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Aphid species from East and West with some Additions to the Aphid Fauna of Switzerland and with the Description of a new Species. (Additions to the Aphid Fauna of Switzerland III)[1]

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Starting from a number of aphid species collected by Dr. R. STÄGER in the «Walliser Steppenheide», the occurrence of several species in the East and in the West is discussed. A preference for xerothermous steppe habitats in Europe and the Southern Ukraine could be ascertained for two species. A distribution in Europe and Western Asia is noted for four species, and attention is drawn to the fact that for several Central- and Eastern-European species closely related species exist in Asia. The remarkable immigration or accidental introduction of the Central-Asian *Impatientinum asiaticum* into more western regions is discussed. *Macrosiphum silvaticum* sp. n., a species closely related to *M. knautiae* HOLM. is described, and several additions to the aphid fauna of Switzerland are given.

In 1957, the then 90-year-old Swiss naturalist, botanist and entomologist Dr. ROBERT STÄGER published a paper on the aphid fauna of the «Walliser Steppenheide». The association of the «Steppen- or Felsenheide» of the Swiss Valais is characterized by the occurrence of Pontic-Asiatic as well as Mediterranean-xerothermous elements of its flora and fauna. The climate is similar to that of the steppes around the Black Sea, and certain parts of the Southern Ukraine.

The paper of STÄGER contains data on 18 aphid species which he had found and which had been indentified by Dr. D. HILLE RIS LAMBERS, Bennekom, The Netherlands. According to STÄGER, the host plants of 7 out of the 18 species indicate an Eastern distribution. Their occurence in the «Walliser Steppenheide» is however apparently not due to immigration from Eastern regions, but attributed to the existence of a warm steppic climate in the past. Pontic and Mediterranean elements of the flora and fauna of the «Walliser Steppenheide» are therefore regarded to be relic.

In view of the intensified investigations of the aphid fauna of Eastern European countries during the past decades, a discussion of various aspects of the occurrence of certain aphid species in East and West seems to be justified.

APHID SPECIES COLLECTED BY DR. R. STÄGER IN THE «WALLISER STEPPENHEIDE» HABITAT

Macrosiphioniella stägeri HRL.

This species was described by HILLE RIS LAMBERS (1947a) from specimens (4 viv. apt. fem.) collected by STÄGER on May 24, 1946 at Raron/Swiss Valais on *Centaurea*

[1] Presentation at the Symposium on Evolutions and Biosystematics of Aphids, Jablonna near Warsaw, Poland, April 5–11, 1981. Considering the political situation in Poland at present, there is little hope that the Proceedings of the Jablonna Symposium will ever be printed. The original manuscript is therefore published here, in honour of Professor P. BOVEY.

vallesiaca (formerly recorded as *C. stoebe*). Additional material including winged specimens, was collected by STÄGER on May 26, 1946 at Zeneggen on the same host plant (HILLE RIS LAMBERS, 1947b). BÖRNER (1952) notes the occurrence of this aphid (syn. *M. heinzei* CB. 1950) in Switzerland and Germany (Thuringia), with *Centaurea inaculosa* var. *rhenana* (recorded as *maculosa, rhenana* or *stoebe*) as host plant. SZELEGIEWICZ (1962, 1966) ascertained the species for Eastern Europe (Bulgaria and Poland). He states that *M. stägeri* is a South-European species, which is common in the Pannonic steppes, and is restricted to xerothermous areas in Poland. The special habitat requirements are therefore also documented by its East-European distribution.

Macrosiphoniella absinthii L.

STÄGER found this species on May 22, 1947 at Zeneggen/Swiss Valais on *Artemisia absinthium*. According to HILLE RIS LAMBERS (1947a, b), this species lives also on other species of *Artemisia* and occurs throughout Europe to Central Asia (Siberia), and in Palestine. BÖRNER (1952) states that it is common on absinth throughout Central Europe, and sometimes noxious. More recently it has been recorded from England (EASTOP, 1962), Scotland (SHAW, 1964) and Sweden (DANIELSSON, 1974). BODENHEIMER & SWIRSKI (1957) record the species from Egypt and Israel. It should also occur in Morocco. East-European records include Bulgaria (SZELEGIEWICZ, 1962; TASHEV, 1964) and various parts of Poland (SZELEGIEWICZ, 1958, 1961, 1964).

In Switzerland, *M. absinthii* has recently been found several times, e.g. Dr. ANNA MAURIZIO, Liebefeld/Bern, sent 6 winged specimens for identification on July 1, 1960. The aphids were collected on *Artemisia* sp., the locality was not given. LAMPEL (1975, 1976) found *M. absinthii* on *Artemisia absinthium* in the botanical garden of the city of Fribourg.

Titanosiphon artemisiae KOCH

STÄGER found this species on August 9, 1946 near Sitten/Swiss Valais on *Artemisia campestris*. According to HILLE RIS LAMBERS (1947a) it is distributed in Germany, Italy and Poland (described by JUDENKO as *T. minkiewiczi* n. sp.). BÖRNER (1952) states that *T. artemsiae* is widely distributed in Central Europe, but of sporadic occurrence, BÖRNER & FRANZ (1956) record it for the North-Eastern Alps, and LECLANT (1966) for Southern France. SZELEGIEWICZ (1958, 1965) and HUCULAK (1965) confirm its existence in various parts of Poland.

Aphis euphorbiae KLTB.

WERDER (1931) found this species in the Alsace along the border to Switzerland. The typical host plant is *Euphorbia cyparissias*. STÄGER collected it on May 25, 1946 near Raron on *E. seguieriana*. He assumed a more Eastern distribution, which had however so far not been confirmed. In Central Europe, *A. euphorbiae* is relatively common (BÖRNER, 1952). I obtained material from Miss G. SOMMER (Commonwealth Insititute of Biological Control, Delémont) which had been collected on June 6, 1978 in Lower Austria (Trübensee) on *E. virgata*. The sample contained 4 alate and 2 apterous virgines, which I identified as *A. euphorbiae* with the key of F.P. MÜLLER (1969).

Chaetosiphella stipae HRL.

Dr. STÄGER found specimens of this species on August 8, 1946 in the vicinity of Granges near Sitten on the paniches of *Stipa capillata*. HILLE RIS LAMBERS (1947a) referred these specimens to *Chaetosiphella thernavini* ssp. *stipae*. *Ch. thernavini* MORDV. 1921 was described from specimens collected on an unidentified grass species in Bessarabia. The subspecies *thernavini stipae* is now regarded as a species. According to BÖRNER (1952), *Ch. stipae* is also known to occur in the Mediterranean area. There are no records from East-European countries. *Ch. thernavini* has not yet been recorded from the Mediterranean area.

Microsiphum wahlgreni HRL. (fig. 6)

The host plant of this aphid is *Artemisia absinthium*. The descripton of HILLE RIS LAMBERS is based on 3 fundatrices, collected by STÄGER on May 7, 1947 near Sitten/Swiss Valais, and apterous and alate virgines collected by WAHLGREN in Sweden. *M. wahlgreni* differs only slightly from the West-Asiatic *M. jazykovi* NEVS. according to BÖRNER (1952), *M. wahlgreni* is a synonym of *M. jazykovi*, but EASTOP & HILLE RIS LAMBERS (1976) confirm the existence of two separate species.

The assumed occurrence in Eastern Europe (STÄGER, 1957) has so far only be confirmed for Bulgaria (TASHEV, 1961).

Specimens of *M. wahlgreni* were sent to me for indentification by Dr. H. KUTTER, who collected 2 apterous and 2 alate virgines on July 19, 1966 in the vicinity of Evolène/Swiss Valais on *A. absinthium*. *M. wahlgreni* was visited by *Formica cordieri*.

Uroleucon chondrillae NEVS.

HILLE RIS LAMBERS (1950) described the specimens collected by STÄGER on July 16, 1948 at Zeneggen on *Chondrilla juncea* as *Dactynotus margarithae*. *Dactynotus* including subgen. s. str. and subgen. *Uromelan* are now replaced by the genus *Uroleucon*. It was later found that *D. margarithae*, which belongs to the *D. cichorii* group, is identical with *Uroleucon chondrillae* NEVS.

BÖRNER (1952) states that *M. chondrillae* has been found along the Middle-Rhine, and REMAUDIÈRE is said to have found it in the basin of Marseille (LECLANT, 1966). SZELEGIEWICZ (1962, 1964) records the species from Bulgaria and Poland.

ONE FURTHER APHID SPECIES COLLECTED BY DR. R. STÄGER

Stägeriella necopinata CB.

HILLE RIS LAMBERS (1947b) gives a diagnosis of the new genus, which is closely related to the genus *Hyadaphis* KIRK., and describes the typus generis *St. necopinata*, in detail. On October 18, 1946, Dr. STÄGER found 4 oviparous females and 4 winged males on *Galium pupureum* near Maroggia/Tessin which could at first not be identified. Later HILLE RIS LAMBERS found specimens of *St. necopinata* on *G. mollugo* during the summer, and was able to rear sexuales which enabled him to identify the specimens collected by SÄGER as *St. necopinata*. BÖRNER (1952) records the species from *G. verum*. According to HILLE RIS LAMBERS, *St. necopinata* is to a certain extend related to *Hyadaphis obscurus* THEOB. (Syn. *H. conica* CB), an eastern and Mediterranean species living on various umbelliferous plants.

In addition to Germany and Switzerland, *St. necopinata* has also been found in Sweden (Ossiannilsson, 1959; Danielsson, 1974), and in Northern Poland (Masurian Lakes) on *G. verum* (Szelegiewicz, 1975).

MORE RECENT RECORDS

Acaudinum longisetosum Holm.

Holman (1970) gives a detailed account of the characteristics differentiating the two closely related species *Acaudinum dolychosiphon* Mordv. (= *A. scabiasae* Hrl. = *A. centaureae* Koch) and *A. longisetosum* sp. n. The two species can for instance be separated by the different lenght of the setae on the femur and the ventral part of the body. The descripton is based on type specimes collected on June 20, 1966 in Southern Moravia, Czechoslovakia, on *Centaurea scabiosa*, and numerous paratypes found on *C. jacea*, *C. scabiosa*, and *C. stoebe* in Czechoslovakia. Holman studied also apterous and alate viviparous females which had been collected by Hille Ris Lambers on April 29, 1950 near Visp, Swiss Valais, on *C. scabiosa*. Additional specimens originate from Central Slovakia (Tatry mountains) and the Ukrainian steppe.

A. longisetosum is predominantly found on the apical parts of *C. scabiosa*, its preferred host plant, whilst *A. dolychosiphon* generally colonizes the basal parts covered by earth-mounds constructed by ants, and can be found on both *C. jacea* and *C. scabiosa*.

According to Holman there is an ecological and geographical separation of the two species. *A. longisetosum* is found in warm and dry habitats, like the steppes in the Ukraine, or the collection site in Switzerland, near Visp. In contrast, *A. dolychosiphon* has been recorded from cooler areas like the vicinity of Moscow and Leningrad, the British Isles and the Netherlands. An overlap of the distribution areas of the two species is only documented for Czechoslovakia.

Macrosiphum silvaticum sp. nov. (fig. 1–5)

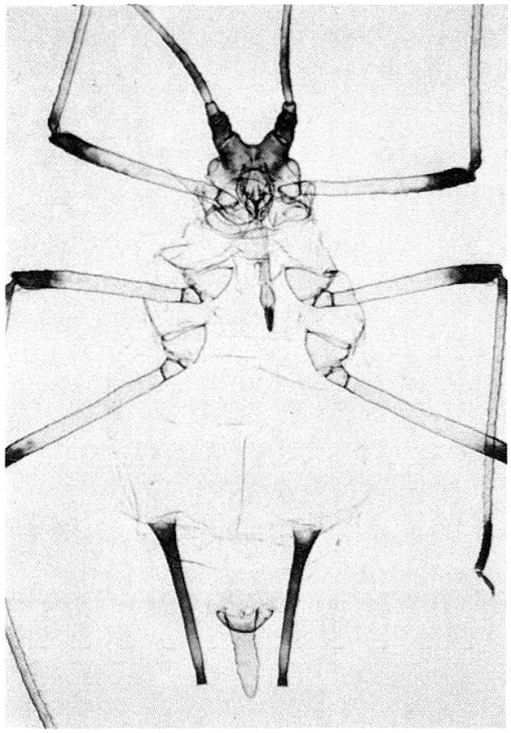
Holman (1972) described *Macrosiphum knautiae* as a new species belonging to the *M. rosae* L. species complex and gives the characteristics differentiating *M. knautiae* from *M. rosae* and *M. weberi* Cb. The type material originates from two localities in Czechoslovakia (Moravian Karst region North of Brno) from *Knautia drymeia*, and from two localities in Switzerland on *K. silvatica*, collected by Hille Ris Lambers.

Holman comments on the intraspecific variation as follows: «...apart from the host species, the Swiss and Moravian populations differ also in some morphological characteristics. All morphs differ in the relative length of the ultimate rostral segment and the length of dorsal and antennal hairs».

When a larger number of specimens from Switzerland became available, additional morphological studies seemed to be justified. The results of these comparative examinations fully confirmed the expectation that the specimens collected in Switzerland from *K. silvatica* are not identical with those of *M. knautiae*. It is therefore proposed to describe the species from *K. silvatica* as new. The new species is named *Macrosiphum silvaticum* for one of the two known hostplants, *Knautia silvatica*.

Description of the species

Some morphological characteristics and measurements of the different morphs are given in table 1. A comparison of *M. silvaticum* n.sp. with *M. rosae* L. and *M. knautiae* HOLM, is made in table 2.



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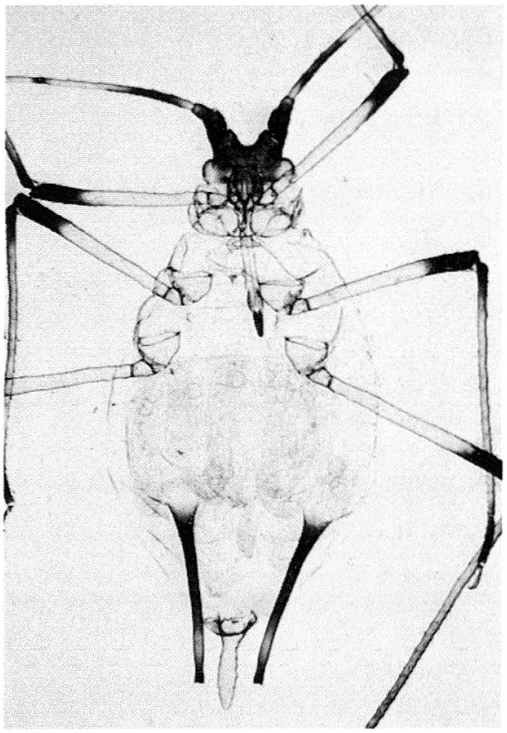

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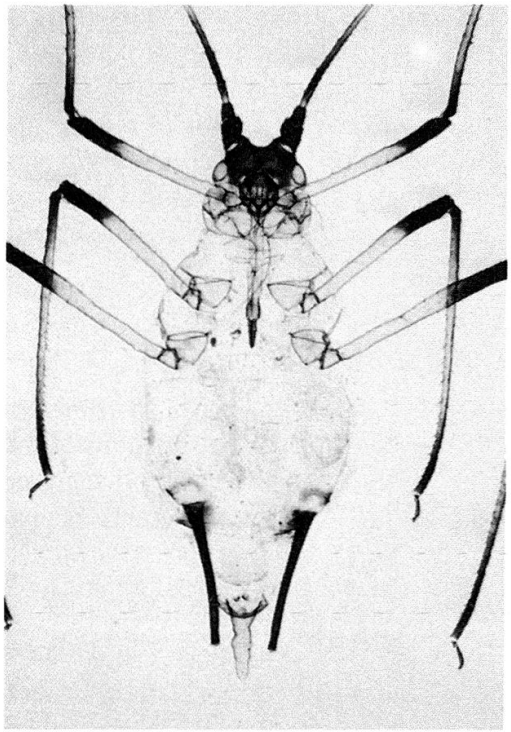

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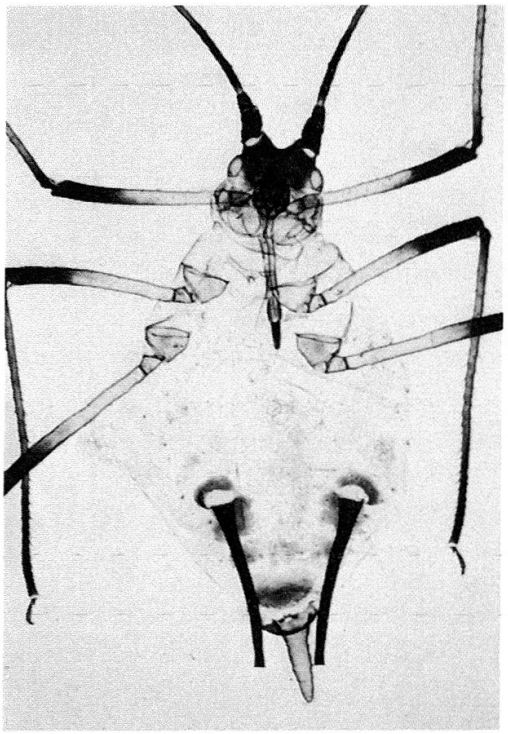

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Fig. 1–4: *Macrosiphum silvaticum sp. nov.* viv. apt. fem. with advancing sclerotisation of the tergites 5–8. Enlargement 23 X.

Table 1: *Macrosiphum silvaticum* n.sp., morphological characteristics and measurments in mm of different morphs

Morphs	viv. apt. fem.	viv. al. fem.	ovip. fem.
Number of specimens (samples)	20 (10)	6 (2)	4 (2)
Lenghts in mm			
Body	3.05–4.33	3.01–4.05	2.94–3.49
Antennae	3.85–4.26	3.79–4.66	3.99–4.06
Siphunculi	0.90–1.25	0.95–1.10	0.99–1.05
Cauda	0.46–0.67	0.44–0.58	0.46–0.50
Ratios			
Antennae/body	0.94–1.39	1.09–1.41	1.22–1.38
Processus terminalis/base VI	4.64–6.09	4.28–6.08	5.50–6.40
Ultimate rostral segment/ hind tarsus II	1.19–1.39	1.24–1.31	1.27–1.37
Siphunculi/body	0.27–0.37	0.24–0.32	0.29–0.36
Siphunculi/cauda	1.65–2.05	1.88–2.20	2.00–2.17
Numbers of secondary rhinaria	13–23	49–66	13–18

Apterous viviparous female (from 35 specimes)

Body long and spindel-shaped, about 3–4,3 mm in length. Antennae about 3,8–4,5 mm. Proportion of segments III–VI: 100, 69–89, 55–75, 15–20 + 78–110. Processus terminalis about 4,6–6,1 as long as the basal part of segment Vl. Secondary rhinaria in the basal part (⅓–½) of segment III, along one side. Rostrum reaching to the hind coxae, ultimate rostral segment rather long and narrow. Marginal tubercles on prothorax and normally also on adominal segments 2–4. One or two spinal tubercles exceptionally present on abdorminal tergite 8. Siphunculi long and slender with enlarged base and constricted in the apical reticulated part. Cauda long and sword-shaped, usually only a little constricted at basal third.

Alate viviparous female (from 6 specimens)

Body about 3–4 mm long. Antennae about 3,8–4,7 mm in length. Proportions of segments III–VI: 100, 73–91, 67–79, 18–20 + 95–111. Processus terminalis about 4,3–6,1 time as long as the basal part of segment VI. Secondary rhinary on segment III, more or less on one side of the segment. Siphunculi and Cauda as in apterous viviparous forms.

Oviparous female (from 4 specimens)

Length of the body about 2,9–3,5 mm. Antennae about 4 mm in length. Processus terminalis 5,5–6,4 time as long as the base of antennal segment VI. Marginal tubercles normally also on abdorminal segments 6–7. Pairs of spinal tubercles on abdominal tergites 8, in three from the four available specimens also on abdorminal tergite 7. Hind tibiae swollen, with about 400 and more small pseudosensoria.

Chaetotaxy (from 20 viv. apt., 6 viv. al. and 4 oviparous females)

Antennal hairs on segment III about 0,83–1,14 time as long as the basal diameter of this segment but in the available alate viv. fem. not longer as 0,94 time as long as this diameter. Antennal and body hairs somtime a little spathulate. Frontal hairs of the head 1,11–1,91 time as long as the basal diameter of the third antennal segment. Apical rostral segment with 7–10 basal hairs. Abdominal tergite VIII with 5–6 hairs, 1,22–1,63 times as long as the basal diameter of segment III of the antennae. Ventral hairs on the trochanters about 0,7 time as long as the trochanter-femoral suture. Longest hairs on the middle part of hind tibiae about 0,8–1,2 time as long as the middle diameter of the tibiae. Anterior half of genital plate in apterous and alate viviparous females bearing as a rule 2, rarely 3 hairs. Oviparous females with 5–10 basal hairs on the genital plate. Cauda in apterous viviparous females with 11–13, in alate viviparous females with 9–11 and in oviparous females with 12–14 hairs.

Colour and pigmentation (see also figs. 1–5)

Apterous viviparous females in life green but rarely also red forms are found. Macerated specimens with dark or blackish parts of the head, antennae, legs, siphunculi and dorsal sclerites. In alate viv. fem. head, antennae and thorax more or less uniformly brown to blackish. In apt. viv. females antennal segment III sometimes with the real base and the distal part pale but basal part with the rhinariae smoky to blackish. Antennal segment IV sometimes with basal part pale. Apical rostral segment and distal part of femura brown to blackish. Tibia of viv. apt. females with a more or less pale middle part. Siphunculi normally black but sometimes with the base and the distal part before reticulation pale. Abdorminal sclerites mainly more or less completely pale or diffusely pigmented only. Ante- und postsiphuncular sclerites sometimes brownish to black. Distinct marginal sclerites on tergites 1 to 4 only rarely present. Abdominal tergite 7 then with large marginal sclerites, fusing together with small spinal sclerites into an incomplete transversal bar; segment 8 with a more or less complete transversal bar. Pigmentation of alate viv. females see fig. 5. In oviparous females dorsal pigmentation vary in the same way as in viv. apt. females.

Host-plants: Knautia silvatica and *Knautia arvensis*, on the lower parts of the leaves and on the shoots of the plants.

Bionomy: Holocyclical, monoecious. Fundatrices have been found by Hille Ris Lambers near Airolo in southern Switzerland, May 1950. Oviparous females appeared in October 1958 near Zurich and in September 1964 near Sils Maria in the upper Engadin.

Type material:

The types originate from 10 different localities in Switzerland. Furthermore specimens from 2 samples, collected by Dr. D. Hille Ris Lambers in Switzerland in 1950, with apterous and alate viv. females and 3 fundatrices, mentioned by Holman as Paratypes of *M. knautiae*, may belong to the new species.

Holotype: Slide no. 5936, 1 apterous viviparous female from *Knautia silvatica* from the bord of the Türlersee near Aeugst, Ct. Zurich, July 9, 1958, coll. and leg. W. Meier.

Paratypes:

1. Edlibach near Menzingen, Ct. Zug, from *Knautia silvatica*, September 15, 1958, 1 viv. apt. fem., coll. and leg. W. MEIER.
2. Same locality as holotype, from *Knautia silvatica,* October 5, 1958, 1 viv. apt. fem. and 5 oviparous fem., coll. and leg. W. MEIER.
3. Sils Maria, Engadin, Ct. Graubünden, from *Knautia arvensis*, September 9, 1964, 1 oviparous fem., coll. and leg. W. MEIER.
4. Reckenholz near Zurich, from *Knautia arvensis*, July 23, 1966, 2 viv. apt. fem., coll. Dr. W. KÜNZLI.
5. Sihlbrugg Ct. Zurich, from *Knautia silvatica*, July 16, 1968, 2 viv. apt. fem., coll. and leg. W. MEIER.
6. Oberhallau, Ct. Schaffhausen, from *Knautia arvensis*, April 17, 1974, 10 viv. apt. fem. and 1 viv. al. fem., coll. H. SUTER.
7. Oberhallau, Ct. Schaffhausen, from *Knautia arvensis*, May 14, 1974, 13 viv. apt. fem. and 6 viv. al. fem., soll. H. SUTER.
8. Oberhallau, Ct. Schaffhausen, from *Knautia* sp., June 10, 1974, 5 viv. apt. fem. and 5 viv. al. fem., coll. Dr. S. KELLER.
9. Zuoz, Engadin, Ct. Graubünden, from *Knautia silvatica*, July 23, 1977, 8 viv. apt. fem., coll. Prof. Dr. W. SAUTER.

Holotype and most paratypes in autor's collection at Zurich-Reckenholz, some paratypes will be given to Dr. J. HOLMAN, Prague CSSR, Prof. Dr. H. SZELEGIEWICZ Warsaw, Poland, Prof. Dr. F.P. MÜLLER, Rostock DDR and Dr. V.F. EASTOP, British Museum (Natural History), London.

Geographical distribution:

The species till now has been found at very different places in Switzerland, including several localities on lower regions as well as prealpin and mountain regions in the eastern alps of Switzerland (two localities in the upper Engadin). As mentioned above, the species has also been found south of the alps in Ct. Tessin[2].

Differentiation between M. rosae L., *M. knautiae* HOLM., *and M. silvaticum n. sp.*

The question of specific discrimination in the *M. rosae*-group is carefully discussed in HOLMAN'S paper. The values in his tables and in figure 1 shows that separation of the different membres of the group is possible with special regard to the length of

[2] In a letter of April 25, 1983 to the author, Dr. R. RAKAUSKAS of Lithuania (VVU, Zoologijos Katedra, Čiurlionio 21/27, Vilnius, 232031 Lietuvos ISR-USSR) wrote: «In 1980 I found *Macrosiphum* sp. on *Knautia arvensis* (L.) COULT . Investigations carried out in 1980–1982 showed that the species is holocyclic monoecious on *Knautia arvensis*, does not live on *Rosa dumalis* BECHST., *R. rugosa* THUNB., *Rosa* spp. cult., and is widely distributed in South-Eastern Lithuania. According to *Macrosiphum rosae* – group key (HOLMAN, 1972), the species is *M. knautiae* HOLMAN, 1972. Dr. HOLMAN kindly examined specimens from Lithuania, and wrote me, that they were identical with the so-called «alpine population» of *Macrosiphum knautiae*, that you have described as *Macrosiphum silvaticum* sp. n. – According to the key, widely used by the Soviet aphidologists (SHAPOSHNIKOW, 1964), *Macrosiphum* on *Knautia* is determined as *M. rosae* (L.). I am going to publish data illustrating the presence of two *Macrosiphum* species on *Knautia arvensis* in Lithuania (*M. rosae* and *M. silvaticum*). – It is questionable, whether the Proceedings of the Warsaw Symposium will be published after the death of Dr. H. SZELEGIEWICZ (a copy of the manuscript of your report at Warsaw has been kindly sent to me by Dr. J. HOLMAN). If You are going to publish the description of *M. silvaticum* elsewhere, I'd greatly appreciate the reprint. Until then I'll present the species as *Macrosiphum silvaticum* MEIER, in litt.»

the ultimate rostral segment and to the ratio of this segment to hind tarsus II. Not very clear appears at moment if differences in hair-lengths may be useful for separation of the different taxons too.

The type material of *M. knautiae* HOLM. (including some alpine specimens of the new *M. silvaticum*) may be differentiated from *M. rosae* L. and *M. weberi* CB. by the length of ultimate rostral segment. The same is true for the «Alpine population of *M. knautiae*», now named *M. silvaticum*. Separation between *M. knautiae* and *M. silvaticum* is as figure 1 in HOLMAN'S paper and the results of our investigations (table 1 and 2) shows possible in regard of the ratio of ultimate rostral segment to hind tarsus II.

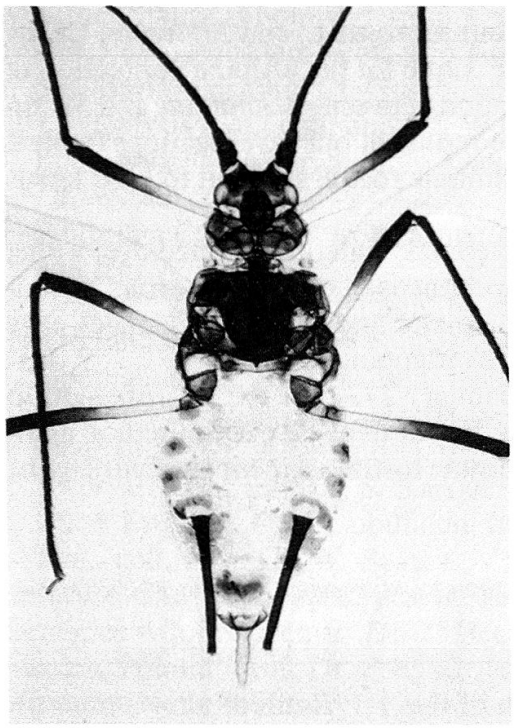
Samples from rather different sites of Switzerland, material collected over a long period from 1950–1977 and measurements of specimens of different morphs including fundatrices, apterous and alate viviparous females and oviparous females gave rather constant results. There is only very little overlapping.

As mentioned by HOLMAN in a letter of January 27, 1981 the *M. rosae*-group might appear a good example for a computer program of stepwise discrimination analysis. Beside the real and the relative length of ultimate rostral segment also hairlengths

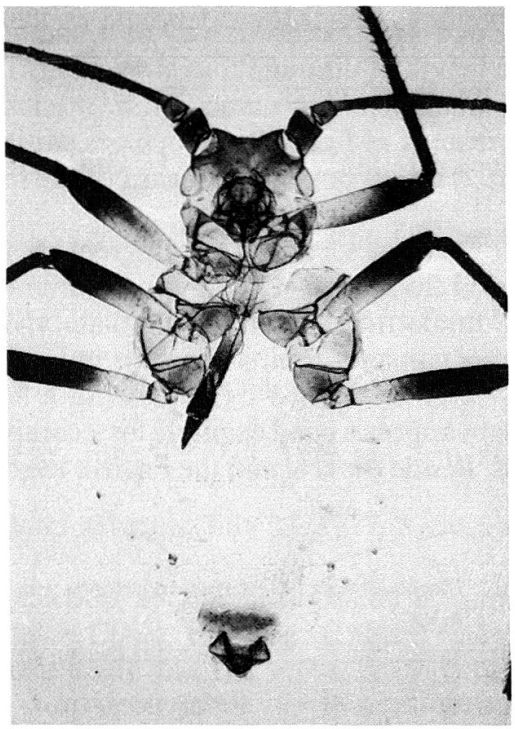
Tab. 2: Morphological differentiation between *Macrosiphum rosae* L., *M. knautiae* HOLM. and *M. silvaticum* n. sp.

Species/origin of populations/morphs	References, number of specimes	Length of the ultimate rostral segment in mm	Ratio of ultimate rostral segment to hind tarsus II
M. rosae (from Czechoslovakia)	HOLMAN, 1972 fig 1, p. 183 (approximately)	(approximately)	HOLMAN, 1972 p. 183
apterous viv. fem.	66	0.139–0.178	0.90–1.17
M. knautiae Moravian population	HOLMAN, 1972 table 1		
apterous viv. fem.	124	0.185–0.215	1.40–1.78
alate viv. fem.	23	0.193–0.218	1.37–1.77
Alpine population (from Switzerland)	HOLMAN, 1972 table 2		
apterous viv. fem.	22	0.175–0.197	1.20–1.40
alate viv. fem.	2	0.193	1.33
(= M. silvaticum)			
M. silvaticum) (from Switzerland)			
apterous viv. fem.	35	0.184–0.201	1.19–1.40
alate viv. fem.	6	0.176–0.197	1.25–1.35
oviparous fem.	4	0.176–0.197	1.27–1.37

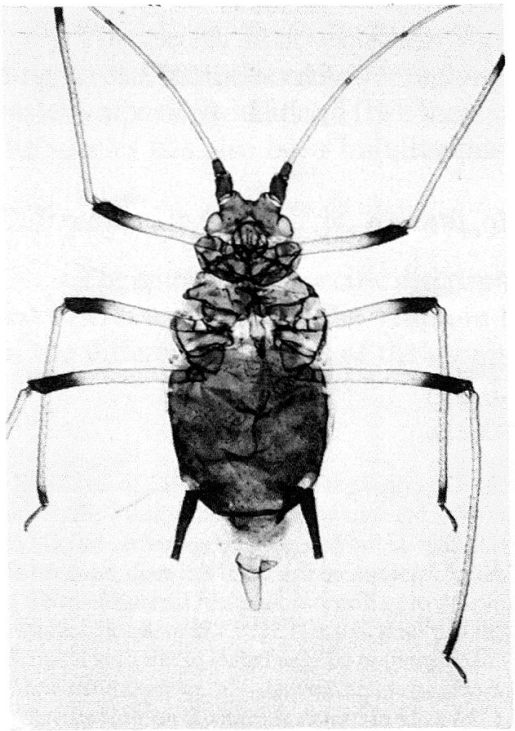
may be included in such a program. Examination of more material especially from the middle and eastern parts of the Alps may, as considered by HOLMAN 1972, give information about geographical overlapping of the different species.



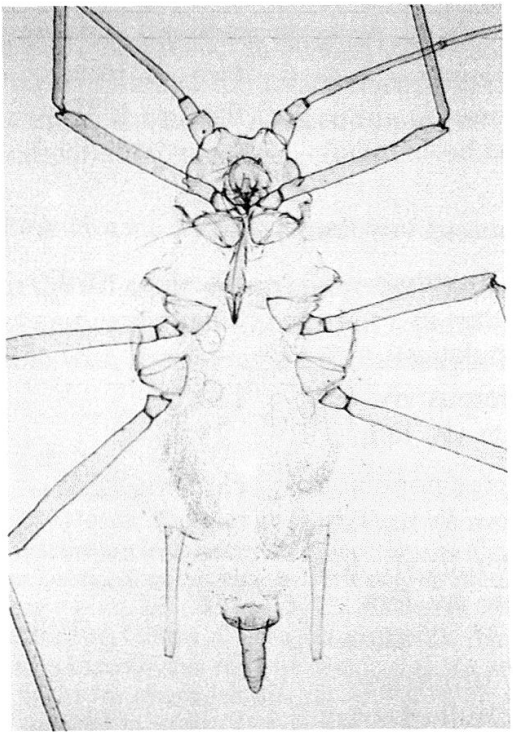
5



6



7



8

Fig. 5–8. 5: *Macrosiphum silvaticum sp. nov.*, viv. al. fem. 23 X; 6: *Microsiphum wahlgreni* HRL. viv. apt. fem. 37 X; 7: *Impatientinum asiaticum* NEVS. viv. apt. fem. 30 X; 8: *Acyrthosiphon lactuacae* PASS. *viv. apt. fem. 37 X.*

Impatientinum asiaticum Nevs. (fig. 7)

F.P. Müller (1981, in litt.) considers the West-Asiatic *I. asiaticum* and the Central-European *I. balsamines* Kltb. to be allopatric species which are also separated by their host plants. *I. balsamines* is found at lower and higher altitudes in Central Europe, and has also been recorded from Northern and Western Germany, Great Britain, The Netherlands, Denmark and Sweden (Meier, 1972). According to Hille Ris Lambers (1947c) it occurs also in Russia (= *I. fuscum* Mordv., 1982). More recently, Szelegiewicz (1965) and Huculak (1966) found the species in Poland.

Holman (1971) called the attention to the fact that *I. asiaticum*, which originates from the Tien-chiang mountains, is progressively extending its distribution to the West. It was first found at Moscow, later near Prague and afterwards in Bohemia and Moravia in Czechoslovakia. Holman states: «Apart from this, *I. asiaticum* undoubtedly has penetrated to adjacent regions of the German Democratic Republic and Poland».

In 1952, Börner stated that *I. asiaticum* had not been observed in Central Europe in spite of the general abundance of its host plant *Impatiens parviflora*, which was introduced from Asia into Europe some hundred years ago. It was therefore surprising that 11 viv. apt. fem. and 1 larva, collected by Prof. Dr. Sauter on September 4, 1976, near Illnau, Kanton Zurich, from *I. parviflora*, were identified beyond doubt as *I. asiaticum* Nevs. (Meier, 1977). Additional records followed within a short period of time. P. Hättenschwiler found the species on July 7, 1977 near Affoltern am Albis and Dr. S. Keller collected specimens of *I. asiaticum* on September 5, 1980 at Watt/Zurich. In both cases the host plant was *Impatiens parviflora*. In 1976, Lampel noted the first occurrence of *I. asiaticum* in Western Switzerland, and recorded at the same time the Western most occurrence of the species in the Lake Geneva area (Chernex-sur-Montreux).

The scattered appearance of *I. asiaticum* outside its natural range seems to be the result of independend accidental introductions, e.g. by aeroplanes, rather than of active migration.

Acyrthosiphon lactucae Pass. (fig. 8)

According to Eastop & Hille Ris Lambers (1976), *Macrosiphum lactucae* Pass. is the typus generis of the genus *Tlja* Mordv. for which no species were designated. Today named *Acyrtosiphon lactucae* Pass. the species was earlier places in the genera *Siphonophora* Koch and *Lactucobuim* Hrl. *Lactucobuim scariolae* Nevs. is a synonym.

As stated by Hille Ris Lambers (1947c), the «very hairy rostrum is the most typical character of this species, by which it is easily to separate from the other species of the genus. Furtheron, the distribution of the rhinaria, of which Nevsky (1949) gives a figure is quite typical, as well as the long hairs on the first tarsal joints».

Hille Ris Lambers concluded, from information by Nevsky & Börner, that *A. lactucae* hibernates on *Lactuca* sp. Host plants are *L.serriola* , *L. sativa* and *L. virosa*. The species can be damaging to young lettuce plants. F.P. Müller (1969) states that it attacks the shoots and flowers of *L. serriola*. Stroyan (1955) calls the attention to the fact, «that *A. lactucae* seems to be the only species capable of infesting *L. serriola* and *L. virosa* without ruptering the plants' latex vessels and succumbing by being immobilized by large lumps of congealed latex on the tarsi.»

According to Börner (1952), *A. lactucae* occurs throughout Europe and western Asia. Börner & Franz (1956) report its occurrence in the North-Eastern Alps, and

HILLE RIS LAMBERS (1947c, 1953) records its distrubution in various European countries and in Turkestan. Further distribution records include Portugal (ILLHARCO 1968), Iraq and Iran (BODENHEIMER & SWIRSKI, 1957) Turkey, Western Asia and Canada (F.P. MÜLLER, 1969), Poland and Hungary (SZELEGIEWICZ, 1965, 1968), Yugoslavia (TANASIJEVIC & EASTOP, 1963; EASTOP & TANASIJEVIC, 1968), Bulgaria (TASHEV, 1962), and Manitoba, Canada (ROBINSON & BRADLEY, 1968).

In Switzerland, a single alate viv. fem. was collected on July 7, 1957 near Kappel am Albis on *Lactuca sp.* A number of alate and apterous virgines of *A. lactucae*, colledted on August 4, 1971 near Neusiedl, Burgenland (Austria) from *Lactuca serriola* by Dr. D. SCHRÖDER, Commonwealth Institute of Biological Control, Delémont, Switzerland, were sent to me for identification.

DISCUSSION

The distribution within the Euro-Siberian Sub-region of the Palaearctic region has been ascertained for a number of aphid species of Eurasiatic origin. The largely intensified research on aphids in the East-European countries has considerably contributed to a better understanding of aphid distribution.

Specific habitat-preferences of certain species, like a preference for warm and dry places, could by ascertained by the comparison of their European and Asiatic distribution areas. *Macrosiphoniella stägeri* HRL., occurring in steppe habitats in the Southern Ukraine and the Swiss Valais, is an example, *Acaudinum longisetosum* is another, as discussed by HOLMAN.

Several aphid species which were known to occur in Central and Eastern Europe, have also been found in the Southern Mediterrranean region and in the Middle East. Examples are *Titanosiphon artemisiae* KOCH, *Stägeriella necopinata* CB., and *Microsiphum wahlgreni* HRL. As stated above, a species closely related to *St. necopinata* occurs in Central Asia, and a close relative of *M. wahlgreni* has an Eastern and Mediterranean distribution.

Chaetosiphella stipae HRL. from Central Europe and *Ch. thernavini* MORDV. from Bessarabia are, like the above examples, closely related allopatric species living on different host plants. The same is true for *Impatientinum balsamines* KLTB. from Europe and *I. asiaticum* NEVS. (F.P. MÜLLER, in litt.), the latter of which is presently extending its distrubution from East to West. In connection with *Macrosiphum knautiae* HOLM., known from Czechoslovakia, and the newly described *M. silvaticum* from Switzerland, it will be of special interest to find out if their distributions overlap or not. For several aphid species additional localities in Switzerland are given (see also MEIER, 1972, 1975). The species are *Microsiphum wahlgreni* HRL., *Macrosiphoniella absinthii* L. and *Impatientinum asiaticum* NEVS. A new record for Switzerland is given for *Acyrthosiphon lactucae* PASS. *Macrosiphum silvaticum* is described as new species. Additional records for the occurrence of *Acyrthosiphon lactucae* PASS. and *Aphis euphorbiae* KLTB. are given for regions adjacent to Switzerland.

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ZUSAMMENFASSUNG

Blattläuse aus Ost und West, mit einigen Ergänzungen zur Blattlausfauna der Schweiz und mit Beschreibung einer neuen Art (Ergänzungen zur Blattlausfauna der Schweiz III) – Ausgehend von einer Reihe von Blattlausarten, die durch Dr. R. Stäger in der «Walliser Steppenheide» eingesammelt worden waren, ist das Auftreten verschiedener Arten in Ost und West überprüft worden. Die Bevorzugung xerothermer Steppen-Habitate sowohl in Europa als auch in der südlichen Ukraine konnte für zwei Blattlausarten bestätigt werden. Für vier Arten konnte eine Verbreitung über Europa und Westasien festgestellt werden. Von mehreren Arten aus Mittelbis Osteuropa sind nahverwandte Arten aus Asien bekannt. Eine auffallende Einwanderung in westliche Gebiete ist zur Zeit für die aus Zentralasien stammenden *Impatientinum asiaticum* Nevs. festzustellen. Als nahverwandt zu *Macrosiphum knautiae* Holm. wurde *M. silvaticum* als neue Art beschrieben. Zudem konnte auf einige Ergänzungen zur Blattlausfauna der Schweiz hingewiesen werden.

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