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New and little known members of the aphid
fauna of Italy (*Homoptera, Aphididae*)

INTRODUCTION

Various authors have described or recorded members of the rich Italian aphid fauna. In the present paper notes are given on a number of species that I found in recent years during brief visits to Italy or that have been received from various friendly collectors.

As a result of a study of material in the Passerini collection at Parma some notes on species described by PASSERINI have been incorporated. It should be emphasized that not all aphids in the Passerini collection are original Passerini material. For instance vial no. 157 is labelled *Tetraneura rubra*, described in 1880 by LICHTENSTEIN under that name. There is material labelled *Aphis ballotae* in vial no. 46 in the collection, adult apterae of an *Aphis* of the *frangulae* Kltb. group with a cauda almost as long as the quite well developed siphunculi. If one should choose a lectotype from this sample, that type would strongly disagree with the description of *Aphis ballotae* Passerini which evidently relates to larvae of a *Brachycaudus*. It would seem therefore, that great care should be taken in the selection of lectotypes from the mentioned collection.

1. *Aphis diphaga* Walker, 1852

This small species can easily be recognized by its long processus terminalis. Large numbers were found on the undersides of the leaves of *Epilobium hirsutum*, its normal host plant, near Dolceacqua (Imperia), 5.IX.1961, leg. A. W. & D. Hille Ris Lambers.

2. *Aphis pollinosa* Walker, 1849

A little known light brownish-red *Aphis* with very marked white wax-pattern, pale thick and long siphunculi with the very tips blackish, but a dark, almost black cauda. The siphunculi usually bear a few thin hairs. On stems of its normal host *Epilobium hirsutum* near Dolceacqua (Imperia), on the same plants as no. 1, 5.IX.1961, leg. A. W. & D. Hille Ris Lambers.

3. *Aphis pseudocytisorum* n. sp.

Apterous viviparous female.

In life strongly powdered with wax and therefore pearly grey, but under the wax black; siphunculi and cauda black; femora and basal antennal segments dark; tibiae and rest of antennae pale. In mounted specimens body oval, about 1,20-1,60 mm long. Abdomen mostly membranous and not pigmented, but sometimes on tergites III to V with reticulated spino-pleural fragments of dark sclerotic transverse bars. Dorsal hairs scarce, the spinal ones on abdominal tergite III bluntish, about 0,016 mm long, $4/5$ of basal diameter of antennal segment III, the 2 hairs on tergite VIII acute, and about as long as that diameter. Marginal tubercles on abdomen only on tergites I and VII, blunt, nearly as high as their basal diameter which is about $1\frac{1}{5}$ times the length of the nearest marginal hair. Head rather dark sclerotic. Front slightly sinuated. Antennae about $2/3$ of length of body, with the basal segments as dark as the head; flagellum pale with dusky apex, markedly imbricated throughout; segment III without rhinaria; hairs on segment III acute, stiff, slightly adpressed, up to about half as long as basal diameter of the segment; processus terminalis about twice as long as base of segment VI. Rostrum rather long, reaching to just past the hind coxae; last segment rather long and slender, about 0,12 mm long, $1-1\frac{1}{10}$ times second joint of hind tarsi. Siphunculi black, cylindrical, bluntly imbricated, about $1/7-1/6$ of length of body, rather tapering on basal one-third part, less tapering from there and sometimes on distal half cylindrical, at apex often somewhat narrowed, in the middle usually just thinner than middle of hind tibiae, with hardly developed flange. Cauda blackish, slender and almost cylindrical on distal $2/3$ part, strongly tapering on basal $1/3$ part, about $9/10-1\frac{1}{10}$ times as long as siphunculi, with 7, sometimes up to 9 long, somewhat curved hairs. Subgenital plate with about 8-10 long hairs on posterior margin and 2 on anterior half. Legs rather short; femora dark with pale base, on the undersides with hairs that are all shorter than the diameter of the trochanter-femur junction; tibiae pale with dark apices, with dorsally and ventrally rather short spiny hairs at angles of dorsally about 40° , ventrally 60° , the latter half-way the hind tibiae about half as long as local width of those tibiae; first tarsal joints with 3, 3, 2 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Siph.	Cau.
			III	IV	V	VI		
1.	1.53	0.97	0.22	0.15	0.16	(0.11+0.21)	0.20	0.20
2.	1.51	0.99	0.22	0.16	0.16	(0.11+0.22)	0.21	0.19
3.	1.48	0.90	0.18	0.14	0.15	(0.10+0.20)	0.19	0.19
4.	1.28	0.85	0.19	0.12	0.14	(0.10+0.20)	0.17	0.18
5.	1.38	0.93	0.20	0.15	0.15	(0.11+0.21)	0.21	0.19
6.	1.51	0.94	0.20	0.14	0.14	(0.11+0.22)	0.18	0.19

(1-6, from *Cytisus nigricans*, Parè (Como), 15.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers).

Discussion. This species lives in compact, very mealy colonies on the young shoots and the bases of petioles, but not on the leaves of *Cytisus nigricans* (identified by Dr. S. J. van Ooststroom of the Rijks-herbarium, Leiden, Netherlands). It is clear, that it belongs in the relatively small group of *Aphis* L. in which larvae and adult apterae viviparae all are heavily powdered. In BÖRNER (1952) these species are scattered over various genera, to some extent depending on the presence or absence of sclerotisation of the dorsum in apterae viviparae. However, FALK (1958) has established that within the species great variation of sclerotisation may occur, partly as an effect of environmental factors. Therefore *Pergandeida* Schouteden *sensu* Börner, 1952 and *Uraphis* del Guercio *sensu* Börner, 1952 cannot be separated on this basis, not even as subgenera of *Aphis* L.

Our species belongs with *A. genistae* Scop., *A. craccae* L., *A. cytisorum* Htg., and *A. kaltenbachii* H.R.L. to a small group of European Leguminosae-infesting species of *Aphis* that are rather well defined. *A. kaltenbachii* differs by having siphunculi less than 1/3 the length of the cauda. *A. craccae* and *A. genistae* both have much longer hairs on dorsum, femora and tibiae. In *A. cytisorum* the siphunculi are very much longer than the cauda and the dorsum in apterae is normally completely sclerotic.

Apparently the present species is very local. Attempts to find it in Venezia Tridentina and in Austria, where the host plant is locally quite common, failed.

4. *Aulacorthum palustre* Hille Ris Lambers, 1947

A single alate of this species, which is only known from *Leontodon*, *Hypochoeris* and *Picris* was taken on *Centaurea cyanus* near Mori (Trento), 7.VI.1965, leg. D. Hille Ris Lambers.

5. *Börnerina depressa* Bramstedt, 1940

A common, greenish white insect on the undersides of *Alnus viridis* on Central European mountains. Immature fundatrices were found at 1200 m. a.s.l. near Trento, 13.VI.1965, leg. A.W. & D. Hille Ris Lambers.

6. *Brachycaudus mimeuri* Remaudière, 1952

Small colonies of apterae and larvae of this little known aphid were found on the tips of non flowering plants of *Odontites lutea* (plant identified by Dr. S.J. van Ooststroom of the Rijksherbarium, Leiden, Netherlands). Although ants were abundant, they did not attend this aphid species. At Antona near Massa, (Toscana), 1.IX.1963, leg. D. Hille Ris Lambers.

7. *Brachycaudus persicae* Passerini, 1860

Passerini's material of his *Myzus persicae*, described as new species in 1860, still exists, and Dr. Stroyan and I mounted a number of specimens. It is the species that in many parts of the world is noxious on *Prunus persica* and sometimes other *Prunus* spp., and that is known as *Aphis persicaecola* Boisduval, 1868; *Aphis persicae niger* Smith, 1890; *Brachycaudus masseei* Theobald, 1927; *Brachycaudus nitidus* H. R.L., 1935; and *Brachycaudus semisubterraneus* Börner, 1951. According to BÖRNER (1952 and earlier) it does not produce sexuals but this is not true. The species can hibernate underground as eggs, but produces its fundatrices so early in the year that they usually are not observed.

Evidently the fact that *Aphis persicae* Sulzer, 1776 was later transferred to *Myzus* Pass. does not invalidate the name *persicae* Passerini, 1860 as long as the name is not used in combination with the generic names *Aphis* L. or *Myzus* Pass. (*Myzodes* Mordv. in Germany), or *Nectarosiphon* Schout.

Therefore I introduce the name *Brachycaudus persicae* Passerini, 1860 which replaces both *Brachycaudus persicaecola* Boisduval, 1868 and *Brachycaudus semisubterraneus* Börner, 1951, the latter two names referring to the same animal on different host plants.

8. *Brachycolus cerastii* Kaltenbach, 1846

There are very few records of this small aphid, which occurs all over Europe on *Cerastium arvense*, making bud-like galls of the upper parts of the shoots. A number of galls containing fundatrices and larvae were collected near Greino (Trento), 7.VI.1965, leg. A.W. & D. Hille Ris Lambers.

9. *Clethrobius giganteus* Cholodkovsky, 1899

One alate of this large aphid, which lives on branches of *Alnus incana* was collected by Count F. Hartig on *Alnus viridis* near Madonna di Campiglio (Trento), 10.VII.1933. The species is boreo-alpine; it has never been found on *Alnus incana* in the Netherlands. BÖRNER (1952) uses the generic name *Betacallis* Matsumura for this species, which I cannot accept after studying the type-species of *Betacallis*, *B. alnicolens* Mats., an aphid with very few dorsal hairs, large marginal processi on abdomen and a strongly knobbed cauda.

10. *Coloradoa achilleae* Hille Ris Lambers, 1939

This species was collected from its only known host plant, *Achillea millefolium*, near Cavalese (Trento), 10.VI.1965, leg. A.W. & D. Hille Ris Lambers.

11. *Coloradoa palmerae* Börner, 1952

Considerable numbers of apterae viviparae of this species were taken on *Artemisia camphorata*, Sardagna (Trento), 2.VI.1965, leg. A.W. & D. Hille Ris Lambers. Although the types of the species came from Italy (« Görzer Bergland, Südtirol »), no real description was published. The figures in HEINZE (1960) if they relate at all to this species, are very misleading. Therefore I add a description of the

Apterous viviparous female.

In life dirty green, not shiny. In mounted specimens body about 1.35-1.70 mm long, very broadly oval. Tergum as usual pale, with the head, pseudoglandular and roundish intersegmental pleural sclerites on abdomen, and tergite VIII rather vaguely brownish yellow. Small marginal tubercles usually present on tergite V. Tergite VIII in the middle with a small, variable, conical processus resembling that in *Cavariella*

del Guercio, but with 1-4 hairs; also tergite VII with a very inconspicuous median elevation on posterior half. Dorsal hairs numerous, not in simple transverse rows, club-shaped, short, the longest ones on abdominal tergite III about 0,009-0,011 mm long, about half as long as basal diameter of antennal segment III, those on tergite VIII only slightly longer. Front as usual nearly straight to just convex. Antennae about $\frac{2}{3}$ of length of body, pale with the apices of segments III, IV and V over a successively longer distance dusky to dark, and segment VI blackish brown; for interrelation of segments vide measurements; longest of the few hairs on segment III about $\frac{2}{9}$ of basal diameter of the segment. Eyes with distinct, somewhat ventral triommatidia. Rostrum reaching the hind coxae; last segment not at all stiletto-shaped, rather slender with straight sides and rather blunt apex, about $\frac{6}{7}$ of second joints of hind tarsi, with 2-4 short hairs besides the hardly longer 3 subapical pairs. Siphunculi $\frac{1}{6}$ - $\frac{1}{5}$ of length of body, pale with the very apex brown, approximately cylindrical on basal $\frac{1}{2}$ - $\frac{4}{7}$ part, and then rather abruptly swollen to a maximum of $1\frac{2}{3}$ times the smallest diameter more basad which about equals the width just below the oblique flange; most of the surface densely covered with very flat, very broad, almost straight-edged, serrated but not spinulose imbrications; minimum width equal to diameter of hind tibiae in their middle. Cauda bluntly triangular, pale, only $\frac{3}{8}$ - $\frac{3}{7}$ of the length of the siphunculi, with 5 hairs. Legs pale with dark tarsi; hind tibiae strongly imbricated like the siphunculi; dorsal tibial hairs like dorsal body hairs but on basal part shorter; first tarsal joints with 3, 3, 2 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Siph.	Cau.
			III	IV	V	VI		
1.	1.61	1.11	0.22	0.18	0.17	(0.15+0.27)	0.28	0.11
2.	1.47	1.19	0.26	0.18	0.18	(0.17+0.29)	0.28	0.11
3.	1.53	1.19	0.26	0.18	0.19	(0.18+0.26)	0.28	0.12
4.	1.55	1.22	0.25	0.18	0.19	(0.18+0.30)	0.30	0.11
5.	1.57	1.05	0.21	0.16	0.18	(0.15+0.25)	0.29	0.12
6.	1.59	1.29	0.29	0.20	0.20	(0.18+0.30)	0.30	0.13

(1-6, from *Artemisia camphorata*, Sardinia (Trento), 12.VI.1965, leg. A. W. & D. Hille Ris Lambers).

Discussion. BÖRNER (1952, p. 252) writes that the species is very near *C. absinthii* Lichtenstein but that the siphunculi are « stumpf-dornig geschnitten (bei *C. a. spitzdornig*) ». In Dutch material of *absinthii* the serrations of the imbrications on the siphunculi are indeed rather acute, but in Swiss and Austrian material they are just as in *C. palmerae*, and therefore this difference is not quite reliable. The dorsal hairs in *C. palmerae* should be $\frac{1}{4}$ the length of those in *C.*

absinthii, but spinally on tergite III I find in Dutch specimens hairs up to 0.020 mm, in Swiss and Austrian specimens of up to 0.016 mm, i.e., not more than 2 times as long as in *C. palmerae*. Caudal and marginally the hairs in *C. absinthii* may become $2\frac{1}{2}$ - $2\frac{2}{3}$ times as long as corresponding hairs in *C. palmerae*.

A reliable difference is in the length of the processus terminalis, 2-2 $\frac{1}{2}$ times as long as base of antennal segment VI in *absinthii*, against 1 $\frac{1}{3}$ -1 $\frac{2}{3}$ times base in *C. palmerae*. The last rostral segment in *C. absinthii* is rather sharply pointed, with just concave to straight sides, but blunt in *C. palmerae*. Also the shape of the siphunculi is very different, as in *C. absinthii* they begin to widen almost from base, while in *C. palmerae* the basal half is cylindrical or even very slightly tapering till the middle.

On the host plant, *Artemisia camphorata*, the species appeared to be far from common, and virtually invisible. Specimens that were threshed from infested plants were put into a tube with pieces of the host plant and then settled on the morphological margin of the leaf at the bases of the incisions that divide the leaves into very fine filaments. Alatoid nymphs are strikingly brownish yellow. On the same plants *Pleotrichophorus glandulosus* Kltb. and *Macrosiphoniella atra* Ferr. were present in great numbers.

12. *Dactynotus pseudobscurus* nov. spec.

Apterous viviparous female.

In life bronzy, very dark, with posterior half more brown; legs black with bases of femora whitish yellow; siphunculi black; cauda pale yellow. In mounted specimens body about 2.50-3.20 mm long, spindle-shaped. Head and parts of thorax brown sclerotic, abdomen with brown sclerites at the base of the dorsal hairs and with distinct and solid antesiphuncular and postsiphuncular sclerites. Dorsal hairs stiff, spear-shaped, with the spinal rows irregularly duplicated, with single pleural rows, and loose groups of 2-4 marginal hairs on abdominal tergites II-IV; longest hairs on tergite III about $2\frac{1}{2}$ times basal diameter of antennal segment III, tergite VIII with 4 hairs. Minute marginal tubercles the size of the papilla of a marginal hair irregularly present on tergites II-IV. Frontal tubercles well developed, strongly diverging; depth of frontal furrow $\frac{2}{7}$ of distance between antennal bases. Antennae evenly black with the very base of segment III only in teneral specimens transparent, $1\frac{1}{4}$ - $1\frac{3}{7}$ times length of body; segment III over its whole length on about half its circumference with about 35-38 rather elevated rhinaria of varying size, some of which are very distinctly transversely oval, with bulging, basally slightly constricted membranes; for interrelation of segments vide measurements; hairs on segment III stiff, up to $1\frac{1}{4}$ times basal diameter of that segment. Rostum reaching well past hind coxae; apical segment slender, when completely

closed about 4 times as long as its basal width, $1\frac{2}{7}$ - $1\frac{1}{3}$ times as long as second joint of hind tarsi, with 5-10 hairs besides the 3 subapical pairs. Siphunculi black, densely and rather sharply imbricated, about $2/9$ - $1/4$ of length of body, gradually tapering, in the middle about $1\frac{1}{2}$ times as thick as the hind tibiae, with about apical $1/5$ - $1/4$ part reticulated, with small flange. Cauda ensiform, acute, not pigmented, $5/8$ - $3/4$ of the length of the siphunculi, with 9-13 rather straight, long, acute hairs. Legs black with basal halves of femora pale and sometimes the tibiae partly brownish black, very long and slender; hind tibiae $5/7$ - $5/6$ of length of body; first tarsal joints with 5, 5, 5 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on III	Siph.	Cau.
			III	IV	V	VI			
1.	2.98	3.84	1.00	0.71	0.57	(0.19+1.05)	48 & 49	0.72	0.56
2.	2.69	3.69	0.93	0.70	0.60	(0.18+1.00)	37 & 41	0.67	0.51
3.	3.15	3.86	1.05	0.76	0.61	(0.19+0.98)	46 & 54	0.84	0.55
4.	3.35	4.22	1.09	0.85	0.67	(0.23+1.08)	44 & 49	0.86	0.62
5.	3.18	4.37	1.15	0.83	0.73	(0.22+1.13)	50 & 55	0.85	0.56
6.	2.73	3.90	0.97	0.75	0.60	(0.20+1.09)	47 & 48	0.72	0.51

(1-6, from *Hieracium brevifolium* subsp. *brachyphyllum*, Marina di Pisa, 2.IX.1963, leg. D. Hille Ris Lambers).

Alate viviparous female.

In life like apterous viviparous female. In mounted specimens with blackish brown head and thorax, and with distinct marginal sclerites, but otherwise like the preceding morph. Antennal segment III with 50-65 rhinaria. Wings with pale veins.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on III	Siph.	Cau.
			III	IV	V	VI			
1.	2.82	4.15	1.05	0.82	0.67	(0.21+1.13)	52 & 58	0.75	0.45
2.	2.83	3.96	0.97	0.78	0.62	(0.20+1.11)	54 & 57	0.68	0.45
3.	3.04	4.22	1.06	0.85	0.65	(0.21+1.15)	56 & 58	0.72	0.47
4.	2.88	4.31	1.13	0.80	0.71	(0.22+1.17)	54 & 64	0.78	0.48

(1-4, from *Hieracium brevifolium* subsp. *brachyphyllum*, Marina di Pisa, 2.IX.1963, leg. D. Hille Ris Lambers).

Discussion. Large colonies of this aphid were found on the stems of *Hieracium brevifolium* Tausch subsp. *brachyphyllum* Vukot

(plant identified by Prof. J. L. van Soest, Rijksherbarium Leiden, Netherlands). On *Hieracium* spp. in Europe one generally finds *Dactynotus obscurus* Koch, but the Pisa insects were much darker and their long hind legs stuck in the air. It is evidently a member of the very difficult *D. cichorii* group but within that group it is easily recognized by its very long antennae, almost evenly black tibiae, long last rostral segment and rather small number of caudal hairs. Also *Dactynotus picridis* F., which is quite common in Italy on *Helminthia echinoides*, has very long legs, but its tibiae are in cleared specimens pale yellowish to brownish yellow on basal half, and therefore confusion is excluded.

Types. Holotype: Apterous viviparous female (measurements no. 2) from *Hieracium brevifolium* subsp. *brachyphyllum*, Marina di Pisa, 2.IX.1963, leg. D. Hille Ris Lambers. Paratypes: Apterae viviparae and alatae with data as for holotype.

13. *Dactynotus* (*Uromelan*) *nigrocampanulae* Theobald, 1928

Large colonies of this species were collected near Ceriana (Imperia), 12.IX.1961, leg. A.W. Beek & D. Hille Ris Lambers from its usual host plant, *Campanula trachelium*. Both stems and undersides of leaves were heavily infested. THEOBALD originally described this aphid from *Campanula latifolia*, on which plant I did not find it in nature. But in 1965 I observed in my garden, where both *C. trachelium* and *C. latifolia* grow, and *C. trachelium* is commonly infested, very large colonies on the lower leaves and the upper parts of the stem of *C. latifolia*. In Austria also *Campanula sibirica* is a host of this aphid.

14. *Dactynotus* (*Uromelan*) *similis* Hille Ris Lambers, 1935

A few apterae were found on *Erigeron acer*, its normal host plant, near Brunico (Bolzano), 12.VI.1965, leg. A.W. & D. Hille Ris Lambers. Apparently it has not been mentioned in literature that this species can become a severe pest of hybrids of *Erigeron speciosus* $\times$ *E. macranthus* grown as ornamentals.

15. *Diuraphis mühle* Börner, 1950

The species is monophagous on *Phleum pratense*, growth of which is stunted, while leaves of infested plants are markedly streaked with yellow and red as if the plants were attacked by a virus. The aphids

are hidden inside apical rolled leaves. Dr. A. Garzena of the San Michele Experiment Station kindly helped in the identification of the host plant by rearing the infested plants till they flowered. Our specimens were collected with the preceding species.

16. *Eriosoma inopinatum* Alfieri, 1920

This species which makes galls on *Ulmus* sp. and was described from Italy, has been declared a synonym of *E. lanuginosum* Htg. by all later workers. *Eriosoma pyricola* Baker & Davidson, described from roots of *Pirus communis* in California makes on *Ulmus* galls of the type described by ALFIERI (1920), and as *pyricola* has now also been found on roots of *Pirus* in Southern Europe, I assume that *inopinatum* Alfieri is the same species. *E. inopinatum* becomes a synonym of *pyricola* as the latter was described two years earlier.

17. *Eulachnus rileyi* Williams subsp. *tauricus* Bozhko, 1957

In all specimens of *E. rileyi* Williams (syn.: *E. bluncki* Börner) that I saw from the French and Italian Riviera, Portugal and Venice the hairs on the innersides of the antennae and the dorsal sides of the tibiae have blunt and incrassate apices. The hairs are also considerably shorter than they are in Western and Central European specimens.

Because in *Chaitophorus* Koch I (1960) found that there was considerable difference of a similar kind in hairlength and shape between samples of the same species from Northern and Southern States of North America I believe that this Southern *Eulachnus* is at most a subspecies of *E. rileyi* Williams.

From two larvae of *Eulachnus tauricus* Bozhko, kindly sent by Dr. Bozhko, collected from *Pinus nigra* subsp. *pallasiiana* at Yalta, Crimea, it appears that the name *tauricus* Bozhko is available for the Mediterranean and Portugese subspecies. It was collected from *Pinus halepensis* at Cagnes (Alpes Maritimes), France, 30.VIII.1959, and from *Pinus pinea* at Lido (Venice), Italy, 6.VI.1965, leg. A.W. & D. Hille Ris Lambers.

18. *Lachnus castaneae* nov. spec.

From *Castanea vesca* I have so far seen only one species of *Lachnus*, which is commonly known as *L. longipes* Dufour. It seems that DEL GUERCIO (1909) is responsible for the idea that *Aphis longipes* Dufour is the species on *Castanea vesca*, and then BÖRNER (1952),

BÖRNER & HEINZE (1957), HEINZE (1962) and GOMEZ-MENOR (1962) faithfully followed. Yet DUFOUR (1833) gave only *Quercus robur* and *Q. tozza* as host plants.

If, therefore, the species on *Castanea vesca* is different from those on *Quercus* spp., it will require a name of its own. The name *Lachnus castaneae* nov. spec. is proposed, and a description given.

Apterous viviparous female.

Colour in life not noted, but probably tar-brown with blackish legs and brownish yellow antennae. In mounted specimens body about 4.25-5.25 mm long, very broadly oval. Head and thorax blackish sclerotic, abdominal integumentum membranous, pale, with roundish, black pleural intersegmental sclerites, black siphuncular cones, an often interrupted brown sclerotic bar across tergite VIII, and a blackish cauda with pale center. Dorsal hairs of varying length on the same specimens, those on abdominal tergite III partly blunt and 0.026 mm long, others fine and 0.078 mm long. Antennae 1/2-5/8 of length of body, basal segments blackish, flagellum honey-brown with dark apex, densely imbricated; segment III like IV and V with some very small rhinaria; hairs on segment III at an angle of 45°, stiff, blunt, at most as long as diameter of the constricted base of the segment; segment VI approximately half as long as segment IV, with the processus terminalis (measured from the distal rim of the primary rhinarium) at most half as long as the basal part, longer than the diameter of the comparatively small primary rhinarium. Median suture of the head reaching to posterior margin of the head. Rostrum reaching to about abdominal sternite IV; last segment about 2/3 of second joint of hind tarsi. Diameter of siphuncular cones about 2-3 times length of second joint of hind tarsi. Cauda about 2 1/2 times as wide as long, rather trapezoid with rounded corners. Legs very long; basal half of femora, and the very base of tibiae yellowish brown, the rest blackish brown; dorsal hairs on tibiae all very short, adpressed and blunt.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on III	Siph.	Cau.
			III	IV	V	VI			
1.	4.32	2.60	1.17	0.50	0.42	(0.17+0.09)	0 & 0	0.72	0.17
2.	5.04	2.53	1.13	0.49	0.38	(0.17+0.07)	0 & 0	0.72	0.19
3.	4.72	2.67	1.18	0.49	0.45	(0.18+0.08)	8 & 13	0.64	0.18

(1-3, from *Castanea vesca*, Merano (Bolzano), 25.V.1933, leg. F. Hartig).

Discussion. DEL GUERCIO (1909) distinguished his *Lachnus* from *Castanea* under the name *Dryaphis longipes* Dufour from other species by colour, and by antennal segment VI in apterae being slightly less than half as long as segment V or VI (key on p. 265), which does

not agree with his measurements (on p. 277) where segment VI is rhinaria, segment VI being $2/3$ of segment V with a processus terminalis 10, segment V 19, or his figure 103 on plate XIII. He writes that the processus terminalis is $1/3$ the length of ant. segment VI.

HEINZE (1962) separates his *Lachnus longipes* from the rest by has antennal segment III as long as segment IV + V + VI, with 14-24 the strongly imbricated antennae, with the processus terminalis $1/3$ or

GOMEZ-MENOR (1962) writes that his *Lachnus longipes* as an alate more of VI segment and longer than the diameter of the primary rhinarium, few and long dorsal hairs, and by alatae with 4-7 rhinaria on antennal segment III. Only *Castanea vesca* is given as a host plant. nalis of $1/3$ the length of the segment. On the other hand his alate *Lachnus roboris* L. has only 8-10 rhinaria on antennal segment III in alatae. I should add that he gives both *Quercus* and *Castanea* as host plants of his *longipes*.

Does the *Lachnus* on *Castanea* really differ morphologically from the very variable *Lachnus roboris* L.? Specimens from *Quercus* with a processus terminalis of a size mentioned by DEL GUERCIO, HEINZE and GOMEZ-MENOR are not rare. Neither are specimens from *Quercus* with segment VI only half as long as segment IV or even V. Further characters mentioned by HEINZE apply equally well to *Lachnus roboris* from *Quercus robur* or from other *Quercus* spp. The only characteristics that I can give are, that *L. castaneae* is a very large *Lachnus*, that the antennae and especially segment III in the slightly alatiform type specimens are unusually long, that the primary rhinarium on segment VI is comparatively small, and the processus terminalis rather slender, but that all these characters can be found, but perhaps not in combination, among *Lachnus roboris* L. from *Quercus* spp.

From the above it will be clear that *L. castaneae* nov. spec. (*L. longipes* of del Guercio, Börner, Börner & Heinze, Heinze, Gomez-Menor, nec Dufour) cannot with certainty be separated from *L. roboris* L. If it could be shown that specimens from *Quercus* can live and breed on *Castanea vesca*, *L. castaneae* should be made a synonym of *L. roboris* L. In this context I should like to refer to my paper of 1956 on the variability of *Lachnus roboris* L. And I should add that the presence of a fundatrix with the usual characteristics of that morph in the described sample from *Castanea* proves that the apterae belong to the second generation.

Type. Holotype: Apterous viviparous female (measurements no.

1), from *Castanea vesca*, Merano (Bolzano), 25.V.1933, leg. F. Hartig. Paratypes: Apterous viviparous female and fundatrix with data as for holotype.

19. *Macrosiphoniella tanacetaria* subsp. *italica* nov. subsp.

Prof. D. Roberti years ago sent specimens of a *Macrosiphoniella* from *Chrysanthemum* sp., S. Pietro Avellana Campobasso, (Abruzzo), 2-20.VI.1936 which I then identified as *M. tanacetaria* Kltb., and which subsequently were described by ROBERTI (1958) under that name. He did not publish from which plant he collected this aphids.

Later material was received from Prof. Dr. H. Franz, collected from *Chrysanthemum corymbosum*, in Austria, which to a very high degree resembled Prof. Roberti's specimens.

Typical for the above mentioned material is that the siphunculi are longer and more slender than they are in typical *tanacetaria* from *Tanacetum vulgare* and *Chrysanthemum parthenium*. The siphunculi in apterae viviparae are reticulated over hardly one-third of their length, and not as in *tanacetaria* over about half their length. This is well illustrated in ROBERTI (1958, fig. XXI).

For the rest the Italian and Austrian specimens differ so little from normal *tanacetaria* that I consider them at most a subspecies. This is described here as *Macrosiphoniella tanacetaria* subsp. *italica* nov. subsp.

Apterous viviparous female.

As in *Macrosiphoniella tanacetaria* Kltb., but siphunculi 1/6-1/5 of length of body, reticulated over distal 1/3 part or less.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rh. on III	Siph.	Cau.
			III	IV	V	VI			
1.	3.11	3.88	1.05	0.83	0.68	(0.22+0.79)	9 & 13	0.55	0.55
2.	3.19	3.98	1.02	0.88	0.76	(0.23+0.80)	9 & 9	0.57	0.59
3.	3.11	4.07	1.04	0.86	0.69	(0.25+0.92)	14 & 15	0.61	0.64
4.	2.98	4.13	1.00	0.89	0.71	(0.26+0.96)	13 & 14	0.55	0.59
5.	3.01	4.07	1.05	0.85	0.68	(0.25+0.94)	10 & 12	0.60	0.64
6.	3.79	4.07	1.06	0.86	0.68	(0.25+0.94)	13 & 14	0.66	0.66

(1-2, from *Chrysanthemum* sp., S. Pietro Avellana (Campobasso), (Abruzzo), Italia, 22.VI.1936, leg. D. Roberti; 3-6, from *Chrysanthemum corymbosum*, St. Paul, Austria, 15.VII.1956, leg. H. Franz).

Alate viviparous female.

As in *Macrosiphoniella tanacetaria* Kltb., but siphunculi about 1/6 of length of body, reticulated over about distal 1/3 part.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on III	Cau.	Siph.
			III	IV	V	VI			
1.	2.64	3.98	1.02	0.86	0.77	(0.23+0.79)	34 & 39	0.48	0.49
2.	2.87	3.83	1.00	0.86	0.71	(0.22+0.76)	38 & 46	0.45	0.47

(1-2, with apterous viviparous females no. 1 and 2).

Types. Holotype: Apterous viviparous female (measurements no. 3) from *Chrysanthemum corymbosum*, St. Paul, Austria, 15.VII.1956, leg. H. Franz. Paratypes: Apterae viviparae with data as for holotype, and apterae and alatae viviparae from *Chrysanthemum* sp., S. Pietro Avellana Campobasso, (Abruzzo), Italia, 22.XII.1936, leg. D. Roberti.

20. *Macrosiphoniella tapuskae* Hottes & Frison, 1931

This species, described from Illinois, U.S.A., host plant *Achillea millefolium*, was later found on the same plant in the Netherlands. BÖRNER (1940) described it as *Phalangomyzus ceratus* from Germany, also from *Achillea*. Later I (1947) described *Macrosiphoniella chamomillae* from *Matricaria chamomilla*, distinguishing it from *tapuskae* by a shorter reticulated area on the siphunculi. Since that time a great amount of material of similar aphids has come in, and I find it completely impossible to maintain *chamomillae* as a different taxon. In America *M. tapuskae* occurs from Colorado to Pennsylvania. In Europe I saw specimens from the Netherlands, Sweden, Germany, Czechoslovakia, Austria, Switzerland, France and Italy. Further material came from Spanish Morocco, Lebanon, and Iran. This material came from the following host plant: *Achillea millefolium*, *A. nobilis*, *A. santolina*, *Anacyclus radiatus*, *Anthemis arvensis*, *A. cotula*, *A. tinctoria*, *Artemisia campestris*, *Matricaria chamomilla* and *M. inodora*.

In Italy it was found on *Anthemis tinctoria*, Torrechiara near Parma, 24.IV.1955, leg. H.L.G. Stroyan & D. Hille Ris Lambers, and on *Anacyclus radiatus*, Marina di Pisa, 2.IX.1962, leg. D. Hille Ris Lambers.

21. *Macrosiphum albertinae* (*) spec. nov.

Apterous viviparous female.

In life body apple green; antennae with basal part of segment I green, the rest dark; femora whitish with dark apices; tibiae rather dark with both ends blackish; siphunculi dark to black with the very base pale green; cauda pale green. In mounted specimens body about 2.40-2.90 mm long. Head faintly brownish yellow, the rest of the body not pigmented and without local sclerotisation. Marginal tubercles, which are nearly globular in shape and smaller than the socket of a dorsal hair, very irregularly present on abdominal tergites II-V. Dorsal hairs subacute to blunt, the spinal ones on abdominal tergite III just longer than basal diameter of antennal segment III, the 4-6 ones on tergite VIII acute and up to 1 1/2 times as long as that diameter. Frontal tubercles moderately developed, strongly diverging, about smooth, with 3 or sometimes 4 hairs each; no trace of a median frontal tubercle; depth of sinus frontalis about 1/4 of the distance between the first antennal segments. Antennae about 1 1/4-1 1/3 times as long as body, very much darker than the head to blackish brown, with the basal part of segment I and the very base of segment III paler to pale; segment III smooth with the very base imbricated, on basal 1/2-3/5 with 10-15 rather large, hardly elevated rhinaria in an irregular, partly duplicated row on a slightly incrassate and distinctly darkened part of the segment, which is the darkest part of the whole antenna; hairs on segment III not numerous, up to as long as basal diameter of the segment. Rostrum short, reaching just past middle coxae; last segment short as in *Sitobion* Mordv., about 7/10 of second joint of hind tarsi, with 5-7 hairs besides the 3 subapical pairs. Siphunculi about 1/4-3/11 of length of body, evenly blackish with the very base paler, rather thick, more or less cylindrical with slightly expanded base and markedly constricted subapical 1/8 part, so that they look slightly swollen, dorsally virtually smooth, ventrally very superficially imbricated, on apical 1/12-1/9 part distinctly reticulated. Cauda pale, long and slender, on distal 2/3 part almost cylindrical, rather blunt, 5/8-2/3 of the siphunculi, with 9-12 acute hairs. Subgenital plate on anterior half with 4-6 hairs. Legs long; femora pale with dark brown apical parts; tibiae brownish yellow with large basal and apical parts dark brown; first tarsal joints with 3, 3, 3 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on III	Cau.	Siph.
			III	IV	V	VI			
1.	2.57	3.19	0.77	0.57	0.55	(0.16+0.91)	12 & 15	0.66	0.40
2.	2.45	3.06	0.72	0.55	0.52	(0.15+0.88)	10 & 10	0.57	0.35
3.	2.45	3.23	0.77	0.59	0.56	(0.16+0.93)	10 & 13	0.64	0.38
4.	2.85	3.33	0.87	0.62	0.54	(0.16+0.89)	12 & 15	0.77	0.49

(1,4 from *Thesium intermedium*, Ceriana (Imperia), 12.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers).

(*) Named for my wife, Tineke, who first spotted this aphid.

Discussion. This species was collected in small number from the upperside of the leaves of *Thesium intermedium* Schrad. Dr. S.J. van Ooststroom of the Rijksherbarium, Leiden, Netherland, most kindly identified the plant from a dried specimen. The plants grew on a shadowy, rather moist slope with *Hepatica* at an altitude of about 700 m.

The species differs from the other European *Macrosiphum* spp. with black siphunculi (*M. rosae* L., *M. weberi* Börner, *M. funestum* Macch.) by its short last rostral segment, pale head and few hairs on the frontal tubercles.

The life cycle is unknown.

Types. Holotype: Apterous viviparous female (measurements no. 1), from *Thesium intermedium* Schrad., Ceriana (Imperia), Italy, 12.IX.1961, leg. A.W. Beek & D. Hille Ris Lambers no. I 11. Paratypes: Apterae viviparae with data as for holotype.

22. *Macrosiphum hartigi* Hille Ris Lambers, 1947

This species was as *Macrosiphum montanum* nov. spec. described by me, from *Silene vulgaris* from Collalbo (Bolzano), but because the name was preoccupied I renamed it *Macrosiphum hartigi* in 1947. This rare species is now known from Madonna di Campiglio, and Collalbo in Italy, Innsbruck in Austria and Zeneggen above Visp in Switzerland, always on *Silene vulgaris*. BÖRNER (1952) lists *M. hartigi* as a synonym of *Macrosiphum sileneum* Theobald, followed by MEIER (1961) but they clearly had never seen *M. hartigi*, for the two species are totally different.

23. *Melanaphis bambusae* Fullaway, 1910

My friend Dr. R. van den Bosch from Berkeley, California, first found that this aphid, described from Hawaii, is not rare on *Arundinaria* in Southern France. Later we found it also in numbers on the Italian side of the border, at Ospedaletti and Sanremo (Imperia), 28.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers.

The generic name should be discussed. VAN DER GOOT (1917) erected *Melanaphis*, type-species *Aphis bambusae* Kirkaldy (= *A. bambusae* Fullaway, 1910) on p. 60 of his work on Javanese aphids, but on p. 112 of the same paper he erects *Longiunguis* nov. gen., type-species *Aphis sacchari* Zehntner. If cleared specimens of bam-

busae and *sacchari* are examined there is no generic difference, but in life they are rather different because *bambusae* has a very nice wax-pattern. In this group of aphids presence or absence of wax excretion is usually not considered a generic character. Therefore *Longiunguis* van der Goot is either a synonym of *Melanaphis* van der Goot, or at most a subgenus, because of page-priority of *Melanaphis* van der Goot.

Whichever point of view is taken, *Aphis donacis* Passerini, 1862, with strong wax-excretion, falls into *Melanaphis* van der Goot sensu stricto.

24. *Metopolophium albidum* Hille Ris Lambers, 1947

This greenish yellow species occurs where its host plant, *Arrhenatherum elatius* grows. A number of specimens were found on the typical host near Vigolo Vattaro (Trento), 10.VI.1965, leg. A. W. & D. Hille Ris Lambers.

25. *Microlophium primulae* Theobald, 1913

Large colonies were found on the undersides of the leaves of *Primula acaulis* in the botanical garden at Parma, 29.IV.1955, leg. H. L. G. Stroyan & D. Hille Ris Lambers. The species lives on various wild and cultivated species of *Primula* and has only a very few times been found in continental Europe. The life cycle is not known. Colonies in my garden at Bennekom did not produce sexuals and they persisted through winter as viviparous larvae and apterae.

26. *Periphyllus venetianus* nov. spec.

Apterous viviparous female.

In life shiny blackish green with pale antennae and legs. In mounted specimens body about 1.10-2.00 mm long, pyriform. Head faintly smoky, and abdominal tergite VIII with a narrow, dark smoky sclerotic band, the rest not pigmented and apparently membranous. Dorsal hairs pale, rather thin, all with fine acute apices, partly very long, the longest spinal hairs on abdominal tergite III up to over 0.200 mm long, about 7-8 times as long as basal diameter of antennal segment III, but on the same tergite shorter and fine spinal hairs of only 0.065 mm long. Antennae 3/4-10/11 of length of body, with the basal segments, the very apices of segments III-V, and segment VI dark to dusky; for interrelation of segments vide measurements; antennal hairs on innerside of antenna very long, the longest on segment VI up to 6 times basal diameter of that segment; base of segment VI with 2 hairs, the longest of which is about 0.125 mm long, about

5 times as long as the shortest one and 12-15 times as long as the diameter of the processus terminalis. Rostrum rather long, reaching to or past the hind coxae; last segment rather short, as long as second joint of hind tarsi, with 2 hairs besides the 3 subapical hairs. Siphunculi rather long, as long as second joints of hind tarsi, rather dark but near base slightly paler, truncated conical with the smallest diameter at distal 1/3 part from where they widen to the very wide flange, in small specimens with 2 rows of apical reticulation, in large specimens with 4-5 rows of rather isodiametric reticulation, the rest very faintly striate. Cauda faintly brownish, about as long as its basal width, very blunt, not or very little constricted near the middle, with 8-10 hairs of various lengths. Legs evenly pale with the apices of the tibiae and the tarsi light brown; apices of tibiae with some 10-20 spinules; first tarsal joints with 7, 7, 7 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Siph.	Cau.
			III	IV	V	VI		
1.	1.88	1.72	0.34	0.23	0.19	(0.11+0.49)	0.15	0.11
2.	1.51	1.45	0.28	0.17	0.17	(0.09+0.62)	0.11	0.08
3.	1.32	1.06	0.22	0.16	0.15	(0.08+0.34)	0.09	0.08
4.	1.86	1.37	0.31	0.19	0.19	(0.10+0.45)	0.15	0.10
5.	1.28	1.10	0.26	0.16	0.16	(0.09+0.35)	0.11	0.06
6.	1.46	1.10	0.26	0.14	0.14	(0.09+0.36)	0.11	0.08

(1-6, from *Acer campestre*, Lido, Venice, Italy, 6.VI.1965, leg. A. W. & D. Hille Ris Lambers).

Aestivating larva.

Very similar to those of *Periphyllus granulatus* Koch with only a median suture and intersegmental sutures, small atrophied siphuncular pores, very short inconspicuous spinal hairs, no pleural hairs on metanotum and abdomen, and foliate marginal and frontal hairs; processus terminalis 2 1/2 times as long as base of last segment. In life light green.

Discussion. Large colonies of this aphid were found on the undersides of the leaves and on the distal parts of the petioles of a small *Acer campestre* on Lido near Venice. The aphids were mixed with *Drepanosiphum aceris* Koch, and attended by *Lasius brunneus* and *Crematogaster* sp. At the time of collection many aestivating larvae were being produced. No alatoid nymphs or alatae were present.

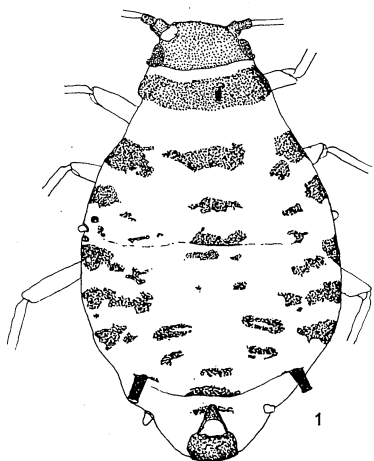
The discovery of this species makes classification of the European species quite difficult. The following key to apterous viviparous females, made in collaboration with Miss Anneke Zeegers, may help.

- 1 (2). Last rostral segment with more than 15 hairs in total. Processus terminalis about 4 times as long as base of antennal segment VI. Longest hair on base of the latter segment 4-7 times diameter of processus terminalis, the shortest hair $2\frac{1}{2}$ - $4\frac{1}{2}$ times that diameter. First tarsal joints with 7, 7, 7 hairs. No aestivating larvae. On young branches and also on old wounds on the bark of the trunks of *Acer pseudoplatanus*, attended by *Lasius fuliginosus*. Netherlands, West Germany, Austria
P. singeri Börner
- 2 (1). Last rostral segment with less than 15 hairs. On leaves, petioles or tender shoots.
- 3 (14). Processus terminalis at most $3\frac{1}{2}$ times as long as base of antennal segment VI.
- 4 (7). Embryos in spring and early summer mostly with foliate marginal hairs. Knees black.
- 5 (6). First tarsal joints with 5, 5, 5 hairs. Siphunculi short, less than half as long as second joints of hind tarsi. Last rostral segment slightly shorter than basal part of antennal segment VI. Especially on *Acer palmatum*. Europe, Asia, North America
P. californiensis Shinji
- 6 (5). First tarsal joints nearly always with 7, 7, 7 hairs, rarely with 5, 5, 5 hairs. Siphunculi about as long as second joints of hind tarsi. Last rostral segment $1\frac{1}{2}$ times as long as basal part of antennal segment VI. On many species of *Acer* and sometimes on *Aesculus* spp. Europe, North America
P. testudinaceus Fernie
- 7 (4). Embryos always with long and fine dorsal hairs. Knees pale or very nearly pale. Long-haired aestivating larvae living in compact groups.
- 8 (11). All dorsal hairs pale and no dark sclerotic dorsal bars on abdominal tergites cephalad the siphunculi.
- 9 (10). Longest hair on base of antennal segment VI 7-10 times as long as diameter of processus terminalis, shortest hair 3-6 times as long as that diameter. On *Acer pseudoplatanus*. Europe
P. acericola Wlk.
- 10 (9). Longest hair on base of antennal segment VI 3-5 times as long as diameter of processus terminalis, shortest hair 2-3 times as long as that diameter. On *Acer platanoides*. Europe
P. aceris L.
- 11 (8). Either all dorsal hairs, or those on the posterior abdominal tergites dark to blackish, and often darkish bars present on several abdominal tergites.

- 12 (13). Only on tergites V or VI to VIII dark dorsal hairs present, those more cephalad pale. On *Acer monspessulanus* and *A. opulus*. Southern and Central Europe
 **P. rhenanus** Börner
- 13 (12). Dark to blackish hairs all over dorsum. On *Acer*. Bulgaria, Asia Minor . . . **P. bulgaricus** Tashev
- 14 (3). Processus terminalis more than 3 1/2 times as long as base of antennal segment VI.
- 15 (16). Dorsal hairs, especially the longest ones on the middle of abdomen, with rather thin but blunt or furcated apices. Shortest hair on base of antennal segment VI only about half as long as basal diameter of antennal segment III. Embryos often with foliate marginal hairs. Body evenly green in life. On leaves, petioles and fruits of *Acer campestre*, sometimes with ants. Western, Central and Southern Europe
 **P. hirticornis** Wlk.
- 16 (15). Dorsal hairs all with fine, acute apices. Shortest hair on base of antennal segment VI at least as long as basal diameter of antennal segment III. Embryos mostly but not always with normal hairs. Colour mostly dark, or in most specimens of a colony dark.
- 17 (18). Siphunculi 1/3-1/2 of the length of second joint of hind tarsi, dark with pale base. Embryos with long hairs. Colour in life mostly dark, sometimes light green. On petioles and tender shoots of *Acer platanoides*. Western, Central and Eastern Europe . . .
 **P. coracinus** Koch
- 18 (17). Siphunculi at least as long as second joints of hind tarsi, mostly rather evenly pigmented. Colour in life dark, or pale with a brownish design.
- 19 (22). Shortest hair on base of antennal segment VI less than 1 1/2 times as long as basal diameter of antennal segment III.
- 20 (21). Longest hair on base of antennal segment VI 20-25 times as long as diameter of processus terminalis. Embryos with long hairs. Colour in life pale with more or less strongly developed design of brown, sometimes nearly all brown. On undersides of leaves of *Acer platanoides*. Europe
 **P. lyropictus** Kessler
- 21 (20). Longest hair on base of antennal segment VI 12-15 times as long as diameter of processus terminalis. Embryos mostly with foliate marginal hairs. On petioles and undersides of leaves of *Acer campestre*. Italy
 **P. venetianus** nov. spec.
- 22 (19). Shortest hair on base of antennal segment VI 2-3 times as long as basal diameter of antennal segment III. On petioles and tender shoots of *Acer campestre*. Western, Central and Eastern Europe.
 **P. obscurus** Mamontova

The above key does not reflect relationship. In fact, *P. venetianus* nov. spec. is morphologically closest related to *P. hirticornis* Wlk., from which it differs in life by being shiny greenish black, instead of light green, and in cleared mounted specimens by having finely pointed, instead of partly blunt, partly furcated hairs on the anterior part of the abdominal dorsum. Aestivating larvae of the two species I cannot distinguish from each other.

Types. Holotype: Apterous viviparous female (measurements no. 1), from *Acer campestre*, Lido, Venice, Italy, 6.VI.1965, leg. A. W. & D. Hille Ris Lambers. Paratypes: Apterae viviparae with data as for holotype.



Protaphis striata nov. spec.

Fig. 1 - Apterous viviparous female, x 35.

Fig. 2 - Marginal tubercle of abd. segment VII, x 350.

27. *Protaphis striata* nov. spec.

Apterous viviparous female.

In life somewhat bluish green, with dark olive-brown spinal and marginal bands, not shiny. In mounted specimens body about 1.40-1.75 mm long, broadly oval. Tergum with a complicated, variable, in small specimens reduced pattern (fig. 1) of brown sclerites that locally are slightly reticulated. Dorsal hairs very inconspicuous, the longest hairs on abdominal tergite III about 0.009 mm long, semi-blunt, the 2 hairs on tergite VIII up to 0.016 mm long. On abdomen large marginal tubercles present on segments I and VII; those on segment I truncated conical, as high as their basal width which is about 0.045 mm; those on segment VII (fig. 2) conical with rounded apex, longer than their basal width of about 0.040-0.050 mm, covered with about 6-12 transparent, secondary, semiglobular tubercles, which in apical view suggest a pattern of very large reticulations that I have not seen in other aphids; small marginal tubercles irregularly present

on segment II and III. Front slightly sinuated. Antennae a little over half as long as body, with the basal segments dark, the flagellum pale with gradually darkening apex; division between segments III and IV sometimes indistinct or obsolete; segment III near apex usually with 1-2 rhinaria, that sometimes are absent; segment IV also near apex with 1-2 rhinaria that rarely are absent; processus terminalis $1\frac{2}{3}$ -2 times as long as base of last segment, about as long as segment III (when 6 segments are present); longest hairs on segment III about half as long as basal diameter of the segment. Rostrum very long, reaching to abdominal sternite II or III; last segment thick, with convex sides, about $1\frac{1}{4}$ - $1\frac{1}{3}$ times as long as second joint of hind tarsi, with 2 long hairs besides the 3 subapical pairs. Siphunculi black, about $\frac{1}{15}$ - $\frac{1}{14}$ of length of body, evenly tapering, at base about $1\frac{1}{3}$ times as wide as at apex, in the middle just thicker than the hind tibiae, hardly imbricated, with very small flange. Cauda bluntly triangular, about as long as the siphunculi, with very small, quite dark « hard portion » (PALMER, 1952), with 8-12 curved hairs. Legs rather slender; femora blackish with slightly paler base; tibiae pale with the very base and distal $\frac{1}{4}$ part blackish; dorsal hairs on middle part of tibiae about half as long as the local diameter; first tarsal joints with 3, 3, 2 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on segment		Siph.	Cau.
			III	IV	V	VI	III	IV		
1.	1.66	0.84	0.20	0.11	0.12	(0.10+0.19)	2 & 1	2 & 2	0.12	0.11
2.	1.54	0.81	0.18	0.10	0.12	(0.11+0.18)	1 & 1	2 & 1	0.11	0.11
3.	1.67	0.89	0.22	0.12	0.14	(0.11+0.18)	2 & 1	1 & 1	0.12	0.11
4.	1.66	0.88	0.21	0.11	0.13	(0.11+0.20)	1 & 1	1 & 1	0.11	0.12
5.	1.53	0.78	0.18	0.10	0.11	(0.10+0.18)	2 & 2	1 & 1	0.11	0.11
6.	1.47	0.76	0.16	0.10	0.11	(0.10+0.18)	0 & 1	1 & 1	0.10	0.11

(1-6, from probably *Hypochoeris glabra*, Parè (Como), 15.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers).

Oviparous female.

In life like preceding morph. Head dark as in apterae viviparae, but dorsal sclerotisation reduced to very small pleural intersegmental sclerites. Marginal tubercles as in preceding morph. Antennae of 5 segments, without secondary rhinaria. Cauda thicker and more blunt, with about 12 hairs. Hind tibiae not swollen, with on one perhaps one pseudosensorium. Other characters as in the preceding morph.

Measurements in mm.

No.	Length body	Ant.	Antennal segments			Siph.	Cau.
			III	IV	V		
1.	1.64	0.76	0.26	0.11	(0.10+0.18)	0.10	0.10

Discussion. This aphid was found in considerable numbers on the undersides of the bases of the radical leaves of a Composite, which by Dr. S. J. van Ooststroom, of the Rijksherbarium, Leiden, Netherlands, was identified as most probably being *Hypochoeris glabra*. Ants attended the aphids. One ovipara was found which looks like an *Aphis* L., but which because of its curious marginal tubercles certainly belongs with the apterae viviparae. An ovipara without pseudosensoria on the hind tibiae in this group of aphids looks highly improbable, but the structure of the subgenital plate and the presence of about 6 large eggs in the body exclude a mistake.

The systematics of *Protaphis* species which in the warmer parts of Europe, Western Asia, and Northern Africa are found on underground or superterranean parts of a great many species of Compositae, are as yet in an embryonic stage. Several species have been described, but the differential characters that have been used are not very useful. Description of a new species would therefore seem premature, but the present species differs from all material that I have seen by two not interrelated characters: the also in oviparae long processus terminalis, which in other samples does not exceed $1 \frac{2}{5}$ times the length of the basal portion of the last antennal segment, and the remarkable structure of the marginal tubercles on abdominal tergite VII, which I do not know from other members of this group of aphids.

Types. Holotype: Apterous viviparous female (measurements no. 1), from probably *Hypochoeris glabra*, Parè (Como), 15.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers. Paratypes: Apterae viviparae and an ovipara with data as for holotype.

28. *Protaphis terricola* Rondani, 1848

Aphis terricola Rondani cannot be identified from host plant records or from the description. However, PASSERINI (1863) also uses the name *Aphis terricola* Rondani and gives several host plants. BÖRNER (1952) for reasons unknown refers *Aphis terricola* Rondani sensu Passerini to *Cerosipha* del Guercio, subgenus *Uraphis* del Guercio, but other authors have with question marks listed the name *Aphis terricola* Rondani as a synonym of various other species.

However, in the Passerini collection there are two samples of what he considered to be *Aphis terricola* Rondani, one, no. 100, from

Centaurea solstitialis without further data, one, no. 98, from *Centaurea scabiosa*, two host plants mentioned by PASSERINI (1863). Dr. H. L. G. Stroyan and I mounted specimens from each of these old samples and it then became clear that they were *Protaphis*. I choose sample no. 100 as cotypes or syntypes as they clearly represent a « clone ».

The species is described here in extenso because very little is known about discriminants in this genus.

Apterous viviparous female.

Colour in life not noted. In mounted specimens body about 1.60-2.20 mm long, broadly oval, with a darkish sclerotic head, a median, and lateral sclerites on mesothorax; on abdomen distinct brown roundish pleural inter-segmental sclerites that between segments IV/V and V/VI show rather large and very irregularly shaped extensions mediad; tergites VI and VII with a transverse spinal sclerite; VIII with a transverse bar; pleural sclerites between segment IV/V may be linked with those between segments V/VI; marginal sclerites, which usually are reticulated, variably developed to absent. Dorsal hairs very short, the spinal ones on tergite III about 0.009 mm long, the 2 hairs on tergite VIII up to 0.015 mm long. Marginal tubercles on abdominal segments I and VII rather large to large, on segment I with largest axis of 0.025-0.052 mm, on segment VII with a largest axis of 0.035-0.055 mm, very low; small marginal tubercles very irregularly present on segments II and VI. Front distinctly and rather evenly convex. Antennae about 3/7 of length of body, pale, with segment I and the apex of the flagellum dark; the very flat rhinaria on segment III, if there only one or two, then both near apex, if there are more, they extend to near the basal portion of the segment, often not in a row but in a locally duplicated row, 2-10, more rarely 0 or 1 in number; segment IV with 1-4 similarly arranged rhinaria; processus terminalis usually shorter than basal portion of segment VI. Rostrum reaching to past the hind coxae; last segment in the measured specimens 0.140-0.155 mm long, about 1 2/5 times as long as second joints of hind tarsi, with 2 hairs of 0.018-0.026 mm long besides the 3 subapical pairs. Siphunculi blackish, about 1/18-1/15 of length of body, somewhat tapering, about 2 1/3 times as long as their basal width, slightly imbricated, with very small flange. Cauda mostly triangular with straight or just convex sides, blunt, much paler than the siphunculi, to pale, with about 20 slightly curved, acute hairs. Legs rather short; femora black with very short pale basal portion; tibiae pale with dark apices; dorsal hairs on tibiae very short, halfway the hind tibiae about 1/4 of local diameter of those tibiae; first tarsal joints with 3, 3, 2 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on segment		Siph.	Cau.
			III	IV	V	VI	III	IV		
1.	2.12	0.81	0.27	0.11	0.12	(0.13+0.09)	8 & 10	3 & 4	0.13	0.16
2.	1.85	0.79	0.23	0.11	0.12	(0.12+0.11)	9 & ?	2 & ?	0.12	0.14
3.	1.90	0.80	0.25	0.11	0.11	(0.13+0.10)	8 & 9	2 & 2	0.12	0.14
4.	1.78	0.78	0.22	0.10	0.11	(0.13+0.10)	2 & 3	0 & 0	0.10	0.15
5.	1.74	0.75	0.22	0.10	0.10	(0.12+0.10)	3 & 3	0 & 1	0.10	?
6.	1.92	0.69	0.21	0.09	0.10	(0.11+0.09)	3 & 4	1 & 1	0.11	0.14
7.	1.77	0.73	0.22	0.10	0.10	(0.11+0.11)	6 & 7	1 & 1	0.12	0.13
8.	1.66	0.68	0.19	0.07	0.10	(0.11+0.10)	0 & 1	0 & 0	0.09	0.11
9.	1.60	0.76	0.23	0.11	0.10	(0.12+0.11)	6 & 7	2 & 3	0.11	0.15

(1-3, from *Centaurea solstitialis*, no further data, Passerini collection; 4-5, from *Centaurea scabiosa*, no further data, Passerini collection; 6-9, from *Carlina vulgaris*, Ospedaletti (Imperia), 10.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers).

Alate viviparous female.

Colour in life unknown. In mounted specimens head and thorax blackish sclerotic; abdomen with small, dark marginal sclerites, and with roundish pleural intersegmental sclerites which all are of the same small size. Antennae up to half as long as body; flagellum dark with the bases of segments III, IV and V pale; segment III with 9-13 quite flat rhinaria over distal 3/4 part, rarely in a single row; segment IV with 1-4 rhinaria mainly on distal half; segment V without rhinaria. Rostrum, siphunculi, cauda and legs much as in preceding morph. Wing with normal venation, the veins very pale; surface of the fore wings between the veins with a small number of scattered normal hairs in the sample from Ospedaletti. Other characters as in apterous viviparous female.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhin. on segment		Siph.	Cau.
			III	IV	V	VI	III	IV		
1.	1.70	0.83	0.27	0.11	0.12	(0.13+0.11)	12 & 13	3 & 4	0.10	0.15
2.	1.77	0.81	0.28	0.10	0.11	(0.12+0.10)	11 & 7	2 & ?	0.11	0.15
3.	1.55	0.78	0.23	0.11	0.10	(0.12+0.11)	9 & 10	2 & 3	0.11	0.15
4.	1.69	0.78	0.25	0.11	0.10	(0.12+0.10)	10 & 11	3 & 3	0.11	0.14
5.	1.60	0.75	0.22	0.11	0.10	(0.12+0.10)	9 & 11	3 & 3	0.10	0.13
6.	1.54	0.72	0.22	0.11	0.09	(0.11+0.09)	9 & 9	2 & 3	0.09	0.13
7.	1.66	0.80	0.25	0.11	0.10	(0.12+0.11)	9 & 10	2 & 2	0.11	0.15
8.	1.65	0.76	0.26	0.10	0.09	(0.11+0.10)	10 & 11	1 & 3	0.11	0.13

(1-2, from *Centaurea solstitialis*, no further data, Passerini collection; 3-8, from *Carlina vulgaris*, Ospedaletti (Imperia), 10.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers).

Discussion. It is certain that *Protaphis terricola* Rond. as understood by Passerini, and as it has been described above, is not a synonym. Whether it has synonyms is another question.

A number of species belonging in *Protaphis* Börner have been described from Central and Southern Europe. In *P. hartigi* H. R. L. (or as BÖRNER, 1952, because of congeneric host plants but certainly not because of Nevsky's description of 1928 and 1929, writes: *P. alexandrae* Nevsky), *P. centaurea* Gomez-Menor both from *Centaurea* spp., *P. anthemidis* Börner from *Anthemis tinctoria*, and *P. carlinae* Börner from *Carlina caulescens* apterae viviparae normally have no rhinaria on antennal segment III, and this may mean that they are different from *P. terricola*. *P. anthemidis* according to a sample from Czechoslovakia differs from the others by extremely short hairs of 0,004-0,008 mm long on the basal half of the last rostral segment and by a short last rostral segment of only about 0,11-0,13 mm. *P. hartigi* H. R. L., *P. carlinae* Börner and *P. centaurea* Gomez-Menor probably are the same. *P. ignatii* Gomez-Menor from an unidentified Composite was described as having no rhinaria on antennal segment III in apterae, but the description suggests that antennal segment III is only $1\frac{3}{4}$ times as long as segment IV and this suggested a larva or an apterous dwarf; the latter possibility was confirmed when I could remount the type. The species agrees with specimens collected by Prof. H. Franz from *Carlina* sp. near Almeria, Spain. These differ from other European samples by a very short and broad cauda that in apterae is $1\frac{1}{3}$ times, and even in alatae is about $1\frac{1}{10}$ - $1\frac{1}{5}$ times as wide at base as it is long. Adult apterae usually have a few, 1-3 rhinaria on segment III but none on IV, but small specimens, especially if segments IV and III are coalesced, usually have no rhinaria on III. Alatae usually have no rhinaria on antennal segment IV which further helps to recognize *P. ignatii* Gomez-Menor.

P. dudichi Börner was described as having a few, 3-4 rhinaria in apterae viviparae. A number of samples from many other Compositae in which apterae have rhinaria on antennal segment III are in my collection. Whether these are *P. terricola* or not I cannot say. The variability in the samples is great; the number of rhinaria may be a measure for the degree of «alatoidness»; whether host specificity is present has not been investigated; and special studies of this group are badly wanted.

Type. As lectotypes of *Aphis terricola* I choose from the above described specimens those that were collected from *Centaurea solsti-*

tialis from the Passerini collection at Parma. Through the kindness of Prof. B. Schreiber some specimens of that material are also in my collection and in that of Dr. H. L. G. Stroyan, Harpenden, England.

29. *Roepkea marchali* Börner, 1931

This aphid which causes a hard and pale leafcurl on *Prunus mahaleb* was originally described from N. E. Italy. BÖRNER (1952) suggests that the species has host alternation, but like myself found that both sexuals are produced on *Prunus mahaleb*. Observations over many years have shown that the species produces so few alatae on *Prunus mahaleb* that that morph must be considered quite rare, that the insects are throughout summer present on *Prunus mahaleb* and that there is no indication for host alternation.

Yet HOLMAN (1961) records this species from the calyces of *Stachys cretica* and *S. annua*, but states that the processus terminalis in apterae from those hosts is relatively shorter than it is in apterae from *Prunus mahaleb*. The same holds for a sample collected from *Phlomis viscosa* near Hulda, Israel, 6.I.1960, by I. Harpaz & R. van den Bosch. A shorter processus terminalis in exules is so unusual in aphids that I strongly doubted whether the specimens from Labiatae really were *R. marchali*. Examination of material from *Prunus mahaleb* from Turkey and Lebanon, where apparently plenty of alatae are produced, also shows a short processus terminalis and frequently the sclerotic dorsum in apterae is broken up into much corrugated sclerotic bands. It would seem that there is an Eastern, host alternating, subspecies besides a non-migrating, Western, subspecies. For the Eastern, host alternating subspecies the name *Roepkea marchali* subsp. *bathiaschvili* Abashidze, 1951 could be used. According to MAMONTOVA (1955) *Chaitophorus bathiaschvili* from *Prunus mahaleb* is a *Roepkea*, and as the insect was described from Georgia, U.S.S.R., it most probably is the Eastern subspecies.

30. *Schizaphis cyperi* van der Goot, 1917

This aphid, originally described from Java, has been recorded from a great number of Asiatic and African countries, and from Australia (EASTOP, 1961). The first find in Europe was on *Cyperus rotundus*, Antibes, France, 8.IX.1959 but on 24.IX.1960 A. W. Beek & D. Hille Ris Lambers also found it near Ospedaletti (Imperia) in Italy. The little black aphids are easily found by threshing plants.

31. *Takecallis arundicolens* Clarke, 1903

Great numbers of this curious aphid from *Arundinaria* and *Bambusa* were found on the undersides of the leaves of *Arundinaria* near Sanremo (Imperia), 28.IX.1960, leg. A. W. Beek & D. Hille Ris Lambers. A second species, *T. taiwana* Takahashi, that lives on the young shoots of *Arundinaria* and *Bambusa*, could not yet be found in Italy, although it is not rare along the French Riviera. Both species were discussed in HILLE RIS LAMBERS (1965).

32. *Tetraneura caerulescens* Passerini, 1856

From a sample in the Passerini collection at Parma some specimens were mounted by Dr. H. L. G. Stroyan and me, and slides are now in the collection at Parma, and in the collections of both Dr. Stroyan and myself. These specimens are alate sexuparae. According to MARCHAL (1933) there is no good description of the sexuparae of *Tetraneura caerulescens* Pass., and it is quite difficult to link sexuparae with spring migrants in *Tetraneura*.

However, Dr. R. van den Bosch, Berkeley, California, collected galls known as *Tetraneura rubra* Lichtenstein at Antibes, France, and the inhabitants were transferred to *Poa annua* in tubes, with some *Lasius alienus*. Several generations were reared on *Poa annua*, and on August 1st some alatae were obtained from this culture. These are virginoparous which does not matter, as alate virginoparous exules in *Eriosomatinae* are structurally identical with sexuparae. The alate virginoparae from my culture are the same species as Passerini's *caerulescens*, which is described hereafter. It is therefore certain that *Tetraneura rubra* Lichtenstein is a synonym of *T. caerulescens* Pass. Passerini's sexuparae and my alate virginoparous exules are described below.

Alate viviparous female (sexupara and virginoparous exul).

Body about 1.60-2.10 mm long. Wax glands on front larger than median ocellus, with or without one or more larger central cells; on mesonotum similar ones mostly with central cell; on abdomen marginally from segment I to VII large ones that always consist of one or a complex of large central cells surrounded by an at least locally duplicated or triplicated ring of more or less isodiametric small cells; similar, but very much smaller spinal and pleural ones present from segments I-V. Marginal hairs on abdomen rather long, on tergites I-V about 0.060-0.080 mm long. Antennae variable in structure, with segment VI longer than IV, and always somewhat shorter than V (vide measurements); number of rhinaria under high power lens is higher than it seems under low power because several of the seemingly

ring-like rhinaria consist of two parts; hairs on segment III inconspicuous, just shorter than diameter of segment at its strongly constricted base. Last rostral segment short, about 0.11-0.125 mm long, 7/10-6/7 of second joint of hind tarsi, with 4-6 hairs besides the 3 subapical pairs. Siphunculi surrounded by 6-9 hairs. Cauda with 2 hairs, subanal plate with 4 hairs, the very large pair of rudimentary gonapophyses with many hairs. First tarsal joints with 3, 3, 2 or more commonly 3, 2, 2 hairs.

Measurements in mm.

No.	Length body	Ant.	Antennal segments				Rhinaria on segment		
			III	IV	V	VI	III	IV	V
1.	2.06	0.63	0.21	0.07	0.13	(0.07+0.03)	13 & 15	3 & 4	5 & 6
2.	1.92	0.68	0.25	0.09	0.14	(0.09+0.03)	15 & 17	3 & 4	5 & 6
3.	1.64	0.56	0.21	0.05	0.11	(0.07+0.02)	11 & 15	3 & 3	3 & 4
4.	1.64	0.53	0.19	0.05	0.10	(0.06+0.02)	14 & 15	3 & 4	4 & 5
5.	1.68	0.54	0.20	0.05	0.11	(0.07+0.02)	14 & 17	2 & 2	5 & 5

(1-2, sexuparae from Passerini collection; 3-5, virginoparae bred at Bennekom on *Poa annua* after transfer from *Ulmus*, Antibes, France, I.VIII.1962, leg. R. van den Bosch).

Embryos.

Arostral sexuals in sexuparae. Spinal hairs on abdominal tergite III 0.016 mm long, those on VII 0.023 mm long, those on tergite VIII 0.040 mm long. Marginal hairs on III and IV hardly longer than spinal ones. Claws on hind tarsi 0.030 mm long.

Rostrate viviparae in virginoparae. Spinal hairs on abdominal tergite III 0.043 mm long, markedly curved, on tergite VIII 0.085 mm long. Marginal hairs on tergite III 0.065 mm long, on VII 0.075 mm long. Hind tarsal claws 0.027 mm long.

Discussion. In Europe only 3 *Tetraneura* species were known, *T. ulmi* L., *T. caerulescens* Pass. and *T. longisetosa* Dahl. BÖRNER (1950) described *B. personata* as a new species, but this has effectively been buried by ZWÖLFER (1957). Adult apterous and alate virginoparae, and sexuparae of *T. caerulescens* can easily be recognized by the wax glands. All marginal wax glands on abdomen are of about the same size, while in apterae the spinal and pleural glands on abdomen are of that same size. Alatae are distinguished by MORDVILKO (1922, 1935) by the small difference in length between antennal segments V and VI, but I find this not very reliable.

Types. Alate sexuparae of *Pemphigus caerulescens* from the Passerini collection at Parma, some of which are in the collections of Dr. H. L. G. Stroyan, Harpenden, England, and in my collection are chosen as lectocotypes.

33. ***Therioaphis obscura*** Hille Ris Lambers & van den Bosch, 1964

This species appeared to be quite common on *Dorycnium pentaphyllum* between Baiardo and Ceriana (Imperia), 12.IX.1961, leg. A. W. Beek & D. Hille Ris Lambers. The species is now known along the Mediterranean from Spain to Italy.

34. ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers, 1949

Among some aphids collected on 8.VIII.1952 by Dr. G. Marcuzzi in the Marmolada (Trentino) area there was one specimen of this species. It lives on *Arctostaphylos uva ursi*.

RIASSUNTO

L'A. passa in rassegna alcune interessanti specie di Afidi reperite nel corso di brevi visite effettuate in Italia negli ultimi anni o inviategli in esame da studiosi italiani.

Sono descritte le seguenti specie e sottospecie nuove: *Dactynotus pseudobscurus*, *Lachnus castaneae*, *Macrosiphoniella tanacetaria italica*, *Macrosiphum albertinae*, *Periphyllus venetianus*, *Protaphis striata*.

Sono fornite note su alcune specie della collezione Passerini e sono proposte le seguenti nuove combinazioni: *Brachycaudus persicae* (Passerini) e *Protaphis terricola* (Rondani). *Macrosiphoniella chamomillae* Hille Ris Lambers è considerata sinonimo di *Macrosiphoniella tapuskae* (Hottes & Frison).

SUMMARY

Brief notes are given on a number of Aphididae hitherto not known from Italy which the author collected in recent years during short visits to Italy, or received for identification from Italian workers. The following new species or subspecies are described:

Dactynotus pseudobscurus, *Lachnus castaneae*, *Macrosiphoniella tanacetaria italica*, *Macrosiphum albertinae*, *Periphyllus venetianus*, *Protaphis striata*.

Notes are given on some species from the Passerini collection, and the following new combinations are suggested: *Brachycaudus persicae* (Passerini) and *Protaphis terricola* (Rondani). *Macrosiphoniella chamomillae* Hille Ris Lambers is made a synonym of *Macrosiphoniella tapuskae* (Hottes & Frison).

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