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CONTRIBUTION TO THE KNOWLEDGE OF THE PSOCOPTERA FAUNA OF ITALY

RIASSUNTO: Nel presente lavoro sono riportati i dati relativi alle specie di Psocotteri presenti nelle collezioni del Museo di Scienze Naturali di Bergamo. Gli esemplari appartengono a 43 specie rispetto ad un totale di 80 conosciute per l'Italia. Vengono inoltre riportati i dati salienti relativi ad alcune specie rare o poco conosciute.

SUMMARY: Data about psocids species kept in collections of Museo Civico di Scienze Naturali di Bergamo are here reported. The number of these species is 43 (half of the number of species known in Italy). Comments on some very rare or little known species are also included.

INTRODUCTION: Until the publication of Ribaga (1900) on the Italian psocids, little is known about these insects group in Italy. Some papers have been, occasionally, published describing new Italian species (Lienhard, 1980, 1983) or studying local faunas (Schneider & Dessart, 1981, 1983; Günther, 1989). In some cases, faunistic records of Italian Psocoptera can be found in more comprehensive taxonomic papers (Lienhard, 1985, 1986, 1990a). In this paper we present the results obtained from the examination of more than 900 individuals belonging to the collections of Museo Civico di Scienze Naturali "E. Caffi" from Bergamo. The material has been collected by Dr. Marco Valle and his collaborators, by Dr. D. Benfatto from Istituto Sperimentale per l'Agrumicoltura, Acireale, CT (the specimens from Istituto Sperimentale per l'Agrumicoltura have been collected as part of the Ministry of Agriculture and Forestry's finalized project "biological and integrated control for agricultural and forestal culture protection") and by myself.

Family Liposcelididae

Liposcelis bostrychophyla Badonnel, 1931

Ferriere (PC), 2♀♀, 8.XI.1967; Venezia, Molamocco, 4♀♀, 8.II.1970; Oggebio (NO), 55♀♀, 7.VII.1981.

Liposcelis decolor (Pearman, 1925)

Olbia (SS), 1♀, 25.II.1966; Monti Madonie (PA), 2♀♀, 1.VI.1963; Valbondione (BG), 6♀♀, 3 nymphs, 5.II.1964; Olbia (SS), Is. Tavolara, 3♂♂, 1♀, 13.VI.1967; Borgo di Taro (PR), 1♂, 29.XI.1950; Monte Etna (CT), 1♂, 30.V.1963; Is. d'Elba (LI), Porto Azzurro, 1♀, 9.I.1963.

Liposcelis pearmani Lienhard, 1990

Chignolo d'Isola (BG), 1♀, 9.XI.1980 in *Talpa europaea* nest.

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Liposcelis rufa Broadhead, 1950

Is. d'Elba (LI), Monte Calamita, 1♂, 4.I.1963.

Family Trogidae

Cerobasis guestfalica (Kolbe, 1882)

Tirrenia (PI), 3♀♀, 3 nymphs, 6.IX.1991 on *Quercus ilex*; Reggio di Calabria (RC) San Gregorio, 46♀♀, 9.IV.1991 on *Citrus sinensis*; Lentini (SR) Palazzelli, 4♀♀, 1 nymph, 3.VII.1991 on *Citrus deliciosa*.

Lepinotus patruelis Pearman, 1931

Piario (BG), 1♂, 5 nymphs, 24.IX.1992

Lepinotus reticulatus Enderlein, 1905

Monti Madonie (PA), Rif. Marini, 2♀♀, 1.VI.1963; Solagna (VI), Ponte San Lorenzo, 1♀, 9.III.1963; Olbia (SS), Tavolara, 2♀♀, 4.IX.1965; 3♀♀, 3.XI.1965; 2♀♀, 13.VI.1967; 1♀, 27.II.1966; Corte Brugnatella (PC), 4♀♀, 8.IX.1967; Marghera (VE), 4♀♀, 29.I.1970; Parma, 1♀, XI.1950; Bergamo (S.Agostino), 1♀, 9.XI.1967; Monteriggioni (SI), 1♀, 9.IX.1991 on *Quercus pubescens*.

Family Psyllipsocidae

Doryteryx pallida Aaron, 1884

Is d'Elba (LI), Monte Calamita, 1♂, 4.I.1963.

Family Stenopsocidae

Graphopsocus cruciatus (Linnaeus, 1768)

Monteriggioni (SI), 1♂, 9.IX.1991 on *Quercus pubescens*; Reggio di Calabria (RC) San Gregorio on *Citrus sinensis*, 1♂, 11♀♀, 9.IV.1991; S.Eufemia d'Aspromonte (RC) bivio per Delianuova, 2♀♀, 31.V.1991.

Stenopsocus immaculatus (Stephens, 1836)

Castelnuovo di Garfagnana (LU), 2♀♀, 12.IX.1991 on *Corylus avellana*; Giardinetto (PT), 1♂, 2♀♀, 5.IX.1991 on *Carpinus* sp.; Siena, 1♂, 9.IX.1991 on *Quercus pubescens*; Tirrenia (PI), 1♀, 6.IX.1991 on *Quercus ilex*; Abetone (PT), 4♀♀, 5.IX.1991 on *Fagus sylvatica*; Albaredo per S.Marco (SO), 1♂, 12.IX.1993.

Stenopsocus stigmaticus (Imhoff et Labram, 1845)

Castelnuovo di Garfagnana (LU), 1♂, 6♀♀, 12.IX.1991 on *Corylus avellana*.

Family Caeciliidae

Caecilius burmeisteri Brauer, 1876

Abetone (PT), 2♀♀, 5.IX.1991 on *Fagus sylvatica*.

Caecilius dahli Badonnel, 1963

Castelsantangelo sul Nera (MC), 1♀, VI/XII.1991.

Caecilius flavidus (Stephens, 1836)

Castelnuovo di Garfagnana (LU), 1♀, 12.IX.1991 on *Corylus avellana*.

Caecilius fuscopterus (Latreille, 1799)

Castelnuovo di Garfagnana (LU), 1♂, 12.IX.1991 on *Corylus avellana*; Valtorta (BG), 2♀♀, 19.IX.1993.

Caecilius rhenanus Tetens, 1891

Lentini (SR) Palazzelli, 3♂♂, 1♀, 3.VII.1991; 1♀, 11.IV.1991 on *Citrus deliciosa*; Siracusa (SR) Fonte Ciane, 1♂, 5.VII.1991; 1♀, 7.XI.1991 on *Citrus limon*.

Family Philotarsidae

Aaroniella badonneli (Danks, 1950)

Castelnuovo di Garfagnana (LU), 1♀, 12.IX.1991 on *Corylus avellana*.

Family Trichopsocidae

Trichopsocus dalii (McLachlan, 1867)

Tirrenia (PI), 1♂, 3♀♀, 6.IX.1991 on *Quercus ilex*; Reggio di Calabria (RC) San Gregorio, 1♂, 5♀♀, 5.III.1992; 44♂♂, 136♀♀, 75 nymphs, 9.IV.1991 on *Citrus sinensis*; Lentini (SR) Palazzelli, 1♂, 11.IV.1991; 5♂♂, 1♀, 4 nymphs, 3.VII.1991; 1♂, 8.VIII.1991; 2♀♀, 3.X.1991 on *Citrus deliciosa*; Siracusa (SR) Fonte Ciane, 1♀, 9.VIII.1991; 3♂♂, 2♀♀, 1 nymph, 10.X.1991; 1 nymph, 7.XI.1991 on *Citrus limon*.

Trichopsocus acuminatus Badonnel, 1943

Reggio di Calabria (RC) San Gregorio, 2♂♂, 8♀♀, 9.IV.1991 on *Citrus sinensis*.

Family Mesopsocidae

Mesopsocus fuscifrons Meinander, 1966

Arni (LU), 1♀, 12.IX.1991 on *Castanea sativa*.

Family Elipsocidae

Elipsocus annulatus Roesler, 1954

Abetone (PT), 1♀, 5.IX.1991 on *Fagus sylvatica*.

Elipsocus westwoodi McLachlan, 1867

Gorno (BG), 1♂, 1♀, 18.VI.1982.

Elipsocus moebiusi Tetens, 1891

Valbondione (BG), 1♀, 11.VII.1991.

Elipsocus hyalinus (Stephens, 1836)

Isola di Capraia (LI) sopra il paese, 1♀, 24.VI.1993

Cuneopalpus cyanops (Rostock, 1876)

Isola di Capraia (LI) sopra il paese, 5♂♂, 24.VI.1993

Reuterella helvimacula (Enderlein, 1901)

Isola di Capraia (LI) sopra il paese, 3♂♂, 24.VI.1993

Family Epipsocidae

Epipsocus lucifugus (Rambur, 1842)

Gorno (BG), 1♀, 1 nymph, 18.VIII.1982; Sigillo (PG), 1♀, 1 nymph, VI/XII.1991; Fiuminata (MC), 1 nymph, VI/XII.1991; Tornolo (PR) m 800 Tarsogno, 2♀♀, IV/VIII.1991; Isola di Capraia (LI) i Pollai, 3♀♀, IV/VI.1993

Family Peripsocidae

Peripsocus alboguttatus (Dalman, 1823)

Monterrigioni (SI), 2♀♀, 9.IX.1991 on *Quercus pubescens*.

Peripsocus phaeopterus (Stephens, 1836)

Gandellino (BG), 1♂, 11.VII.1991.

Peripsocus subfasciatus Rambur, 1842

Vertova (BG), 1♀, 5.VI.1993

Family Ectopsocidae

Ectopsocopsis cryptomeriae (Enderlein, 1907)

Monti Madonie (PA), Rif. Marini, 1♂, 1.VI.1963; Vignola (MO) presso fiume Panaro, 4♂♂, 6♀♀, 22.VII.1992.

Ectopsocus briggsi McLachlan, 1899

Sigillo (PG) Piani di Monte m1200, 1♂, VI/XII.1991; Vignola (MO) presso fiume Panaro, 1♂, 22.VII.1992; Reggio di Calabria (RC) San Gregorio, 1♂, 5.III.1992; 4♂, 10♀♀, 9.IV.1992 on *Citrus sinensis*; Lentini (SR) Palazzelli, 101♂♂, 162♀♀, 11.IV.1991; 3♂♂, 4♀♀, 7.VI.1991; 7♂♂, 3♀♀, 3.VII.1991; 1♂, 6.III.1992; 1♂, 15.XII.1992 on *Citrus deliciosa*; Siracusa (SR) Fonte Ciane, 1♂, 6.VI.1991; 1♂, 7.XI.1991; 1♂, 1♀, 5.III.1992 on *Citrus limon*.

Ectopsocus meridionalis Ribaga, 1903

Pontirolo (BG), 4♀, 8 nymphs, 22.XI.1980 in *Talpa europaea* nest; Talamona (SO), 1♀, 12.XII.1982 in *Talpa europaea* nest; Chignolo d'Isola (BG), 2 nymphs, 9.XI.1980 in *Talpa europaea* nest; Calolziocorte (BG), 1♀, 25.I.1981 in *Talpa europaea* nest; Castelnuovo del Garda (VR), 1 nymph, 25.II.1982 in *Talpa europaea* nest; Bosio Parini (CO), 1♀, 17.XII.1981 in *Talpa europaea* nest; 2♀, 1 nymph, 17.XII.1981 in *Talpa europaea* nest.

Family Lachesillidae

Lachesilla pedicularia (Linnaeus, 1758)

Monte Etna (CT), 1♂, 30.V.1963; Savogna (UD) Montemaggiore, 1♂, 14.VIII.1968; Castione della Presolana (BG) Monte Pora, 1♂, 1♀, 5.X.1966; Reggio di Calabria (RC) San Gregorio, 1♂, 10♀♀, 9.IV.1991 on *Citrus sinensis*.

Lachesilla bernardi Badonnel, 1938.

Vignola (MO) presso fiume Panaro, 1♂, 1♀, 22.VII.1992.

Lachesilla quercus Kolbe, 1880

Reggio di Calabria (RC) San Gregorio, 4♂, 7♀♀, 9.IV.1992 on *Citrus sinensis*.

Family Psocidae

Amphigerontia contaminata Stephens, 1836

Reggio di Calabria (RC) San Gregorio, 1♀, 9.IV.1991 on *Citrus sinensis*.

Neopsocus rhenanus Kolbe, 1882

Fiuminata (MC) Passo Cornello, 1♂, 1♀, VI/IX.1992.

Loensia fasciata (Latreille, 1799)

Sigillo (PG), 1♀, 1 nymph, VI/XII.1991.

Loensia variegata (Latreille, 1799)

Bagni di Lucca (LU), 1♀, 5.IX.1991.

Psococerastis gibbosa (Sulzer, 1776)

Castelnuovo di Garfagnana (LU), 1♀, 12.IX.1991 on *Corylus avellana*; Bagni di Lucca (LU), 1♂, 4♀♀, 5.IX.1991; Giardinetto (PT), 1♂, 1♀, 5.IX.1991 on *Carpinus* sp.; Fagnano Castello (CS) lago Trifoglietti, 1♂, 3.VIII.1993; Cassiglio (BG) m 600, 1♂, 19.IX.1993.

Psocus bipunctatus (Linnaeus, 1761)

Valmasino (SO) Val di Mello, 17♂♂, 12♀♀, 12 nymphs, 25.VII.1982; Valmasino (SO) Valle di Sasso Bisolo, 1♀, VII.1982; Castelsantangelo sul Nera (MC) sopra Rapegna m 1200, 1♂, I/VI.1992.

Trichadenotecnum sexpunctatum (Linnaeus, 1761)

Giardinetto (PT), 1♀, 5.IX.1991 on *Carpinus* sp.; Abetone, 1♀, 5.IX.1991 on *Fagus sylvatica*.

DISCUSSION: In general, the 43 species mentioned in this paper form part of a typical European psocid fauna. However, some species are interesting by their rarity or from a biogeographical point of view.

For instance, *Caecilius dahli* Badonnel, 1963, was originally described from the Azores and later recorded from Portugal (Lienhard, 1981), newly Azores (Baz, 1988) and Italy (Lienhard, 1990b). The present record confirms its occurrence in Italy which, as pointed out Lienhard (op. cit.), suggests an atlantomediterranean distribution for this species.

More interesting is the distributional pattern of *Aaroniella badonneli* (Danks, 1950). Within the Palaearctic region this species is only known from Caucasus (Danks, 1968), Far East of Russia (Vishnyakova, 1986) and Azores (Baz, 1988). In the Nearctic region it is widely distributed (Mockford, 1979). Its occurrence in Italy as well as its rarity suggests a more widespread European distribution in Pre-Pleistocene times (see also Baz, 1988, 1991).

Mesopsocus fuscifrons Meinander, 1966, was described from Morocco and later recorded from France, Corsica (Badonnel, 1975) and Italy (Gunther, 1989). This record confirms the presence of this interesting species in Italy.

Ectopsocopsis cryptomeriae (Enderlein, 1907), originally described from Japan is a widespread species known from China, Hongkong, Taiwan, Malaya, Micronesia, Hawaii (see Thornton & Wong, 1968), Caucasus (Danks, 1955), USA, Mexico and Cuba (see Mockford, 1950, 1965, 1974). In Europe is a little known species, has been recorded from Rumania (Bechet, 1972), Croatia (Gunther & Kalinovic, 1975), Switzerland (Lienhard, 1978) and, more recently, Hungary (Sziraky, 1991). This is the first record of the species from Italy.

ACKNOWLEDGEMENTS: I thank dr Marco Valle for his offer to study the specimens of Psocoptera of the Museo Civico di Scienze Naturali in Bergamo.

Consegnato dicembre 1993

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