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NEW DATA ON THE SICILIAN PSYLLIDS (Homoptera Psylloidea) (**)

ABSTRACT - RAPISARDA C., 1998 - New data on the Sicilian Psyllids (*Homoptera Psylloidea*).

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In addition to the description of the fifth instar nymph of *Psyllopsis meliphila*, living on *Fraxinus ornus* and already known in Sicily from about ten years, information is reported on three psyllid species (*Arytaina genistae*, *Asphagidella buxi* and *Ctenarytaina eucalypti*) new for the Sicilian fauna and for the whole territory of Central, South and insular Italy. At moment, the Sicilian psyllid fauna, which includes an amount of 71 species, is the richest one among the peninsular and insular Italian regions.

KEY WORDS - Psyllids, Sicilian fauna, New records.

RIASSUNTO - RAPISARDA C., 1998 - Note aggiuntive sugli Psilloidei siciliani (*Homoptera Psylloidea*).

Nel presente lavoro, oltre alla descrizione della ninfa di ultima età di *Psyllopsis meliphila*, vivente su *Fraxinus ornus* e già nota da oltre un decennio in Sicilia, si riportano notizie su tre specie di Psilloidei (*Arytaina genistae*, *Asphagidella buxi* e *Ctenarytaina eucalypti*), nuove per la Sicilia e per l'intero territorio dell'Italia centro-meridionale e insulare. A seguito dei dati qui riportati, la Sicilia, la cui psillidofauna comprende allo stato attuale un totale di 71 specie, si colloca al primo posto fra le Regioni peninsulari e insulari italiane.

PAROLE CHIAVE - Psillidi, Fauna siciliana, Nuove segnalazioni.

(*) I submit this note with great pleasure, for being published in the volume dedicated to Livio Tamanini, whose enthusiastic and indefatigable work has opened the way to all recent Italian studies on psyllids.

(**) Work presented by the Academician Prof. Cesare Conci.

During the last years, the psyllid fauna of Sicily and related isles has been deeply investigated and a total amount of 68 species has been recorded there (CONCI & RAPISARDA, 1995; CONCI *et al.*, 1996). Further researches recently allowed to detect three more species in this territory, of which one was known up to now in Italy only from a restricted area of Western Liguria. Through these new findings, the Sicilian psyllid fauna presently includes 71 species and is the richest one among the peninsular and insular Italian regions, being it only poorer than those ones of the regions which lie strictly close to the Alpine Arc. In addition to the Sicilian collecting data of these three species and brief notes on their biology and geographical distribution, in the following pages the fifth instar nymph is described of a species living on Manna-Ash and already known from Sicily.

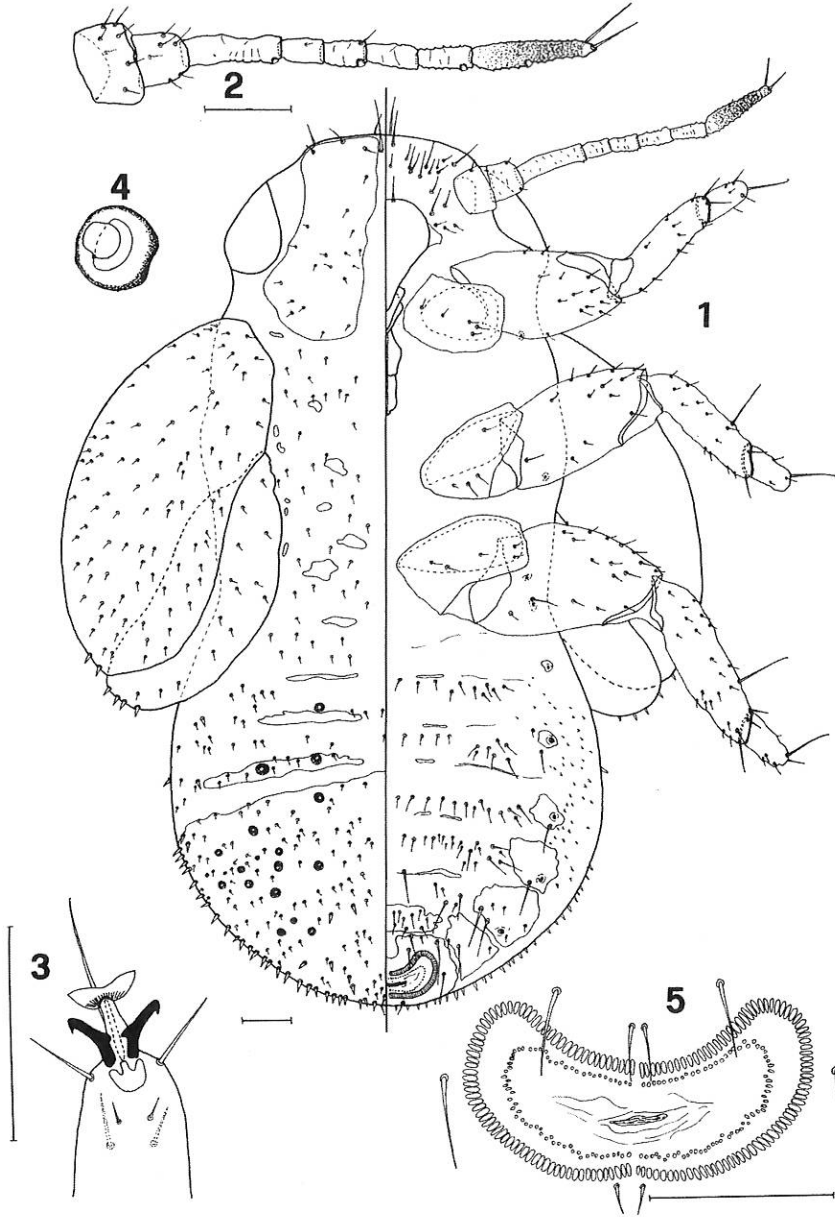
Psyllopsis meliphila Löw, 1884

Diffused in Central and South Europe and in North Africa (Maghreb), this psyllid has been recorded from Austria, Bulgaria, ex Czechoslovakia, Hungary, Italy, Morocco and ex Yugoslavia (GRÄFFE, 1911; VONDRACEK, 1951; KLIMASZEWSKI, 1962; LOGINOVA, 1972; BURCKHARDT, 1983). In Sicily, where its occurrence has been reported about ten years ago (RAPISARDA, 1988), this species has been only detected in hilly areas of the slopes of Mount Etna.

Detailed morphological information on its adults is given in various recent papers (KLIMASZEWSKI, 1962; BURCKHARDT, 1983), in addition to the original description. On the contrary, nothing is known up to now from the literature on its nymphal stages; thus, the final instar nymph is described below.

Final instar nymph (figs 1-5). Almost uniformly greenish-yellow in colour, it is covered by waxy filaments produced by special dorsal glands, which are particularly abundant near to the caudal sclerite. Antennae pale coloured, except the last joint (or only its apical part), which is brownish. Mouth parts clear. Thoracic and abdominal sclerites scarcely pigmented, both on the dorsum and in the venter. Legs pale coloured.

Total body length 1.40-1.88 mm; breadth 1.03-1.27 mm. Body breadth: body length ratio (BBBL): 0.64-0.72. Dorsal surface covered only by simple setae, except in the extreme posterior part of the abdomen, where some lanceolate setae occur. Antennae eight segmented (fig. 2), 0.58-0.70 mm long and ventrally inserted on the head, each one bearing 4 rhinaria, dorsally or dorso-laterally located respectively at



Figs 1-5 - *Psyllopsis meliphila* Löw, final instar nymph: 1, general morphology of the body, in dorsal (left) and ventral (right) view; 2, antenna; 3, leg apex, with praetarsus; 4, subspherical shovel shaped structure of the caudal plate; 5, anal pore and circumanal pore rings.

the apex of antennal joints 3rd, 5th and 7th and at the median third of the 8th; additional secondary rhinaria also occur: one at the base of the 3rd joint, on the ventral surface, one at the median third of the 8th joint, in ventral position as well and on the projection of the mentioned main rhinarium, two at the distal third of the same joint, each one close to one of the two long apical setae. The latter one are inserted respectively on the ventral (the apical one) and on the dorsal (the subapical one) face of the joint. Rostrum with the two apical joints 150-180 μm long altogether. Dorsal thoracic sclerites, including also the lateral and longitudinal ones of meso- and metathorax, all reduced and fragmented. Forewing pads 0.50-0.75 mm long, having almost parallel outer and inner margins, which are both slightly concave to the body axis; they are dorsally covered by numerous small simple setae, moreover various similar setae are inserted along the outer margin, where 1-4 (more frequently only one, in an apical position) lanceolate setae also occur. Hindwing pads each one with 2-5 (more frequently 3-4) lanceolate setae inserted at the distal margin. Antennal length: forewing pad length ratio (AWL): 0.87-1.13. Legs without remarkable characters. On each meso- and metatibia a long simple seta may be evidenced, inserted on the outer face at the distal apex of the «true» tibia (i.e. close to the crown of setae separating the «true» first tarsal joint). Praetarsus (fig. 3) with goblet shaped and strongly petiolate arolium. Abdomen margin with numerous lanceolate setae. Dorsal caudal sclerite 0.37-0.52 mm long and 0.67-0.87 mm wide, on which various small lanceolate setae (increasingly longer towards the posterior part of the abdomen) are inserted and which numerous subspherical shovel shaped structures (fig. 5) are scattered on. Caudal plate width: caudal plate length ratio (CPR): 1.59-1.78. Main ventral lateral sclerites regularly developed, distinctly separated and each one bearing a respiratory pore. Submedian ventral sclerites scarcely developed. Anal sclerite fragmented in four parts: the largest one (bearing the anal pore) is located medially and posteriorly; a second fragment, anterior to the previous one, is transversely elongated and densely covered by small setae; the last two are very small, almost rectangular in shape, each one located at the side of the first fragment. Circum-anal rings (fig. 5) both without remarkable characters, each one bearing a simple row of pores; the outer one, which is 155-200 μm wide, is made by 75-95 pores per each side and shows a deep anterior concavity.

Respiratory system with nine pairs of pores: three in the thorax and six in the abdomen.

Taxonomic notes. Within the Italian species of the genus *Psyllopsis* (CONCI & TAMANINI, 1990; CONCI *et al.*, 1993; CONCI & RAPISARDA, 1995), the nymphs of *P. meliphila* are very similar to those ones of *P. fraxinicola*, proving the close relation between the two species. They may be morphologically discerned by the different number of lanceolate setae in the forewing pad margin (10-16, inserted along nearly the whole margin, in *P. fraxinicola*; only 1 at the apex, sometimes with 1-3 additional ones inserted in the remaining part of the margin, in *P. meliphila*), the antennal colour (nearly entirely greenish-yellow in both species, with a brown area extended to the 7th and 8th joint in *P. fraxinicola* but only to the 8th joint in *P. meliphila*), the long simple seta inserted at the outer face of each meso- and metatibia (occurring only in *P. meliphila*), the subspherical shovel shaped structures of the caudal plate (which tend to be smaller and more numerous in *P. fraxinicola*). The nymphs of the remaining two Italian species (*P. discrepans* and *P. fraxini*) distinctly differ from those ones of the complex *fraxinicola-meliphila* for the outer circumanal ring, which is made up by a single row of pores in the latter two species but by two or three pores (at least in its greatest part) in the other ones (i.e. *P. discrepans* and *P. fraxini*).

P. meliphila is monophagous on *Fraxinus ornus* L.. On this plant, the nymphs of the psyllid may be evidenced on the leaves underface for the waxy filaments they abundantly produce on the dorsum, up to completely cover their body. In Sicily, this species shows one yearly generation, overwintering as egg; the adults start to fly in late May, till the first decade of July. The cycle is almost delayed in North Italy and adults may be detected on the host plant up to late August.

Arytaina genistae Förster, 1848

Sicilian findings. On *Cytisus scoparius* (L.) Link - San Piero Patti (Messina), 10.VII.1997 (1 male, 1 female).

Although it is widely diffused in the Italian territory (CONCI *et al.*, 1993), the only literary Sicilian record of this psyllid (RAGUSA, 1907) has been considered as doubtful up to now (RAPISARDA, 1988), because it may potentially refers to a similar species (*Arytaina africana* Heslop-Harrison) which is very common in the fauna of the Island. Now, the recent finding in the Province of Messina allows to definitively include *A. genistae* among the Sicilian psyllids.

Detailed morphological notes on its adults are given by DOBREANU & MANOLACHE (1962), HODKINSON & WHITE (1979), HODKINSON &

HOLLIS (1987); its final instar nymph is adequately described by WHITE & HODKINSON (1982).

Occurring nearly throughout Europe and also introduced in North America, *A. genistae* is strictly oligophagous on plants of the genus *Cytisus*, with a marked feeding preference for *C. scoparius*; in Italy it has been exclusively collected on the latter plant. As to the Sicilian distribution, *A. genistae* appears in this Region as being sensibly rarer than the similar *A. africana*.

Asphagidella buxi (L., 1758)

Sicilian findings. On *Buxus sempervirens* L. - Randazzo (Catania), loc. Flascio, 12.V.1995 (9 nymphs); Linguaglossa (Catania), 10.VII.1997 (10 females); Ragusa, Giardino Ibleo, 21.V.1998 (27 males, 32 females, 13 nymphs).

This species has been recently recorded in Sicily (RAPISARDA *et al.*, 1996) on the base of some nymphs collected on box plantings bred in nurseries. Its following consistent findings in various urban gardens and parks indicate that a relevant diffusion of the psyllid has occurred in Sicily, at least in the eastern part of the Island.

A. buxi shows a wide distribution in the euro-mediterranean region; it has been also introduced in North America and the Hawaii. In Italy, its presence has been recorded up to very recent times only from the central and northern regions (CONCI *et al.*, 1993), being this species completely unknown from South Italy, Sicily and Sardinia.

Strictly oligophagous on Buxaceae of the genus *Buxus*, this psyllid may be frequently collected on both wild and cultivated *Buxus sempervirens*, causing to these plants remarkable leaf deformations, which have been widely described also in the recent Italian literature (SAMPÒ, 1975; PELLIZZARI SCALTRITI, 1988).

Morphological information on its adults is given by DOBREANU & MANOLACHE (1962), KLIMASZEWSKI (1963), HODKINSON & WHITE (1979); the final instar nymph is described by WHITE & HODKINSON (1982).

Ctenarytaina eucalypti (Maskell, 1890)

Sicilian findings. On *Eucalyptus* sp. - Catania, Boschetto della Plaja, 20.V.1998 (4 males, 8 females, 1 nymph).

Native from Australian region, this psyllid has been widely spread around the World with its Myrtaceae host plants. Thus, in addition to Australia, Tasmania, New Zealand and Papua New Guinea, it is re-

corded up to now also from South Africa, Great Britain, France, Portugal, Spain and Italy. In Europe, the occurrence of *C. eucalypti* is known from the beginning of the present century, when it has been recorded for Great Britain (FOX WILSON, 1924; LAL, 1937) and France (MERCIER & POISSON, 1926). In Italy, it was known up to now only from the Western Ligurian Riviera (CAVALCASELLE, 1982), thus being new for the Sicilian fauna.

A morphological description of its adults is given by HODKINSON & WHITE (1979). ALMA & ARZONE (1988) report a detailed description of all preimaginal stages of this psyllid.

Strictly oligophagous on plants of the genus *Eucalyptus*, *C. eucalypti* shows in Italy an almost continuous life-cycle, performing 6-8 yearly generations (ALMA & ARZONE, 1988). It tends to live on the young sprouts of its host plants and, in case of strong infestations, it may be seriously noxious, for the strong deformations it may cause to the leaves; moreover, abundant honeydew and sooty moulds may cover the plants seriously attacked by this psyllid. Infestations by *C. eucalypti* are particularly noxious to *Eucalyptus* plants cultivated for cutting production: in France, losses higher than 20% have been estimated in 1995-96 (BERTAUX *et al.*, 1996). Thus, the direct control of this psyllid needs to be applied in areas where this kind of production is diffused.

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