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RARE OR INTERESTING SPECIES OF ITALIAN
PSYLLOIDEA. I
(Homoptera)

The present note considers 12 species of psyllids rare or interesting for the Italian fauna. For each species we give the detailed list of the collected material, often with some data on morphology, host plants, life history, general distribution and, when interesting, other observations.

As regarding the material, this is listed according to the observations reported by CONCI & TAMANINI 1984c: 256, 258 and we refer to this work. The localities are reported as distinct for Regions, from North to South and from East to West; it is first indicated, in spaced letters, the name of the Region, followed by the names of the Province and the Commune; when useful, more specific or general locality names are added.

Almost all the material was collected and determined by us and it is preserved in our collections; we indicate only the names of other collectors.

1. *Xanioptera* (*Xanioptera*) *carinthica* (Ossiannilsson, 1963) (figs. 1-4).

New findings in Italy. *Xanioptera carinthica* was examined by CONCI & TAMANINI 1983a (sub *Craspedolepta*). At the same time BURCKHARDT 1983a (pp. 79-80) and 1983b (p. 46) reported this species for Switzerland and ascribed to it the previous reports of *C. pilosa* by CERUTTI 1937 and by SCHAEFER 1949. The works of Burckhardt and our new findings

in North Italy have modified the genomic and ecological situation of this species, as it was hypothesized in our note of 1983. We report our new captures, all on *Artemisia campestris*:

Alto Adige-Südtirol, Province Bolzano-Bozen, Commune Fié allo Sciliar-Völs am Schlern, 600 m, 19.VIII.83, 1 male, 6 females; Silandro-Schlanders, 750 m, 2.VI.84, 5 males, 17 females and one young nymph.

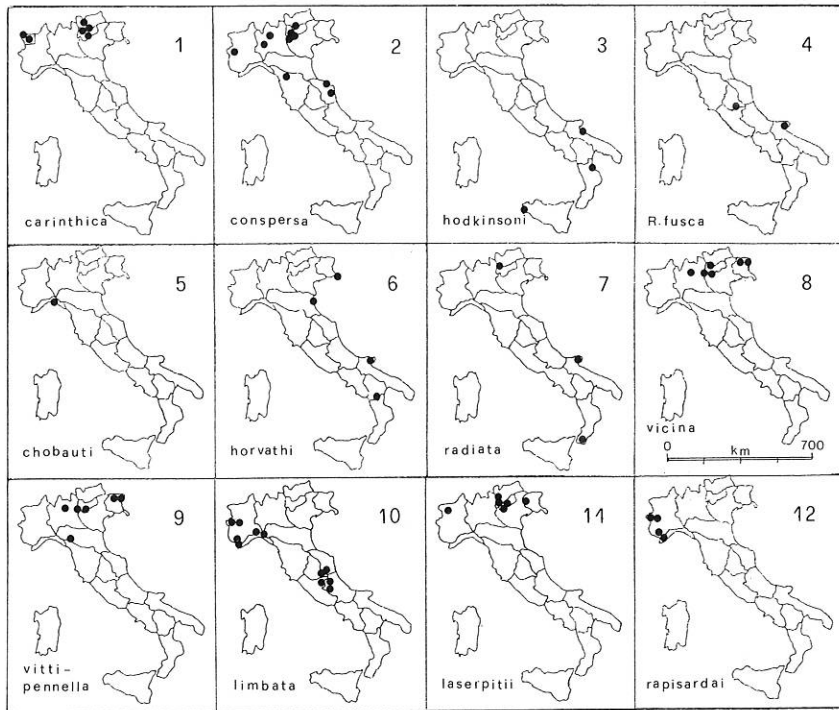


Fig. 1: orientative geographical maps of the presence of the 12 reported species, in the various Regions of Italy.

Trentino, Province Trento, Commune Predazzo, river-bed of Avisio River, 1000 m, 11.VIII.83, 80 specimens; Predazzo, sides of Travinolo Torrent, 1000 m, 11.VIII.83, 28 specimens; Ton, La Rocchetta, 280 m, 8 findings with more than 170 specimens, always present between the end of June and the end of August 1984-87; Fondo, S. Lucia, 1000 m, 20.VII.87, 20 males and 20 females.

Valle d'Aosta, Province Aosta, Commune Saint-Pierre, Vetan, 1400 m, 29.VIII.87, one female; La Thuile; Pont Serrand, 1600 m, 31.VIII.87, one male, 6 females.

On the whole, *X. carinthica* was collected in three Regions of North Italy, in 19 localities, with 28 findings, between 280 and 1700 m, as adult from May to August, with about 400 specimens, and as nymph with only one specimen, mostly on the host plant, *Artemisia campestris*.

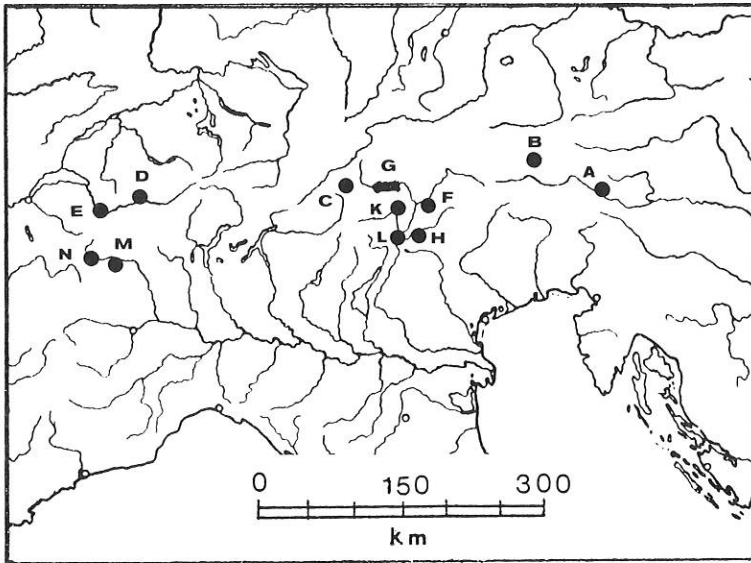


Fig. 2: *Xanioptera (X.) carinthica*, general distribution. A) Austria, Kärnten, Millstädter See in Drava Tal (type locality); B) Austria, Kärnten, Döllach in Mölltal; C) Switzerland, Graubünden, Engadin, Münstertal; D) Switzerland, Valais-Wallis, Montana; E) Switzerland, Valais-Wallis, Martigny; F-N) Italy; F) Alto Adige-Südtirol, Sciliar, Fié; G) Alto Adige-Südtirol, Val Venosta-Vinschagau (12 localities from Naturno-Naturns till Lasa-Laas, in a band long 24 km and wide two km); H) Trentino, Predazzo, riverbed of Avisio river and sides of Travignolo torrent; K) Trentino, Val di Non, Fondo; L) Trentino, Val di Non, Ton, La Rocchetta; M) Valle d'Aosta, Saint-Pierre, Vetan; N) Valle d'Aosta, La Thuile.

Our findings show that *X. carinthica* lives in preference in steppic thermophilous biotopes, but the species is not limited there and it has larger ecological capacities. Travignolo valley is not a xerothermic locality.

Morphology. We report two new figures of the penis, for uniformity with the scheme of KLIMASZEWSKI 1983. The hind vesicle at the penis apex seems to be divided in two parts.

Host plant. The host plant of *X. carinthica* is exclusively *Artemisia campestris* L., on which the adults, if present, are numerous. We collected only one nymph, at the beginning of June: but our researches on the above-mentioned localities were limited to later periods. The findings on *Artemisia absinthium* and *Achillea* sp., reported in our work of 1983a referred certainly to specimens from occasional plants. Also the finding on *Artemisia vulgaris* reported by BURCKHARDT 1983a, 1983b is probably from an occasional plant. CERUTTI 1937 and SCHAEFER 1949 (sub *pilosa*) as well as BURCKHARDT 1983b reported already *Artemisia campestris* as host plant in Switzerland.

General distribution (fig. 2). *X. carinthica*, an Alpine endemism, is the only *Craspedolepta* s. l. which at the present is widespread exclusively in Central Europe and does not live in Oriental Europe and in Asia. Till now *X. carinthica* was collected in two localities of Austria (Kärnten: WAGNER 1949), three localities of Switzerland (Graubünden and Valais: CERUTTI 1937, SCHAEFER 1949, BURCKHARDT 1983a, b) and in 19 Italian localities (Alto Adige, Trentino and Valle d'Aosta). The species was found in a narrow band long about 500 km.

2. *Xanioptera (Loginovia) conspersa* (Loew, 1888) (figs. 1, 5-6).

New findings in Italy. *Xanioptera conspersa* was reported in detail, as *Craspedolepta*, by CONCI & TAMANINI 1983b and was cited for Italy also by CONCI & TAMANINI 1984c: 260. Afterwards we found this species in the following localities:

A l t o A d i g e - S ü d t i r o l, Bolzano-Bozen, Salorno-Salurn, Lago Bianco-Weissee, 1670 m, 14.VIII.86, 1 male on grass.

T r e n t i n o, Trento, other findings at: Mezzolombardo, 230 m; Ton, La Rocchetta, 280 m; Rovereto, 200 m; Terragnolo, Potrich, 1000 m; Ala, 150 m.

L o m b a r d i a, Como, Lecco, 200 m, 15.VI.84, 27 males, 44 females; Santa Maria Hoé, 450 m, 15.VI.84, 1 female; idem, 21.VI.86, 2 females. Milano, Vimercate, 200 m, 20.VII.83, 1 male; Vimodrone, 130 m, 23.VI.84, 1 male, 3 females.

P i e m o n t e, Torino, Chiusa S. Michele, 350 m, 26.VI.83, 1 male, 3 females; Chiomonte, 750 m, 26.VI.83, 1 female; Susa, 500 m, 2.VII.83, 1 female, 1 nymph; Susa, Novalesa, 800 m, 29.VI.83, 1 male, 4 females.

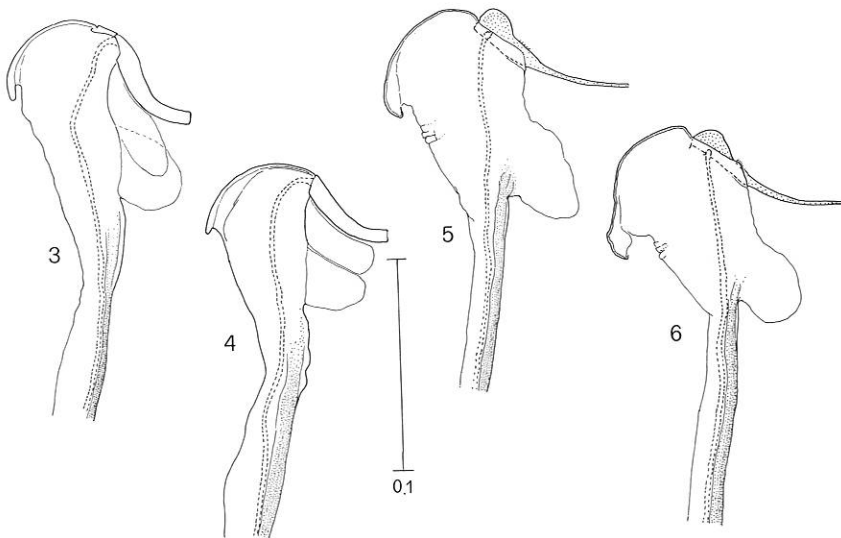
E m i l i a - R o m a g n a, Ravenna, Ravenna, Punta Marina, 5 m, 19.VII.83, 2 females: the large populations that were living in 1982 in this locality disappeared in 1983.

T o s c a n a, Firenze, Barberino di Mugello, 300 m, 20.VI.83, 2 males, 6 females.

M a r c h e, Ancona, Senigallia, 50 m, 17.V.86, 13 males, 5 females. Macerata, Fiastra, 700 m, 16.VI.87, 1 female.

All the abovereported findings were on *Artemisia vulgaris*, except the male of Alto Adige, Lago Bianco, 1670 m, probably carried by the wind.

On the whole, *X. conspersa* was collected by us in 8 Regions of North and Central Italy, in more than 20 localities, with more than 30 findings, between sea level and 1000 m (only a specimen at 1670 m), from the end of May to early September, with more than 340 specimens, on the host plant *Artemisia vulgaris* L. Nymphs, till now undescribed, were found only two times, in July, with only few specimens.



Figs. 3-4: *Xanioptera (X.) carinthica* from Trentino, Ton, La Rocchetta, penis from two specimens. - Figs. 5-6: *Xanioptera (L.) conspersa* from Lombardia, Lecco, penis from two specimens.

Morphology. We report two new figures of the penis, for uniformity with the scheme of KLIMASZEWSKI 1983.

Life history. KWON (1983, in the table) reports that *C. conspersa* overwinters in Korea as adult: in Italy no *Craspedolepta* overwinters in this stage.

General ditribution. *X. conspersa* was recently found also in Bulgaria (GLOWACKA & HARISANOV 1983: 63). To the reports cited in CONCI & TAMANINI 1983b, BABA & MIYATAKE (1971: 7), KWON (1983: 24, figs.) and KONOVALOVA (1988: 515, figs. 406: 12-13) should be added; those reports, respectively from Japan, South Korea and the Territory of Vladivostock (Primorskiy Kray) shuld confirm the very strange geographical distribution of this species: Europe and Far East. Our findings in Piemonte enlarged the distribution of the species toward West.

Observations. *Artemisia vulgaris* in Italy is the host plant of two species of Aphalaridae: *X. conspersa*, widespread in North and Central Italy, and *Tetrafollicula omissa*, which has an areal restricted to Alto Adige and Trentino (CONCI & TAMANINI 1984c: 260). *T. omissa* was found by us in the last years only in Trentino, with many specimens. *Artemisia vulgaris* is a plant very widespread and abundant in the whole Italy. *Craspedolepta latior*, which lives on *Artemisia vulgaris* in Central Europe, was not found so far in Italy.

3. *Rhodochlanis hodkinsoni* Conci & Tamanini, 1984 (fig. 1)

New findings in Italy. *R. hodkinsoni* was described by us in 1984a on many specimens collected in Puglia, Foggia, Manfredonia, Frattarolo (type locality), 8.V.82 and in Puglia, Foggia, Cerignola, Sette Poste, 18.V.82. Afterwards we found the species in the following localities, near sea level and always on *Suaeda fruticosa*:

P u g l i a, the two above mentioned localities, 15.VI.86, many adults and one nymph.

C a l a b r i a, Cosenza, Cassano allo Jonio, near Sibari, 19.VI.87, 7 males, 22 females; Corigliano Calabro, near Camping Thurio, 19.VI.87, 3 males, 16 females.

S i c i l i a, Trapani, Trapani, Marausa-Lido Marani, leg. B. Massa, A. Carapezza and C. Conci, 31.V.85, 32 males, 31 females; Paceco, Torre Nubia, leg. B. Massa, A. Carapezza and C. Conci 31.V.85, 10 males, 8 females. These findings in Sicilia are reported, without the exact localities, by RAPISARDA 1988: 619.

On the whole, *R. hodkinsoni* till now was found in 2 Regions of

South Italy, and in Sicilia, in 6 localities, with 8 findings, at sea level, in May and June, with many adults, always on the host plant, *Suaeda fruticosa*. Only one nymph, so far undescribed, was collected, in May.

Host plant. *R. hodkinsoni* is known only from *Suaeda fruticosa* (L.) Forsskal (= *S. vera* Forsskal), an halophilous, perennial and cosmopolite plant. *S. fruticosa* is the host plant also of *Rhodochlanis suaedae* Hodkinson & Hollis, 1981.

Life history unknown.

General distribution. Till now *R. hodkinsoni* is known only for South Italy and Sicilia.

4. *Rhinocola fusca* Burckhardt, 1984 (fig. 1)

New findings in Italy. *Rhinocola fusca* was described by BURCKHARDT 1984a on one male and 3 females collected by C. Lienhard, 21.VI.1979, in Italy, Puglia, near Foresta Umbra, 700 m, host plant unknown. We have our following findings:

U m b r i a, Terni, Terni, Cesi, S. Erasmo, 700 m, 24.VI.87, 28 males and 42 females, on *Acer obtusatum*.

P u g l i a, Foggia, Vico del Gargano, Foresta Umbra, 650-700 m, 26-27.V.82, 1 male, 4 females on *Acer campestre*; idem, 13-14.V.86, more than 140 adults, some exuviae, on *Acer obtusatum*; idem, 18.VII.84, 1 male, leg. A. Carapezza; Foggia, Monte Sant'Angelo, Foresta Umbra, 700 m, 26-27.V.82, 6 males on *Acer obtusatum*; idem, 4 males, 4 females on *Acer campestre*. Exuviae were sent to Dr. Burckhardt, who works on the revision of the Rhinocolini.

On the whole, *R. fusca* till now was found only in two Regions of Central and South Italy, in 3 localities, with some findings, between 650 and 700 m, from May to July, with more than 250 adults, almost always on its host plant, *Acer obtusatum*; probably *Acer campestre* is an accidental host. Only few exuviae, so far undescribed, were collected, in May.

Host plant. *Acer obtusatum* W. & K. is the host plant of *R. fusca*, reported here for the first time. This plant has a distributional area limited to West Balkan Peninsula (only in separate zones), Central and South Apennines, Sicilia and Algeria (FERRARINI 1986: 194, figs. 10, 11).

Life history. *R. fusca* has probably one generation per year; the stage of overwintering is unknown.

General distribution. Till now *R. fusca* is known only for Central and South Italy.

5. *Diaphorina chobauti* Puton, 1898 (fig. 1)

New findings in Italy. After what has been reported by CONCI & TAMANINI 1984c: 261, fig. 1, the excellent revision of the Mediterranean *Diaphorina* by BURCKHARDT 1984b was published and we found other material of *D. chobauti* in the same locality which was already investigated:

L i g u r i a, Genova, Genova, Apparizione, Mount Fascie, 400 m, 26.VI.85, 10 males, 13 females, 1 nymph, on *Convolvulus cantabrica*; idem, 2.VIII.85, 1 male; afterwards, the biotope was destroyed by fire.

On the whole, *D. chobauti* was collected by us in only one Region and locality of North Italy, with 5 findings, at 400 m, with 12 males and 15 females, in June, August and October, on *Convolvulus cantabrica* and in meadow. Only one nymph was collected, in June.

Host plant. *Convolvulus cantabrica* L. is new host plant for this species, already reported for other *Convolvulus* spp.

General distribution. *D. chobauti*, described from Algeria, Biskra, was cited also from Italy, Tunisia and Cyprus (BURCKHARDT 1984b). Many synonymies proposed by BURCKHARDT 1984b enlarged very much the distribution of the species in Asia, from Caucasus, through Sovietic Central Asia, till Mongolia. The locality of our findings is the only one so far precised for Europe.

6. *Livilla horvathi* (Scott, 1879) (fig. 1)

New findings in Italy. *Livilla horvathi* was reported for Italy by GRAEFFE (1911: 239): V e n e z i a G i u l i a - F r i u l i, Trieste, M. Spaccato (not cited in the excellent monography by HODKINSON & HOLLIS 1987). We found the species in the following localities:

E m i l i a - R o m a g n a, Ravenna, Ravenna, Bardello, Pineta di San Vitale, near sea level, 24-26.VII.82, 35 males, 30 females, 5 nymphs, on *Genista tinctoria*.

P u g l i a, Foggia, Vico del Gargano, Foresta Umbra, 700 m, 27.V.82, 26 males, 25 females, 15 nymphs, on *Genista tinctoria*; idem, 13.V.86, 1 female, 1 nymph, on *Genista tinctoria*.

B a s i l i c a t a, Potenza, Rotonda, M. Pollino, 1400 m, 21.VI.87, 51 males, 44 females, 16 nymphs, on *Genista sericea*.

On the whole, *L. horvathi* was found in 4 Regions of North and South Italy, in 4 localities, with 5 findings, at sea level, 700 and 1400 m,

from May to July, with more than 200 adults and some nymphs (undescribed), on *Genista tinctoria* and *Genista sericea*.

Host plants. *L. horvathi* is reported in the literature from *Chamaecytisus austriacus* (L.) Link. and *Genista tinctoria* L.; *Genista sericea* Wulfen is new host plant.

General distribution. Poland, Czechoslovakia, Italy, South-East Europe, Turkey.

7. *Livilla radiata* (Förster, 1848) (fig. 1)

New findings in Italy. A. COSTA described *Psylla lactea* from Calabria, Aspromonte, in 1863. The species, synonymized with *Alleoneura radiata*, was recently ascribed by HODKINSON & HOLLIS 1987 to the genus *Livilla*. After Costa, nobody found *L. radiata* in Italy; we collected the species very locally in the following localities:

T r e n t i n o, Trento, Ruffré, route between Ronzone and Mendola, 1350 m, 14.VII.87, 18 males and 26 females, with *Livilla cognata*, on *Chamaecytisus hirsutus*.

P u g l i a, Foggia, Vico del Gargano, Foresta Umbra, 700 m; 13-14.V. 86, 22 males, 35 females, 27 nymphs, on *Cytisus villosus*.

On the whole, *L. radiata* was found till now in 3 Regions of North-East and South Italy, in 3 localities with 3 findings, at 700 and 1350 m, in May and July, with 40 males, 61 females and 27 nymphs, in Trentino on *Chamaecytisus hirsutus* and in Puglia on *Cytisus villosus*.

Host plants. *L. radiata* is an oligophagous species and till now was reported on *Lembotropis nigricans* (L.) Griseb, *Chamaecytisus austriacus* (L.) Link, *Ch. borystenicus* (Grunner) A. Klaskova, *Ch. heuffelii* (Wierzb.) Rothm., *Ch. ratisbonensis* (Schaeffer) Rothm. and *Genista tinctoria* L.; *Cytisus villosus* Pourret and *Chamaecytisus hirsutus* (L.) Link are new host plants.

General distribution. The species is widespread in Central and South-East Europe; till now it has not been found in France and Switzerland.

8. *Livilla vicina* (Löw, 1886) (figs. 1, 7-9)

Livilla vicina was described (as *Floria*) by LOEW 1886: 159-160, on specimens collected by Prof. F. Then in «Kärnten, Raibl» from *Cytisus radiatus*. This only finding was reported in all the subsequent literature. The type-locality of *L. vicina* regards the Austro-Hungarian Empire:

after World War I the zone is in Italy, Region Friuli-Venezia Giulia, Province Udine, Commune Tarvisio, and the locality is named Predil, near the frontier with Yugoslavia.

CERUTTI 1939 (pags. 448-449, figs. 11-15) described *Arytaena montana* from Switzerland, Valais, Montana in Rhone Valley, from *Cytisus radiatus*; SCHAEFER 1949: 55 reported these findings; this specific name was used in the subsequent literature for the reports from Switzerland. TAMANINI 1955: 11 reports *Arytaina montana* from Italy, Trentino, and 1977: 109-110, figs. 11-13, 28, from Trentino and Lombardia (the assertion at pag. 110 «*A. genistae*, that lives with *A. montana*» is erroneous.

BURCKHARDT 1983a: 169 and 1983b: 55 synonymized the two species and fixed the lectotypus of *A. montana* from Vermala (very near Montana). HODKINSON & HOLLIS 1987: 24 transferred the species to the genus *Livilla*.

New findings in Italy. We report other findings almost all on *Genista radiata*:

Friuli-Venezia Giulia, Udine, Lusevera, Passo di Tanamea, 850 m, leg. C. Rapisarda 31.V.86, 1 male; Verzegnis, Sella Chianzutan, 950 m, leg. C. Rapisarda 1.VI.86, 3 males, 4 females. These two findings are reported, as *Floria vicina*, by RAPISARDA & CONCI, in press.

Veneto, Vicenza, Arsiero, Passo della Vena, M. Campomolon, 1500 m, 24.IX.83, 3 males, 3 females; Arsiero, M. Toraro, Cima Valbona, 1800 m, 5.II.83, 8 males, 10 females. Verona, Malcesine, Monte Baldo, Bocca di Navene, 1440 m, 26.IX.86, 1 male, 3 females.

Trentino, Trento, Ruffré, M. Penegal, 1700 m, 22.VII.83, 1 male, on meadow; Bezzecca, Val di Ledro, M. Cadria, Malga Vies, 1550 m, 6.IX.79, 15 es. For South Trentino, where *Genista radiata* is very frequent and widespread in calcareous Pre-Alps, we have 12 localities in the Communes of Folgaria, Terragnolo, Villa Lagarina, Ronzo and Brentonico, with 23 findings.

Lombardia, Brescia, Tremosine, Val Bondo, 1000 m, 13.VIII.84, 50 specimens.

On the whole, *L. vicina* was found in 4 Regions of North Italy, in 19 localities, with 35 findings, between 850 and 1900 m, during the whole year as adult (except March), with more than 300 specimens, almost always on the host plant, *Genista radiata*, but also on conifers (3 findings in February, April and December). In 7 localities, with 10 findings, *L. vicina* was found together with *L. vittipennella*.

L. vicina and *L. vittipennella* have in Italy an almost coincident distribution, but *L. vicina* till now was not found in the Apennines. Regard-



Fig. 7



Fig. 8

Figs. 7-8: biotope of *Livilla vicina* and *L. vittipennella* on *Genista radiata*, Trentino, M. Baldo, Bocca di Navene, 1500-1600 m. *Genista radiata* is dominant on the stony and rocky calcareous slope.

ing the height of findings, *L. vicina* was found starting from a higher altitude than *L. vittipennella*.

Host plant. *L. vicina* and *L. vittipennella* are monophagous on *Genista radiata* (L.) Scop. (syn. *Cytisus radiatus*), a little erect, orophilous, calcicole shrub which lives, according TUTIN 1968, 2: 99, on «Alps extending to E. Switzerland, C. Italy and W Jugoslavia, and very locally to S. W. Rumania and Greece. Al Au Ga Gr He It Ju Rm». In Italy *G. radiata* is very common above all on the calcareous Pre-Alps of South Trentino, with wide populations between 800 and 1600 m; we found

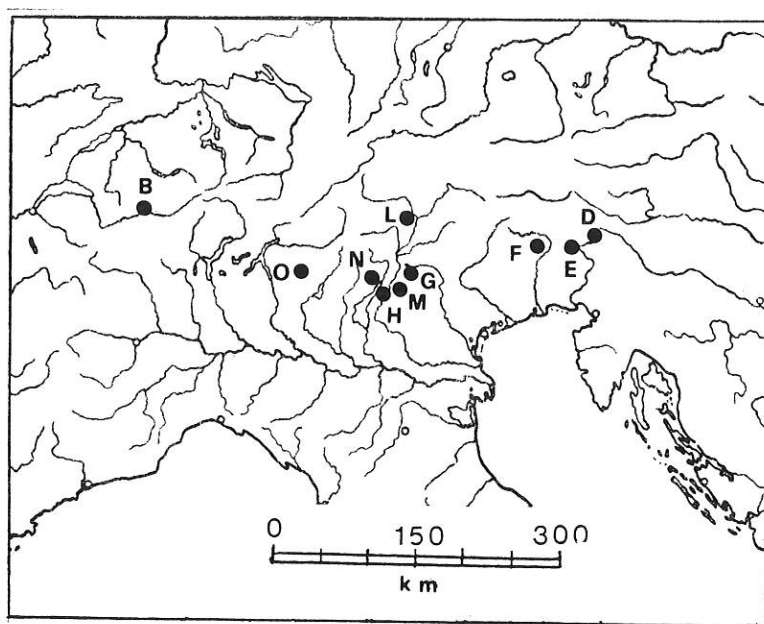


Fig. 9: *Livilla vicina*, general distribution.

Localities of findings of *Livilla vicina* (= *vic.*) and *L. vittipennella* (= *vitt.*): A) Yugoslavia, Slovenija, Mount Tringlav (= Terglou), type locality of *Psylla vittipennella* (*vitt.*); B) Switzerland, Valais, Montana-Vermala, type locality of *Arytaina montana* and *Floria lineata* (*vic.*, *vitt.*); C) Switzerland, Valais, Ardon (*vitt.*); D-P) Italy; D) Friuli-Venezia Giulia, Predil (= Raibl), type locality of *Floria vicina* (*vic.*, *vitt.*); E) Friuli-Venezia Giulia, Lusevera, Passo Tanamea (*vic.*, *vitt.*); F) Friuli-Venezia Giulia, Verzegnis (*vic.*); G) Veneto, Arsiero (*vic.*, *vitt.*); H) Veneto and Trentino, M. Baldo, Bocca di Navene (*vic.*, *vitt.*); L) Trentino, M. Penegal (*vic.*); M) South Trentino, many close localities (*vic.*, *vitt.*); N) Trentino, Bezzecca (*vic.*) and Lombardia, Tremosine (*vic.*, *vitt.*); O) Lombardia, Bergamo, M. Arera (*vic.*, *vitt.*); P) Emilia-Romagna, Parma, Berceto, Passo d. Sillara (*vitt.*).

this plant also at 150 m, in the Sarca Valley, near Dro, on the residuals of a landslide.

Life history. We confirm the observations by CERUTTI 1939: 449 and by SCHAEFER 1949: 35 that *L. vicina* overwinters as adult on the host plant (we have 14 findings between November and April); we have found only 3 times very few specimens during the winter also on conifers. We think that the species has one generation per year.

Till now we not have determined the nymphs (undescribed) found 3 times in August on *G. radiata*, collected with adults of both *L. vicina* and *L. vittipennella*.

General distribution (fig. 9). *L. vicina* till now is known only for a small zone of Switzerland, right slope of Rhone valley, and for N. Italy (East and Central South Alps). The species may be considered an Alpine endemism. The records from Austria are incorrect. Therefore the published distribution of *L. vicina* is very restricted compared with the total distribution of its host plant.

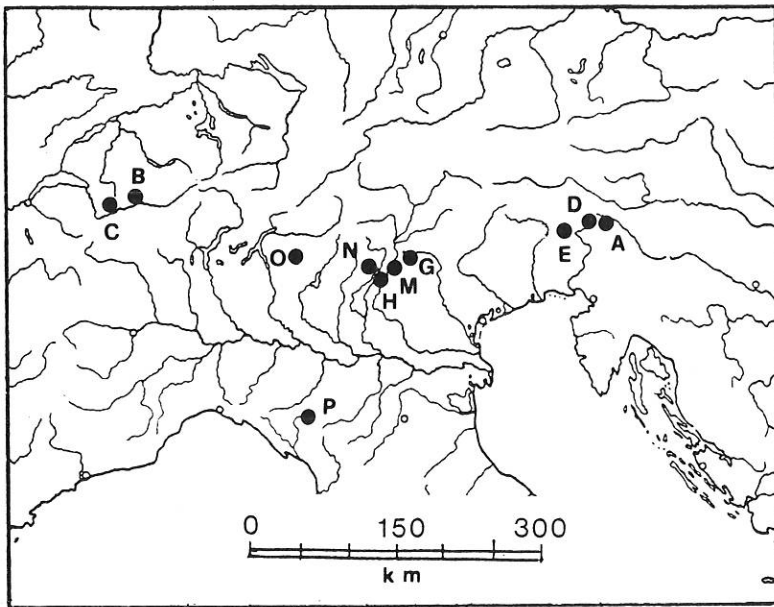


Fig. 10: *Livilla vittipennella*, general distribution. For the names of the localities, see under the explanation of fig. 9.

9. *Livilla vittipennella* (Reuter, 1875) (figs. 1, 7, 8, 10)

Livilla vittipennella was described (as *Psylla*) by REUTER 1875: 333, without host plant and on unspecified number of specimens, only females, collected by D. Axel Palmén «ad Terglou Carnioliae»; at that time Carniolia belonged to the Austria-Hungarian Empire. The type locality, in Yugoslav Triglav, in Italian Mount Tricorno, now is in Yugoslavia, Slovenija.

LOEW 1888: 20 reported a new finding (as *Floria*) in Kärnten, Raibl, on *Cytisus radiatus*, leg. Prof. F. Then, collected with *Floria vicina*. Also Raibl at that time belonged to the Austria-Hungarian Empire and is located at 20 km West of M. Terglou. After World War I, Raibl is in Italy, Region Friuli-Venezia Giulia, Province Udine, Commune Tarvisio, and is named Predil. The species was reported, in the subsequent literature, from Austria, Carniolia and Kärnten (Carinthia).

CERUTTI 1939a: 445-447, figs. 2-6 described *Floria lineata* from Switzerland, Valais: Lens (1500 m) and Ardon (500 m), in Rhone Valley, from *Cytisus radiatus*; SCHAEFER 1949: 55-56 reported these findings. TAMANINI 1977: 111, figs. 19-23 reports *Flora lineata* for three Regions of North Italy (Veneto, Trentino, Lombardia). BURCKHARDT 1983a: 168-169 and 1983b: 54 synonymized the two species and fixed the lectotypus male of *F. lineata* from Vermala (very near Montana).

New findings in Italy. We report other findings on *Genista radiata*:

Friuli-Venezia Giulia, Udine, Lusevera, Passo di Tanamea, 850 m, leg. C. Rapisarda 31.V.86, 9 females (finding reported, as *Floria vittipennella*, by RAPISARDA & CONCI, in press).

Veneto, Vicenza, Arsiero, Passo della Vena, M. Campomolon, 1500 m, 24.IX.83, 2 females.

Trentino, Trento, 8 localities with 15 findings on the mountains of the South East carcareous Pre-Alps, in the Communes of Folgaria, Terragnolo, Rovereto, Vallarsa, Villa Lagarina, Pannone, Brentonico, between 600 and 1350 m, from July to September; we found 1 female at Terragnolo, Rovri, 24.XI.86 and 1 female at Rovereto, Senter, 600 m, 28.XII.82. Unusual for the altitude the finding in Dro, Solo Lake, 150 m, 3 males, 3 females, 7.IX.84.

Lombardia, Brescia, Tremosine, Val Bondo, 1000 m, 13.VIII.84, 10 specimens.

Emilia-Romagna, Parma, Berceto, Passo della Sillara, 1100 m, 11.VI.83, 40 specimens; idem, 2.VI.87, some nymphs, probably of this species.

On the whole, *L. vittipennella* was found in 5 Regions of North

Italy, in 16 localities, with 24 findings, at 150, 600 and from 850 to 1900 m, from the end of May to December (except October), with more than 300 adults specimens, always on the host plant, *Genista radiata*. In 7 localities, with 10 findings, *L. vittipennella* was found with *L. vicina*.

Host plant. *L. vittipennella* lives as monophagous on *Genista radiata* (L.) Scop.: for this plant see under *L. vicina*. We have only one finding on an occasional plant (*Salix*), in August, and none on conifers.

Life history. *L. vittipennella* has one generation per year. The stage of overwintering needs new controls and probably is different from that of *L. vicina*; we have found adults on *G. radiata* till the end of December, but not from January till end of May. Also SCHAEFER 1949 reports a similar period for the findings of the adults. Till now we not have determined the nymphs (undescribed) collected by us in localities where also *L. vicina* lives. Only at Parma, Berceto, 1100 m, we have collected only *L. vittipennella* adults, 11.VI.83; and nymphs probably of this species, 2.VI.87.

General distribution (fig. 10). Yugoslavia, only the type locality: Slovenija, M. Triglav (= Terglou, = Tricorno). Switzerland, only Valais, right slope of Rhone Valley, between Ardon and Montana-Vermala (500-1500 m) and everywhere *G. radiata* lives in this zone (Vermala is the lectotype locality of *Floria lineata*). North Italy: East and Central Southern Alps, North Apennines. The species may be considered an Alpine-North Apennine endemism.

The finding in Austria is incorrect. The reports by VONDRACEK 1951: 128 for Greece and by SMRECZINSKI 1954: 141 for Poland are mis-identifications (probably they are *L. horvathi*: HODKINSON & HOLLIS 1987: 26).

Therefore the known distribution of *L. vittipennella* (as that of *L. vicina*) is very small if compared with the distribution of its host plant. *L. vittipennella* has a greater distribution and ecological possibilities than *L. vicina*: both in Switzerland and in Italy *L. vittipennella* was found also at a lower altitude.

10. *Cacopsylla limbata* (Meyer-Dür, 1871) (fig. 1)

New findings in Italy. After what has been published by CONCI & TAMANINI 1982, *Cacopsylla limbata* was reported only by BURCKHARDT (1983b: 60) who fixed the Lectotypus (preserved in Museum Wien) and reported two new findings in Switzerland. We have the following new localities in Italy:

V a l l e d' A o s t a, Aosta, Saint-Pierre, Vetan, 1400 m, 29.VIII.87, 1 female on *Rhamnus alpinus*; idem, 1670 m, 29.VIII.87, 2 males, 2 females on *Picea excelsa*; La Thuile, Pont Serrand, 1400 m, 31.VIII.87, 1 female on *Larix decidua*.

P i e m o n t e, Torino, Cesana, 1300 m, 1.VII.83, 5 males, 10 females, on *R. alpinus*; idem, 1550 m, 21.IX.84, 2 males, 8 females, 2 nymphs, 20 exuviae, on *R. alpinus*; Pragelato, Gran Puy, 1850 m, 4.IX.88, 4 males, 2 females, 2 nymphs, 20 exuviae, on *R. alpinus*; Prali, Ribba, 1550 m, 2.IX.88, 1 female, on *Larix decidua*. Cuneo, Demonte, Argentera, 1700 m, 28.VIII.86, 1 male, 1 exuvia, on *R. alpinus*; Demonte, Vallone dell'Arma, 1600 m, 30.VIII.86, 1 female; id., 1700-1800 m, 31.VIII.86, 1 male, 3 females, 1 nymph, 5 exuviae, on *Rhamnus pumilus*. Alessandria, Bosio, Capanne di Marcarolo, 700 m, leg. L. Gaggero, 9.XII.84, 1 male, on *Pinus*.

L i g u r i a, Imperia, Pigna, Alpi Marittime, Colla Melosa, 1500 m, 28.XII.87, 3 males, 3 females on *Juniperus communis*.

A b r u z z o, L'Aquila, Campo Imperatore, 1500 m, 17.VI.88, 1 male, 1 female, on *R. alpinus*; Ovindoli, 1450 m, 10.V.86, 5 males, on *R. alpinus*.

On the whole, *P. limbata* was collected by us in 6 Regions of NW and Central Italy, in about 19 localities, with 25 findings, between 700 and 1900 m, with 173 males and 148 females, from May to September on *Rhamnus alpinus* and *R. pumilus*, host plants, and in August, September and December on conifers (*Larix decidua*, *Picea excelsa*, *Pinus sylvestris* and *Juniperus communis*); mature nymphs and exuviae were collected in August and September.

Host plants. The normal host plant of *C. limbata* in Italy is *Rhamnus alpinus* L., a species widespread on Alps, South Europe and NW Africa. New host plant is *Rhamnus pumilus* Turra, an orophilous species of South and Central-South Europe.

Life history. Among the observation after 1982, those of 10.V.86 in Ovindoli, 1450 m are interesting when we observed adults which have already overwintered, on the buds of *Rhamnus alpinus*, at the beginning of opening; specimens collected in the same locality the 28.V.82 were in full sexual activity and coupled in the collecting tubes. Therefore the new findings ascertain that *C. limbata* in Italy: has one generation per year; overwinters on conifers; returns on the host plant already in May; emerges as adults in August and September.

General distribution. *C. limbata* till now is known only for an unstated locality of Pyrenees, 6 findings in Switzerland and our 25 findings in NE and Central Italy.

11. *Trioza laserpitii* Burckhardt & Lauterer, 1982 (figs. 1, 11-37)

Trioza laserpitii was described by BURCKHARDT & LAUTERER 1982 in an excellent work, much exhaustive. Afterwards BURCKHARDT (1986: 418-421, figs.) examined the species again.

We collected in 1984-87 quite a lot of material (eggs, nymphs and adults) in NE Italy, Trentino, Non Valley, mostly on *Laserpitium siler*. At first we thought that our material belonged to a different taxon, for characters of the nymphs and of the male terminalia. Both other observations, the examen of specimens sent us by Dr. Burckhardt and Lauterer, and Dr. Burckhardt's kind opinion, convinced us that it was *T. laserpitii*.

Morphology. The differences of the parameres of our specimens derived from different orientations compared with the figures of the original description. The different aspect of the nymphs (brown, while the nymphs from *Laserpitium latifolium* were white) derived from different maturation of specimens.

We think useful to report our drawings for a contribution to the knowledge of this interesting species.

New findings in Italy. The first records of *T. laserpitii* for Italy should be those by MARIANI 1907: 64 and 1908: 301-302, who reports deformations on leaves of *Laserpitium marginatum* [= *L. krapfii*] from *Trioza* sp. in Valgrisanche [Valle d'Aosta] and Tarantasia [which is in France, Isère Valley]. BURCKHARDT 1986: 421 reports «Italy: Dolomites».

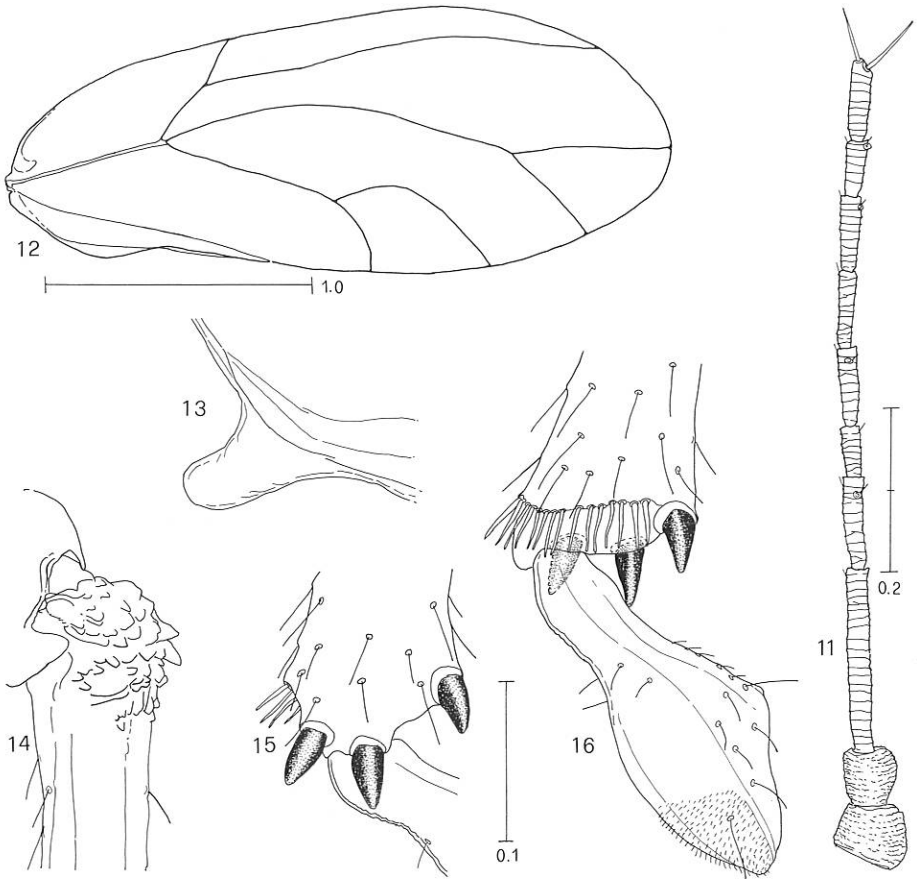
Our findings are numerous. In Trentino and Alto Adige, Non Valley, *Laserpitium siler* L. is a very abundant plant, among the most common ones in the sunny semiarid meadows and in the stony slopes with good exposition to the sunshine. The presence of the *Trioza* is sporadic: in some restricted zones it is abundant (for example among the route Mendola-Mount Penegal at 1640 m), but often this psyllid is lacking. Also *Laserpitium krapfii* ssp. *gaudinii* (Moretti) Thell. is frequent in the zone Fondo-M. Penegal, and we found there great number of nymphs of *Trioza*, which caused the characteristic maculation on the leaves. *Laserpitium latifolium* L. is less frequent and on this plant species *T. laserpitii* was found only in an adjacent locality (Alto Adige, Caldaro-Kaltern, Mendola, between 1200-1300 m), with some specimens.

Trioza laserpitii in the above mentioned zone of Trentino was found also overwintering on *Picea excelsa*, between 1100 and 1700 m, in January, April and July-September; we did not conduct researches in the other months. In total, in Trentino-Alto Adige, in the zone Passo Palade-

Fondo-Ronzone-Mendola-M. Penegal, in July 1984-86, we found some hundreds of *T. laserpitii*. We did not find *T. rapisardai*.

We report also our other findings in Italy, outside the recorded zone:

Friuli-Venezia Giulia, Pordenone, Aviano, Mount Cavallo, Piancavallo, 1300 m, 19.IX.87, 1 male, 7 nymphs, on *Laserpitium latifolium*.



Figs. 11-16: *Trioza laserpitii*, specimens from Trentino, Ruffré, Mount Penegal. - Fig. 11: antenna. - Fig. 12: female, forewing. - Fig. 13: meracanthus. - Fig. 14: basis of metatibia. - Fig. 15: apex of metatibia. - Fig. 16: apex of metatibia and tarsus.

V e n e t o, Verona, Malcesine, Bocca di Navene, 1450 m, 18.VIII.88, 1 male on *Las. siler*.

A l t o A d i g e, Bolzano-Bozen, Tesimo-Tisens, 1400 m, 15.VII.86, 1 male, 3 females, on *Las. siler*.

T r e n t i n o, Trento, Predazzo, Bellamonte, 1300 m, 27.VIII.84, 4 males, 1 females, 3 nymphs, on *Las. siler*; Terragnolo, between Castello and Rovri, 1000 m, 30.IX.86, 2 females on *Las. siler*.

V a l l e d ' A o s t a, La Thuile, 1450 m, 31.VIII.87, 2 males, 3 females, 3 nymphs, on *Las. latifolium*; La Thuile, Pont Serrand, 1600 m, 31.VIII.87, 11 males, 12 females and 6 nymphs, on *Las. siler*; idem, 9 males, 8 females on *Larix decidua*.

On the whole, *Trioza laserpitii* was collected by us in 5 Regions of North Italy, in about 20 localities, with more than 40 findings, between 1000 and 1700 m, from July to September, with some hundreds of adults and many nymphs, on the host plants (*Laserpitium krapfii* ssp. *gaudini*, *L. latifolium* and *L. siler*); and in January, in April and from July to September on conifers.

General distribution. Sweden, Central Europe, Rumania.

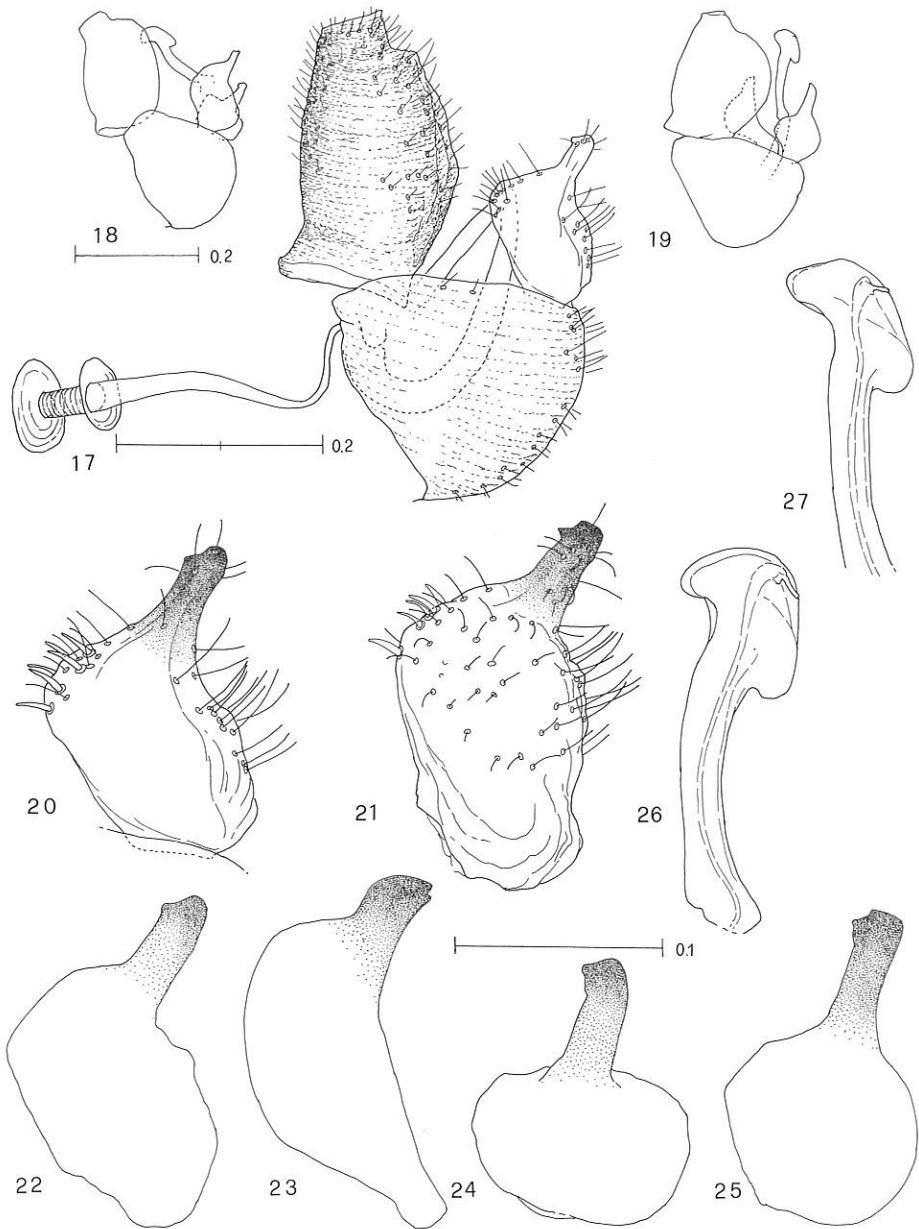
12. *Trioza rapisardai* Conci & Tamanini 1984 (figs. 1, 38-45)

New findings in Italy. *Trioza rapisardai* was described by us in 1984, on some specimens collected in Piemonte, in three close localities near Cesana. Afterwards we found this rare species in the following localities:

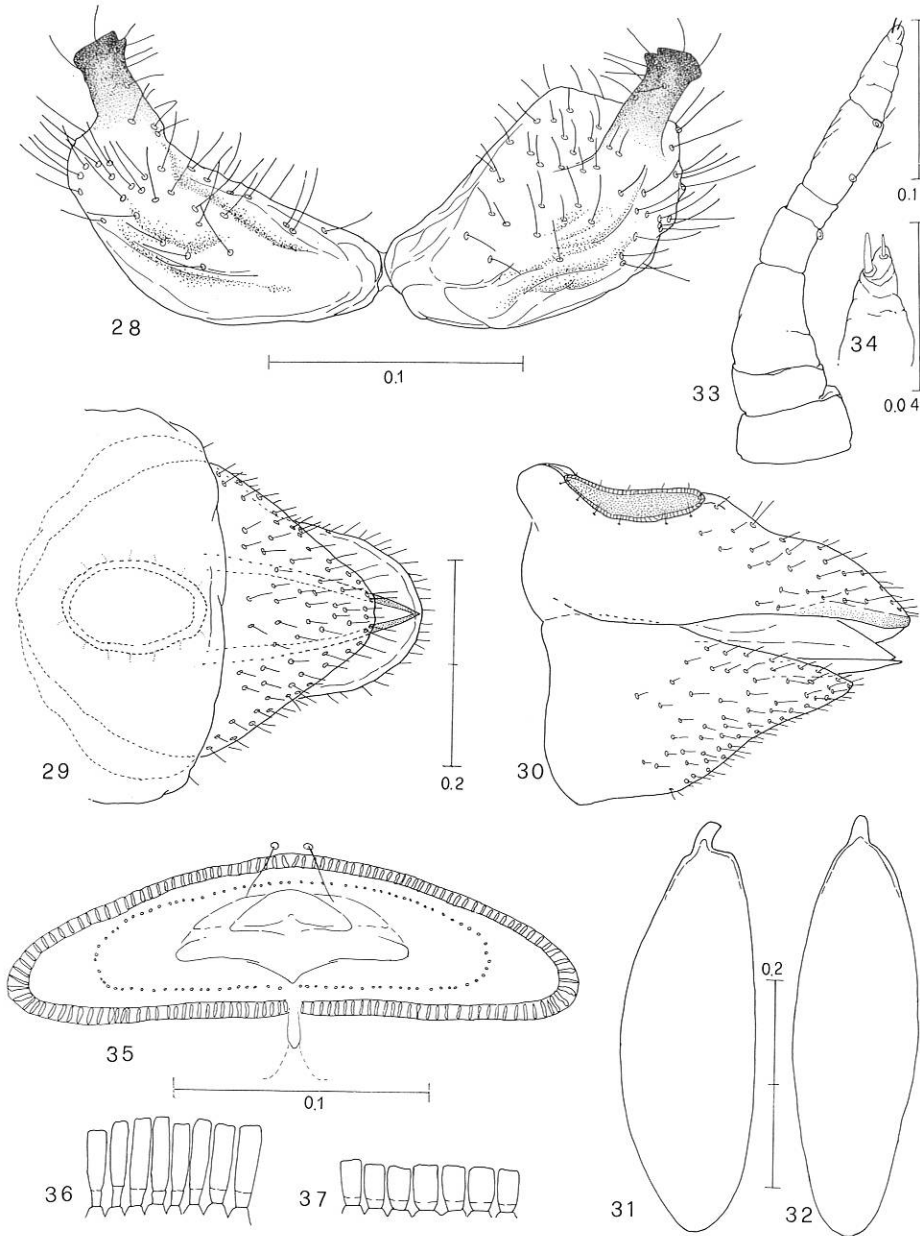
P i e m o n t e, Province Torino, road Cesana-Sestriere, 1550 m (Alpi Cozie, Valle di Susa), 6.IX.88, 2 females on *Laserpitium siler* (in this locality, where the 21.IX.84 the species was relatively common, in 1988 the plants were almost dried); Torino, Pragelato, Gran Puy, 1850 m (Alpi Cozie, Valle del Chisone), 4.IX.88, 8 males, 5 females, some nymphs, on *Laserpitium siler*; Torino, Prali, Ribbia, 1600 m (Alpi Cozie, Valle Germanasca), 2.IX.88, 15 males, 30 females, some nymphs, on *Laserpitium siler*; idem, 1550 m, 2 males, 1 female, on *Larix decidua*. Province Cuneo, Demonte, Vallone dell'Arma, 1600-1700 m (Alpi Cozie, Valle Stura), 30.VIII.86, 3 males, 6 females, on *Laserpitium siler*.

L i g u r i a, Province Imperia, Pigna, Colla Melosa, 1500 m (Alpi Marittime), 26.IX.88, 5 males, 3 females, 3 nymphs, on *Laserpitium gallicum*, and once on *Larix decidua*; idem, 1500-1550 m, 28-29.XII.88, 3 males and 9 females on *Juniperus communis*; idem, 1550 m, 28.XII.88, 2 males, 1 female on *Abies alba*.

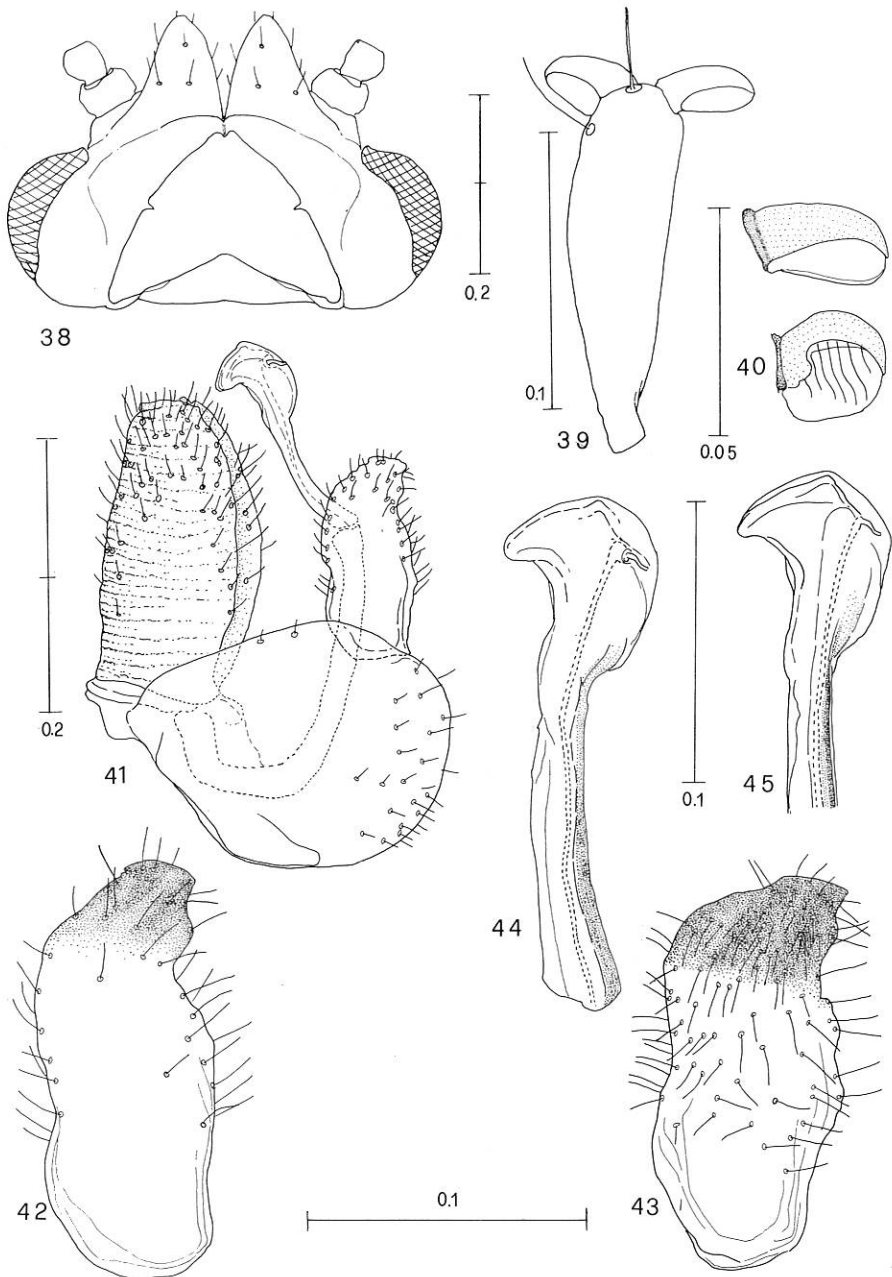
On the whole, till now *T. rapisardai* was found only in NW Italy,



Figs. 17-27: *Trioza laserpitii*, male specimens from Tentino, Ruffré, Mount Penegal. - Fig. 17: terminalia. - Figs. 18-19: terminalia, sketch of two other specimens. - Fig. 20: left paramere, outer surface. - Fig. 21: right paramere, inner surface, - Figs. 22-25: parameres, lateral view, with different inclinations. - Figs. 26-27: penis from two specimens.



Figs. 28-37: *Trioza laserpitii*, specimens from Trentino, Ruffré, Mount Penegal. - Fig. 28: parameres, posterior view. - Fig. 29: female proctiger, dorsal view. - Fig. 30: female proctiger, lateral view. - Figs. 31-32: eggs. - Fig. 33: V instar nymph, antenna. - Fig. 34: idem, apex of antenna. - Fig. 35: idem, anal zone. - Fig. 36: idem, head margin setae. - Fig. 37: idem, abdomen margin setae.



Figs. 38-45; *Trioza rapisardai*, males from Piemonte, Cuneo, Demonte, Vallone dell'Arma. - Fig. 38: head, seen from below. - Fig. 39: tarsus. - Fig. 40: claws. - Fig. 41: terminalia. - Fig. 42: left paramere, outer surface. - Fig. 43: right paramere, inner surface. - Figs. 44-45: penis, from two specimens.

on the Cozie and Marittime Alps, in two Regions and in 7 localities, with 9 findings, between 1330 and 1850 m, from July to September, with 47 males, 67 females and some nymphs, on the host plants *Laserpitium siler* and *Laserpitium gallicum*, and once on conifers.

Morphology. We report 8 drawings of specimens from Cuneo Province, as a contribution to a better knowledge of this species.

Host plants. *T. rapisardai* lives on *Laserpitium siler* L. (host plant also of the more common *T. laserpitii*) and on *L. gallicum* L., new host plant: this Western species from *Laserpitium* is local and rare, unlikely the widespread and common *T. laserpitii*.

Life history. Our new findings confirm the hypothesis that *T. rapisardai* has only one single generation per year and overwinters as adult on conifers.

General distribution. *T. rapisardai* was found till now only in NW Italy, on the Cozie and Marittime Alps.

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REFERENCES

- BABA K. & MIYATAKE Y., 1971 - Notes on Psyllidae from Sado Island, Niigata Prefecture - *Bull. Osaka Museum nat. hist.*, Osaka, 24: 5-13, 3 gr. figs.
- BURCKHARDT D., 1983a - Revision der Aphalaridae der westlichen Palaearktis und Liste der schweizerischen Psyllodea - *Abh. Erl. Titels Doktors Naturw.*, E.T.H., Zuerich, Diss. 7262, VI-206 pp., 43 pl. (unpublished).
- BURCKHARDT D., 1983b - Beiträge zur Systematik und Faunistik der schweizerischen Psyllodea - *Entomologica basiliensia*, Basel, 8: 43-83, 42 figs.
- BURCKHARDT D., 1984a - Revision der Gattung *Rhinocola* Förster - *Mitt. entom. Ges. Basel*, N. F., 34: 115-120, 20 figs.
- BURCKHARDT D., 1984b - The Mediterranean species of *Diaphorina* Loew - *Phytophaga*, Palermo, 2: 1-29, 75 figs.

- BURCKHARDT D., 1986 (1985) - Taxonomy and host plant relationships of the *Trioza apicalis* Förster complex - *Ent. scand.*, Copenhagen, 16: 415-432, 64 figs.
- BURCKHARDT D. & LAUTERER P., 1982 - *Trioza laserpitii* n. sp., a new Central European Psyllid - *Reichenbachia*, Dresden, 20: 145-153, 25 figs, 2 photos.
- CERUTTI N., 1937 - Captures intéressantes d'Hémiptères du Valais - *Mitteil. schweiz. ent. Ges.*, Bern, 17 (1-2): 30-32.
- CERUTTI N., 1939 - Captures intéressantes d'Hémiptères du Valais (3^o liste) ed description d'espèces nouvelles - *Mitt. schweiz. ent. Ges.*, Bern, 17 (9): 443-449, 15 figs.
- CONCI C. & TAMANINI L., 1982 - *Psylla limbata*, nuova per l'Italia, da *Rhamnus alpinus* - *Atti Soc. ital. Sci. nat. Museo civ. St. nat. Milano*, 123: 483-494, 27 figs.
- CONCI C. & TAMANINI L., 1983a - *Craspedolepta carinthica* in Alto Adige, nuova per l'Italia, da *Artemisia* sp. - *Studi trent. Sci. nat., Acta biol.*, Trento, 60: 67-75, 15 figs.
- CONCI C. & TAMANINI L., 1983b - *Craspedolepta conspersa*, nuova per l'Italia, da *Artemisia vulgaris* - *Studi trent. Sci. nat., Acta biol.*, Trento, 60: 77-85, 16 figs.
- CONCI C. & TAMANINI L., 1984a - *Rhodochlanis salicorniae* Klim., nuovo per l'Italia, *R. hodkinsoni* n. sp., di Puglia, da *Suaeda vera*, e considerazioni sul genere - *Atti Soc. ital. Sci. nat. Museo civ. Stor. nat. Milano*, 125: 61-80, 37 figs.
- CONCI & TAMANINI L., 1984b - *Trioza (Trioza) rapisardai* n. sp., from Piemonte, host plant *Laserpitium siler* - *Atti Soc. ital. Sci. nat. Museo civ. Stor. nat. Milano*, 125: 201-208, 27 figs.
- CONCI & TAMANINI L., 1984c - Twenty-six species of *Psylloidea* new for Italy - *Atti Soc. ital. Sci. nat. Museo civ. Stor. nat. Milano*, 125: 255-270, 1 fig.
- COSTA A., 1863 - Nuovi studi sulla Entomologia della Calabria ulteriore - *Atti Accad. Sci. fis. mat. Napoli*, 1, n. 2: 1-80, 4 pl.
- FERRARINI E., 1986 (1984) - Considerazioni fitogeografiche sui castagneti dell'Appennino meridionale nei rapporti con l'Appennino settentrionale - *Biogeografia*, Bologna, 10: 185-206, 20 figs.
- GLOWACKA E. & HARISANOV A., 1983 - The Jumping Plant Lice from Western Rodope Mountains (Bulgaria) - *Acta biologica*, Katowice, 13: 62-70.
- GRAEFFE E., 1911 - Beiträge zur Fauna der «Hemipteren» des Küstenlandes - *Boll. Soc. adriatica Sci. nat.*, Trieste, 25: 291-309.
- HODKINSON I. D. & HOLLIS D. 1987 - The legume-feeding psyllids of the west Palaearctic Region - *Bull. Br. Mus. nat. Hist. (Ent.)*, London, 56 (1): 1-86, 294 figs.
- KLIMASZEWSKI S. M., 1983 - Revision of the Palaearctic species of the genus *Craspedolepta* Enderl., s. l. - *Polskie Pis. Ent.*, Wroclaw, 53: 3-29, 29 figs.
- KONOWALOWA Z. A., 1988 - Psyllinea - In: AA. vv., Catalog of the Insects of the Far East USSR, 2 - *Nauka*, Leningrad: 495-540, gr. figs. 395-424.
- KWON Y. J., 1983 - Psylloidea of Korea - *Insecta Koreana Series*, Seoul, Ser. II, 3: 1-181, 32 pl., 1 tab.
- LOEW F., 1886 - Neue Beiträge zur Kenntniss der Psylliden - *Verh. zool.-bot. Ges. Wien*, 36: 149-170, pl. VI.
- MARIANI G., 1907 - Contributo alla Cecidologia italiana - *Marcellia*, Avellino, 6: 62-67.
- MARIANI G., 1908 - Secondo contributo allo studio della cecidologia valdostana - *Atti Soc. ital. Sci. nat. Museo civ. Stor. nat. Milano*, 46: 289-323, 4 figs.
- RAPISARDA C., 1988 - Stato attuale delle conoscenze faunistiche e zoogeografiche sugli Psylloidei della Sicilia - *Atti XV Congresso naz. ital. Entomologia, L'Aquila*, Roma: 617-624.

- RAPISARDA C. & CONCI C., in press - Faunistic notes and zoogeographical considerations on the psyllid fauna of the South-Eastern Alps - *Atti XXVI Congresso Soc. ital. Biogeogr.*, Udine, *Biogeografia*, 11.
- REUTER O. M., 1875 - Heteropterorum novorum species aliquot - *Notiser Sällskapetets Fauna Flora Fennica Föhandlingar*, Helsingfors, 11: 328-333.
- SCHAEFER H. A., 1949 - Beiträge zur Kenntnis der Psylliden der Schweiz - *Mitt. Schweiz. ent. Ges.*, Lausanne, 22: 1-96, 40 figs.
- TAMANINI L., 1955 - Alcuni nuovi reperti di Psillidi italiani e francesi - *Boll. Soc. ent. ital.*, Genova, 85: 10-11.
- TAMANINI L., 1977 - Notizie corologiche e morfologiche su alcuni psillidi poco noti delle Prealpi - *Studi trent. Sci. nat.*, Trento, 54: 103-119, 28 figs.
- TUTIN T. G., & al. (ed.), 1968 - Flora Europaea - *Cambridge Univ. Press*, Cambridge, ecc., 2: 1-455, 5 maps.
- WAGNER W., 1947 - Neue deutsche Homopteren und Bemerkungen über schon bekannte Arten - *Verh. Ver. naturw. Heimatsforsch. Hamburg*, 29: 72-89, 72 figs.

RIASSUNTO - Specie rare o interessanti di *Psylloidea* italiani. I (Homoptera).

Sono trattate 12 specie: Xanioptera (Xanioptera) carinthica, Xanioptera (Loginovia) conspersa, Rhodochlanis hodkinsoni, Rhinocola fusca, Diaphorina chobauti, Livilla horvathi, L. radiata, L. vicina, L. vittipennella, Cacopsylla limbata, Trioza laserpitii e T. rapisardai. *Si riportano dati sulle recenti catture in Italia di queste specie e notizie su morfologia, piante nutrici primarie, biologia e distribuzione generale. Il lavoro è corredato da due foto d'ambiente, 4 carte geonemiche e 39 figure con dettagli morfologici di X. carinthica, X. conspersa, T. laserpitii e T. rapisardai.*

SUMMARY - Rare or interesting species of Italian *Psylloidea*. I (Homoptera).

Twelve species are examined: Xanioptera (Xanioptera) carinthica, Xanioptera (Loginovia) conspersa, Rhodochlanis hodkinsoni, Rhinocola fusca, Diaphorina chobauti, Livilla horvathi, L. radiata, L. vicina, L. vittipennella, Cacopsylla limbata, Trioza laserpitii and T. rapisardai. *Data on their recent findings in Italy, with notices on morphology, host plants, life history and general distribution are supplied. They are reported two chorological photos, 4 geonemic maps and 39 figures with morphological details of X. carinthica, X. conspersa, T. laserpitii and T. rapisardai.*

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