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SEVEN SPECIES OF *PSYLLOIDEA*
NEW FOR ITALY
(Homoptera)

Abstract - CESARE CONCI & LIVIO TAMANINI - Seven species of *Psylloidea* new for Italy (Homoptera).

According to the literature, about 146 species of *Psylloidea* were reported till 1984 for the Italian fauna. During 1985-88 other 24 species were added, which are listed in the present paper. Moreover, the AA add 7 species in the present work: *Arytaina torifrons*, *Livilla pyrenaea*, *Livilla retamae*, * *Cacopsylla rhamnicola*, * *Trioza megacerca*, * *Trioza munda*. The three taxa marked with * are new also for Southern Europe. Complete collecting data are reported by the AA for each of the mentioned 7 species, together with short information on their general distribution and sometimes morphological data. The species presently reported for Italy are about 177. The note has 30 figures.

Key words: *Psylloidea*, Italy.

Riassunto - CESARE CONCI & LIVIO TAMANINI - Sette specie di *Psylloidea* nuove per l'Italia (Homoptera).

Circa 146 specie di *Psylloidea* erano state riportate per l'Italia nella letteratura fino al 1984. Negli anni 1985-88 sono state aggiunte 24 specie, che vengono elencate. Nel presente lavoro sono riportate le seguenti 7 specie, nuove per l'Italia: *Arytaina torifrons*, *Livilla pyrenaea*, *Livilla retamae*, * *Cacopsylla myrtilli*, *Cacopsylla rhamnicola*, * *Trioza megacerca*, * *Trioza munda*. I tre taxa segnati con * sono nuovi anche per l'Europa meridionale. Per ogni specie sono riportate località, date e piante di raccolta, indicazioni sulla distribuzione generale e talora dati morfologici. Attualmente quindi sono note per l'Italia circa 177 specie di *Psylloidea*. Si riportano 30 figure.

Parole chiave: *Psylloidea*, Italy.

INTRODUCTION

CONCI & TAMANINI, 1983 ascribed about 146 species of *Psylloidea* in the Italian fauna. Afterwards, the following 24 species were added: *Strophingia hispanica*, *Acizzia acaciaebaileyanae*, *Psylla notata* (sub *vicina*) and *Trioza achilleae* (RAPISARDA, 1985), *Pseudaphorma astigma* (CONCI & TAMANINI, 1985), *Cacopsylla propinqua* (CONCI & TAMANINI, 1986a), *Trioza mesembrina* (BURCKHARDT, 1986), *Cacopsylla bidens* (BURCKHARDT & HODKINSON, 1986), *Bactericera calcarata* (CONCI & TAMANINI, 1986b), *Cyamophila probaskai* (CONCI & TAMANINI, 1986c), *Trioza saxifragae* (CONCI & TAMANINI, 1986d), *Arytainilla spartiicola* (CONCI & TAMANINI, 1986e), *Rhachistoneura varicicosta* and *Arytainilla hakani* (RAPISARDA, 1987), *Livilla bimaculata*, *L. magna* and *L. siciliensis* (HODKINSON & HOLLIS, 1987), *Arytainilla barbagalloi* and *A. incuba* (RAPISARDA 1988a), *Cacopsylla euxina* (RAPISARDA 1988b), *Heterotrioza sahlbergi* (CONCI & TAMANINI, 1988), *Bactericera parastriola* CONCI, OSSIANNILSSON & TAMANINI, 1988), *Bactericera bucegica* and *B. versicolor* (CONCI & TAMANINI in press).

Others 7 species are quoted in the present paper, so that the psyllids reported for Italy are now about 177. Moreover, additional new records are still in press by Rapisarda, while other species have been evidenced both in Rapisarda's collection and the our one, whose publication will follow a final check.

Among the 7 species here reported, *Cacopsylla myrtilli*, *Trioza megacerca* and *Trioza munda* are new for Southern Europe.

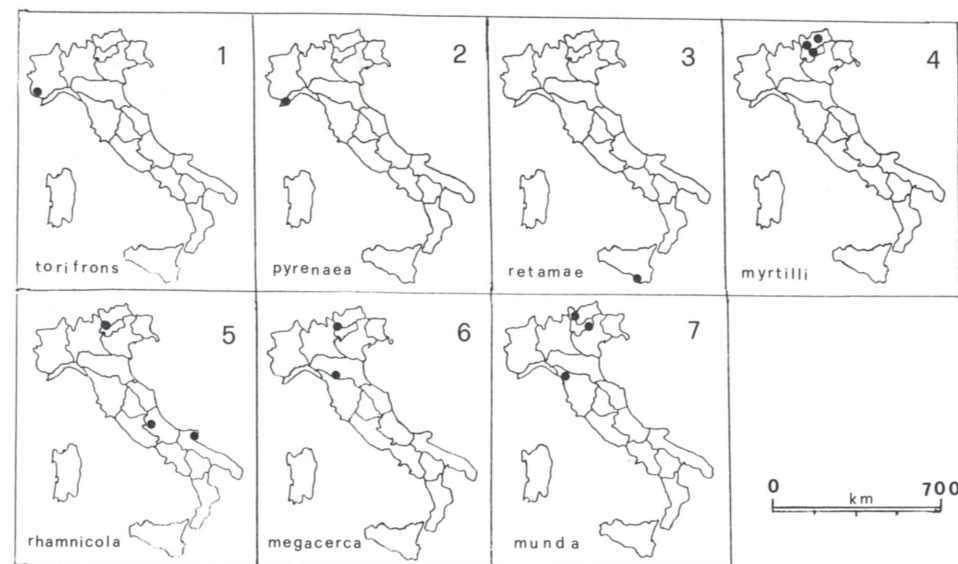


Fig. 1: orientative geographical maps of the presence in Italy of the 7 reported species.

OBSERVATION REGARDING THE LIST OF THE MATERIAL

They are the same ones reported by CONCI & TAMANINI (1984: 256, 258) and we refer to that work. As to localities, it is first indicated, in spaced letters, the name of the Region, followed by the name of the Province and the Commune; when useful, more specific or general locality names are added.

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

Records from Northern Italy are prevalent also in this material, due to topographical causes. Fortunately the recent researches by Rapisarda caused a conspicuous increase in our knowledge for Sicilia and Sardegna, till now very neglected (RAPISARDA, 1988b, RAPISARDA in press).

REPORTS ON THE SPECIES

Arytaina torifrons (Flor, 1861) (figs. 1, 2-14)

Piemonte, Province Cuneo, Commune Vinadio, locality Pianche, 950 m, one male, 29. VII. 1987, in meadow.

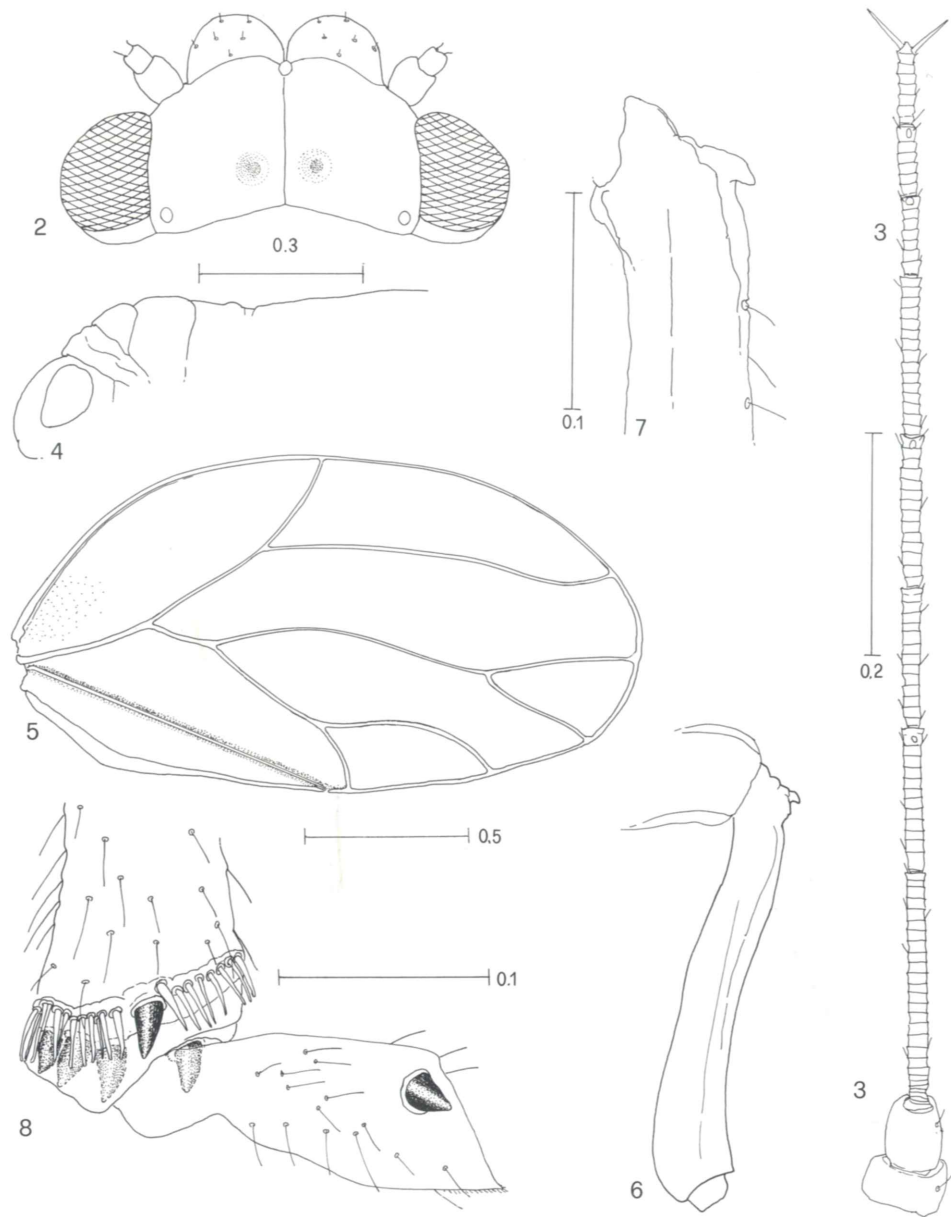
Host plant. According to the literature, the species was collected only on *Genista hispanica* L., plant not present in Italy.

General distribution. Known till now only from South-East France (Département Bouche du Rhône, Marseille (type locality) and Département Lozère, Gorge du Tarn) and Spain (with no locality data).

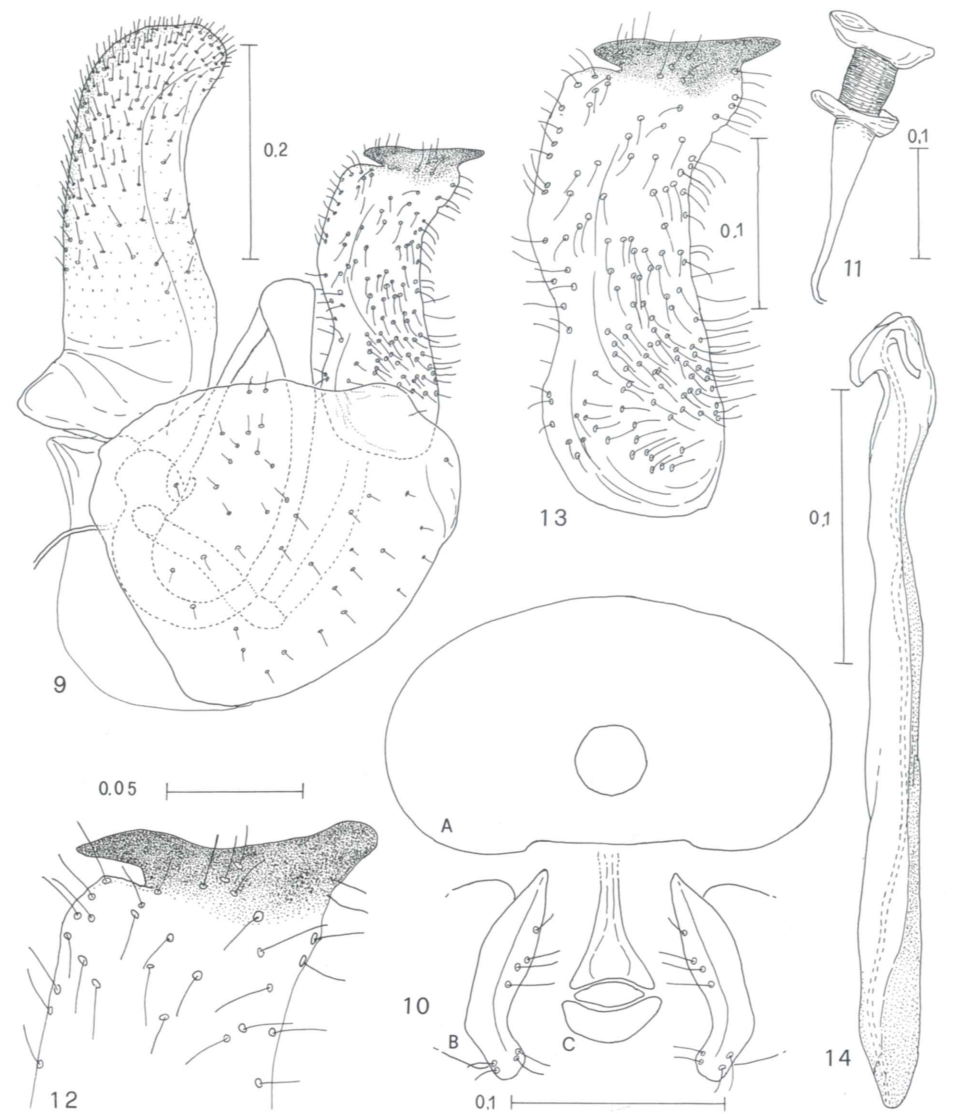
Observations. *A. torifrons* has been well redescribed by HODKINSON & WHITE (1979: 59-61, figs. 19-27) (as *Amblyrhina*) and HODKINSON & HOLLIS (1987: 18-19, figs. 57, 58, 78-80, 102). Our male specimen agrees with these descriptions, thus report only its dimensions, in mm: total length 2.3, head width 0.75, vertex width 0.51, genal cones length 0.12, antennal length 1.00, forewing length 1.93, forewing width 1.00, proctiger length 0.41, paramere length 0.28. Some figures of this specimen are given, too.

Livilla pyrenaea (Mink, 1859) (figs. 1, 15-17)

Liguria, Imperia, Pigna, Alpi Marittime, Colla Melosa, 1500 m, leg. N. Sanfilippo 9.X.86, 1 female; idem, leg. Conci 26.IX.88, 44 males, 44 females, 3 V



Figs. 2-8: *Arytaina torifrons*, male from Italy, Piemonte, Cuneo, Vinadio. - Fig. 2: head (from dry specimens). Fig. 3: antenna. - Fig. 4: outline of head and thorax, lateral (without indication of graphical scale). - Fig. 5: forewing (the punctuation shows the spinulae; the wing has a diffuse yellow-brown colour in the apical third). - Fig. 6: metatibia, lateral view. - Fig. 7: base of metatibia. - Fig. 8: apex of metatibia and first tarsal segment.



Figs. 9-14: *Arytaina torifrons*, male from Italy, Piemonte, Cuneo, Vinadio. - Fig. 9: terminalia, lateral. - Fig. 10: terminalia from above: A, proctiger; B, parameres; C, penis. - Fig. 11: sperm pump. - Fig. 12: apex of left paramere, lateral, outer surface. - Fig. 13: right paramere, lateral, inner surface. - Fig. 14: penis.

instar nymphs and 1 exuvia, on *Genista cinerea*; idem, leg. Conci 28.XII.88, 2 females on *Genista cinerea* and 1 female on *Juniperus communis*.

Host plants. *Livilla pyrenaea* is reported in the literature as collected on *Calicotome spinosa* (L.) Link (PUTON, 1871), *Genista pilosa* L. (HODKINSON & WHITE, 1979) and *Genista scorpius* (L.) DC (HORVATH, 1892). *Genista cinerea* (Vill.) DC is a new host plant.

Life history. *L. pyrenaea* probably has one generation per year in Italy, overwintering in the adult stage. We observed a similar life history for *Livilla vicina* in Trentino (NE Italy); on the contrary, the mediterranean *Livilla*-species usually overwinter in the egg stage.

General distribution. According to the literature, *Livilla pyrenaea* is reported in 8 localities of Southern France, in 7 Départements, distributed uniformly in a continuous zone from Alps to Central Pyrenees; the northernmost locality is Serres. The species is also reported in 3 localities of Northern and Central Spain. The altitudes of the findings are not reported in the literature. Our findings enlarge eastwards the distribution of the species.

Livilla retamae (Puton, 1878) (fig. 1)

Sicilia, Ragusa, Vittoria, Scoglitti, near sea level, leg. A. Carapezza 21.IV.81, 1 male, on *Retama raetam* ssp. *gussonei* (Webb) Heywood; idem, leg. A. Carapezza 22.V.83, 4 females, on the same plant.

Host plants. *L. retamae* is oligophagous on plant species of the genus *Retama* (*monosperma* (L.) Boiss, *raetam* (Forsskal) Webb & Berth. and *sphaerocarpa* (L.) Boiss).

General distribution. Widespread on the coasts of the Southern Mediterranean Basin: Portugal, Spain, Morocco, Algeria, Sicilia, Egypt and Israel.

Cacopsylla (Hepatopsylla) myrtilli (Wagner, 1947) (figs. 1, 18-19)

Alto-Adige-Südtirol, Bolzano-Bozen, Bressanone-Brixen, Plose, Kreuztal, 1950 m, 24.VIII.85, 18 females; Ultimo-Ulten, Valle Pracupola-Schmiedhofer B., 1200 m, 23.VII.87, 2 nymphs; Nova Levante-Welschnofen, Bosco di Carezza-Karerersee, 1600 m, 9.VIII.86, 3 females; Nova Ponente-Deutschnofen, Pietralba-Maria-Weissenstein, 1500 m, 15.VIII.72, 19 females; Salorno-Salurn, Cauria-Gfrill, 1450 m, 14.VIII.86, 2 females; id., Lago Bianco-Weisse, 1670 m, 14.VIII.86, 4 females.

Trentino, Trento, Vigo di Fassa, Passo di Costalunga, 1730 m, 9.VIII.86, 1 female; Capriana, Lago Nero, 1700-1750 m, 14.VIII.86, 32 females.

On the whole, we collected *C. myrtilli* in two regions of NE Italy, in 8 localities, with 8 findings, between 1200 and 1950 m, in July (nymphs) and in



Fig. 15: biotope of *Livilla pyrenaea* on *Genista cinerea*, Liguria, Imperia, Colla Melosa, 1500 m. *Genista cinerea* is dominant in the stony and rocky slope, with few beech trees.



Fig. 16: shrubs of *Genista cinerea*, host plant of *Livilla pyrenaea*, on the Colla Melosa, September 1988.

August (adults), with 79 females and 2 nymphs, all on *Vaccinium myrtillus*.

General distribution. North Europe, Central Europe on mountains, East Europe, Siberia and China. The spp. *alaskensis* Hodk. lives in Canada and Alaska. Our findings enlarge the European geographical distribution of the species to the Southern slope of the Alps.

Observations. *C. myrtilli* is the only parthenogenetic European psyllid. The species is very similar to *C. rhododendri* (Puton), from *Rhododendron* spp., and to *C. ledi* (Flor) from *Ledum palustre*. We report two figures of its egg, till now undescribed, which has a large stalk and a long micropyle; it is 0.39 mm long and 0.19-0.21 mm wide. These eggs, extracted from a female collected in Pietralba the 15.VIII.72, confirm that *C. myrtilli* overwinters in the egg stage.

We reports also two figures (figs. 20-21) of the egg of *C. rhododendri*, showing a different shape; the egg of *C. rhododendri* is 0.38-0.43 mm long and 0.16-0.21 mm wide.

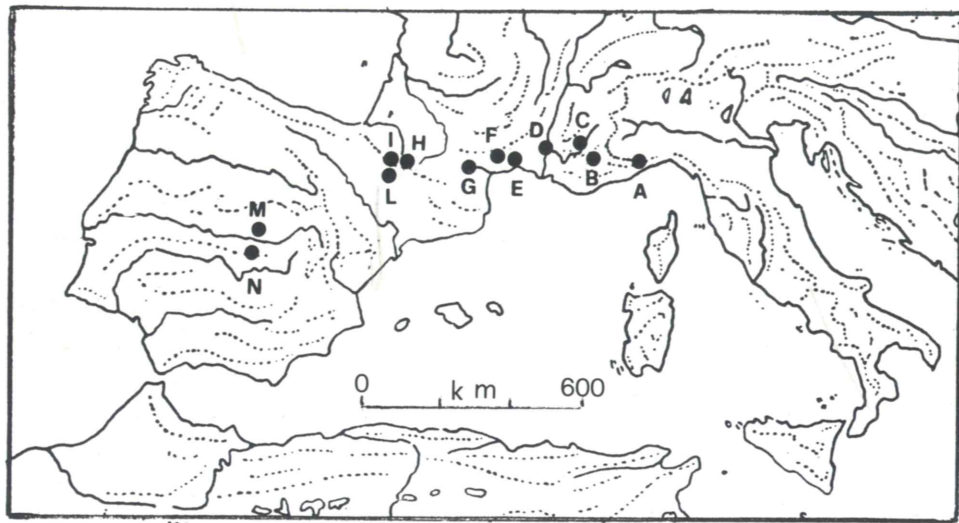
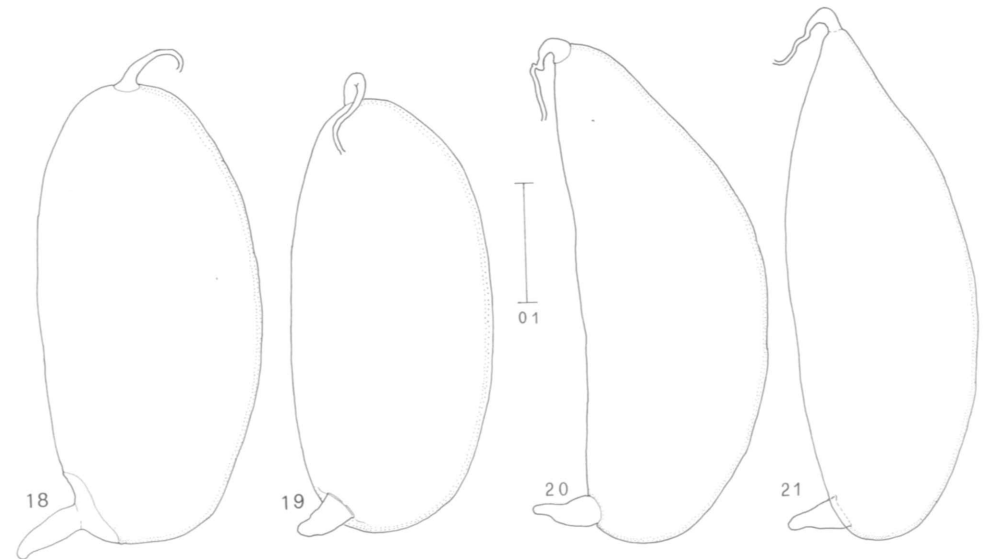


Fig. 17: *Livilla pyrenaica*, general distribution. - A) Italy, Liguria, Imperia, Colla Melosa; B) France, Département Basses Alpes, Digne (HODKINSON & WHITE 1979); C) France, Dép. Isère, Serres (VONDRAČEK 1951); D) France, Dép. Vaucluse, Avignon (LOEW 1879); E) France, Dép. Hérault, Montpellier, Mireval (HORVATH 1892); F) France, Dép. Hérault, Bédarieux (PUTON 1871); G) France, Dép. Aude, Cabrespine (HODKINSON & WHITE 1979); H) France, Dep. Ariège, Foix, Mas d'Axil (LOEW 1879); I) France, Dép. Haute Garonne, Bagnères de Luchon, type locality (MINK 1859); L) Spain, Aragona, Huesca, Barluenga (HODKINSON & WHITE 1979); M) Spain, Madrid (RAMIREZ GOMEZ 1959); N) Spain, Toledo (RAMIREZ GOMEZ 1959). Bibliographical reports in HODKINSON & HOLLIS 1987.



Figs. 18-19: eggs of *Cacopsylla myrtilli*, Alto Adige.
Figs. 20-21: eggs of *Cacopsylla rhododendri*, Alto Adige.

Cacopsylla (Thamnopsylla) rhamnicola (Scott, 1876) (figs. 1, 22-30)

Trentino, Trento, Ruffré, M. Penegal, 1700 m, leg. C. Rapisarda 31.VIII.85, 2 males, 1 female, on *Picea excelsa*.

Abruzzo, L'Aquila, L'Aquila, Campo Imperatore, 1500 m, 17.VI.88, 1 female on *Rhamnus alpinus*; idem, L'Aquila, road Assergi-Passo delle Capannelle, S. Pietro, 1000 m, 18.VI.88, many nymphs on *Rhamnus catharticus*; we obtained adults (46 males and 32 females) after breeding from these nymphs.

Puglia, Foggia, route n. 272 between Manfredonia and Monte Sant'Angelo, 400-500 m, 15-16.V.86, 15 males, 30 females, some nymphs, on *Rhamnus saxatilis*.

On the whole, *C. rhamnicola* was collected four times, in three Regions of North, Central and South Italy, where it appears very localized. We found this species between 400 and 1700 m, in May and June with nymphs, and at the end of August already overwintering on conifers, with more than 120 adults and many nymphs.

Host plant. *Rhamnus saxatilis* Jacq. is a new host plant: of such species, since only *Rhamnus catharticus* L. was reported up to now. We are not able to affirm if *Rhamnus alpinus* L. is a host or a shelter plant, because we found on it only one female.

Morphology. We report 9 drawings from specimens collected on *Rhamnus saxatilis* in Puglia, which agree with the figures of the literature. Only the apex of the male parameres is more rounded, for a little different position of the drawings.

General distribution. From Great Britain, Scandinavia and Spain, through Central and Eastern Europe, Caucasus and Central Asia, to Mongolia, but rare and sporadic, with only few reports.

Trioza megacerca Burckhardt, 1983 (fig. 1)

Trentino, Trento, Ruffré, M. Penegal, 1700 m, 25.IX.85, 22 males, 18 females, on *Juniperus communis*.

Emilia-Romagna, Parma, Corniglio, Passo del Cirone, 1200 m, leg. Conci and Sanfilippo 30.X.87, 20 males, 32 females, on *Juniperus communis*.

On the whole, *T. megacerca* was collected by us in two Regions and localities of North and Central Italy, with two findings, at 1200 and 1700 m, in September and October, with 42 males and 50 females, on *Juniperus communis*.

We do not report some others findings of females only, possibly belonging to this species, for the difficulties in a sure determination of the females.

General distribution. *T. megacerca* was reported till now only for two localities of Yugoslavia (Croatia) and one of Switzerland (Graubünden), always on *Juniperus communis*.

Observations. BURCKHARDT 1983 revised the *Trioza* of *dispar*-group. The species *dispar*, *proxima* and *tatrensis* are enough common in North Italy, especially on mountains. *T. megacerca* is more scarce and its host plant is unknown.

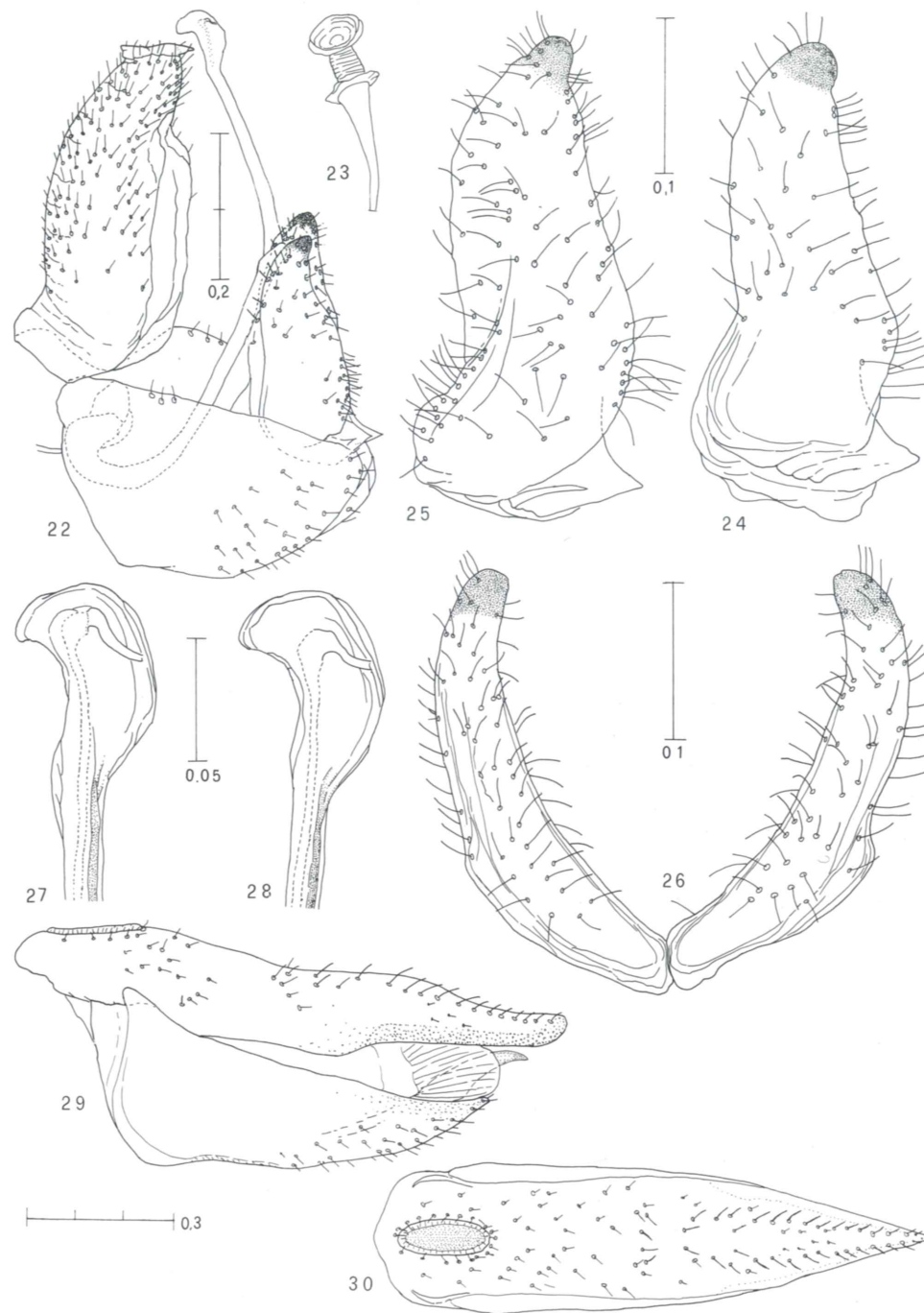
Trioza munda Foerster, 1848 (fig. 1)

Alto Adige, Bolzano-Bozen, Laces-Latsch, Val Venosta-Vinschgau, San Martino al Monte-St. Martin am Vorberg, 1500 m, 15.VIII.67, 1 male, 1 female, on *Juniperus communis*.

Trentino, Trento, Moena, Passo San Pellegrino, 1950 m, 28.VIII.54, 3 males, on *Juniperus communis*.

Toscana, Massa Carrara, Carrara, Campo Cecina, Rifugi Belvedere e Carrara, 1250 m, leg. Conci and Sanfilippo, 17.X.86, 8 males, 13 females, on *Picea excelsa*.

On the whole, *T. munda* was collected by us in 3 Regions and 3 localities of NE and Central Italy, where this species appears to be very localized, with only 3 findings, between 1250 and 1950 m, in August and September, with 12 males and 14 females, on conifers.



Figs. 22-30: *Cacopsylla rhamnocola*, specimens from Puglia, Gargano, host plant *Rhamnus saxatilis*. - Fig. 22: male terminalia. - Fig. 23: sperm pump. - Fig. 24: left paramere, outer surface. - Fig. 25: right paramere, inner surface. - Fig. 26: parameres, posterior view. - Figs. 27-28: penis, from two specimens. - Fig. 29: female proctiger, dorsal view. - Fig. 30: female terminalia, lateral view.

Host plants. Accordings to the literature, *T. munda* lives on plants of the family Dipsacaceae and was reported from *Knauthia drymeia* Heuffl. (= *sylvatica*), *K. longifolia* (W. & K.) Koch, *Scabiosa lucida* Vill. and *Succisa pratensis* Moench; it overwinters on conifers.

General distribution. From Great Britain and Southern Scandinavia, through Central and Eastern Europe, to Caucasus and Mongolia. The report from Japan should be referred to another species.

Observations. SULC (1911: 26) reports the finding of one specimen of *T. munda* in Messina (Sicilia, leg. Heyden). Nobody in the bibliography subsequently reports this notice, which we consider doubtful and perhaps caused by an erroneous label, since it does not result to us that Heyden ever travelled in Sicily.

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