elaeagni* (del Guercio, 1894).
Capitophorus braggi Börner, 1952, p. 133, nr. 501.
Capitophorus elaeagni Hille Ris Lambers, 1953, p. 144.
Capitophorus elaeagni Börner & Heinze, 1957, p. 207.

Distribution: Europe, North America, South America, and New Zealand. It is known from Sweden.

Occurrence in Denmark: Collected from yellow Moericke-trays at Jyndevad in Jutland (10-8-56) and Ørslev on Sealand (20-7, 3-8-56).

The winter hosts of this aphid species are Elaeagnus and Hippophaë, the summer hosts are Cirsium, Carduus, Lappa, and Cynara.

77. *Capitophorus hippophaes* (Walker, 1852).
Capitophorus hippophaes Börner, 1952, p. 133, no. 500.
Capitophorus hippophaes Hille Ris Lambers, 1953, p. 151.
Capitophorus hippophaes Börner & Heinze, 1957, p. 207.

Distribution: Europe, Asia, North America. It is known from Sweden.

Occurrence in Denmark: In Jutland collected from Hippophaë rhamnoides and (accidentally) Betula pubescens at Skive (spring and autumn), from Polygonum sp. at Kvissel in Vendsyssel (20-8-56) and Strandkjær at Femmøller (3-8-59), from P. lapathifolium at Rettrup in Salling (22-9-57), and from yellow trays at Tylstrup, Borris, and Jyndevad. On Fur observed (but not collected) on Polygonum (22-8-57). On Sealand collected from

Hippophaë at Hellebæk (22-8-17, Math. Thomsen leg.) and from a yellow tray at Ørslev near Ringsted. On Funen collected from a yellow tray at Årslev. On Falster collected from Polygonum at Nykøbing F. (16-8-57). On Samsø collected from Polygonum at Kolby (12-8-58) and (accidentally, 1 al. viv.) from Rumex thyrsiflorus at Besser (10-8-58).

The winter hosts are Hippophaë and Elaeagnus, the summer host Polygonum. The eggs hatch at Skive on Hippophaë rhamnoides in the beginning of April. The fundatrices may be mature about May 1, and then they bear larvae, which become alate spring migrants in the last part of May. The returning to the winter hosts takes place about September.

78. *Capitophorus horni* Börner, 1931.

Capitophorus horni Börner, 1952, p. 134, no. 507.
Capitophorus horni Hille Ris Lambers, 1953, p. 158.
Capitophorus horni Börner & Heinze, 1957, p. 208.

Distribution: Germany, Netherlands, England, Sweden, and Denmark.

Occurrence in Denmark: In Jutland collected from Beta vulgaris (which is not a host) at Hurup, Thy (20-9-56, 2 ovip., the determination has been certified by dr. Hille Ris Lambers) and from Cirsium arvense at Hvidbjerg in Salling (22-9-57, oviparous females) and Hirtshals (26-7-60, al. and apt. viv.). On Sealand taken in yellow Moericke-trays at Lyngby (12-8-55, 1 apt. viv.) and Ørslev (3-8-56, 2 al. viv.).

Börner made his descriptions on material from Cirsium oleraceum. I have sought for the aphid on this thistle species in vain, but found it on C. arvense, just as Hille Ris Lambers has done in Netherlands. According to Hille Ris Lambers the aphids on C. arvense belong to *Capithophorus horni* Börner, but to another subspecies (*gynoxantha*) than the aphids on C. oleraceum, because the apical rostral segment is longer (1,35—1,45 times as long as 2nd joint of hind tarsi in *gynoxantha,* 1,20—1,25 in *horni* s. str.).

The proportion between the length of the apical segment of the rostrum and the second joint of the hind tarsus is 1,44 and 1,50 in two apterous viviparous females from a yellow tray and C. arvense, respectively, and 1,30 and 1,35 in two oviparous females from C. arvense and Beta vulgaris, respectively. So only subsp. *gynoxantha* H. R. L. has been found in Denmark with certainty.

The species is not migratory. It lives on Cirsium from spring till autumn, and the eggs will hibernate there.

79. *Capitophorus similis* van der Goot, 1915.
Capitophorus elaeagni Börner, 1952, p. 133, no. 502.
Capitophorus similis Hille Ris Lambers, 1953, p. 165, pl. VI figs. 3, 4.
Capitophorus similis Börner & Heinze, 1957, p. 208.

Distribution: Europe and Central Asia. It is known from Sweden.

Occurrence in Denmark: In Jutland collected from Hippophaë rhamnoides at Skive (17-9-56, 9-6-57, 1-6-58, 24-5-59) and Resen at Skive (27-10-57), from Tussilago farfara at Skive (15-8-56) and from a yellow tray at Jyndevad (22-6-56), observed (but not collected) on Tussilago farfara on Fur (22-8-57), at Resen at Skive (19-9-57), and Strandkjær at Femmøller (4-8-59). On Funen collected from Petasites hybridus at Svendborg (3-7-57) and from a yellow tray at Årslev (24-8, 31-8-56). On Sealand collected from Hippophaë in Copenhagen (1-11-17, Math. Thomsen leg.), from Tussilago at Holte (15-8-57) and from a yellow tray at Ørslev (17-8-56); besides observed on Tussilago at Jystrup between Roskilde and Ringsted (14-8-58). On Samsø at Sælvig (12-8-58) and on Læsø at Vesterø (6-8-57) observed on Tussilago farfara.

The eggs hibernate on Hippophaë (and Elaeagnus). In 1959 fundatrices were mature about May 1, and their offspring had got wings on May 24. It will usually be later, because the spring began at an unusually early date in 1959. In 1957 the eggs hatched about April 1, but nymphs with wing pads were not observed until the first days of June. In 1958 the fundatrix had only small larvae on June 1.

The summer hosts are Tussilago and Petasites. The return migrants may be found in September.

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(continued from Entom. Medd. 31, 1961, p. 95).

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