

Contribution to the knowledge of the Chamaemyiidae (Diptera) of Italy, Switzerland and some Mediterranean countries with the description of *Parochthiphila (Euestelia) ephesi* n. spec. from Turkey

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Contribution to the knowledge of the Chamaemyiidae (Diptera) of Italy, Switzerland and some Mediterranean countries with the description of *Parochthiphila (Euestelia) ephesi* n. spec. from Turkey. - A new species, *Parochthiphila (Euestelia) ephesi* sp. n. from Turkey is described, illustrated and compared with related species. There follows a list of 19 species of the genera *Parochthiphila*, *Chamaemyia* and *Leucopis*, collected in Italy, Switzerland and several countries around the Mediterranean. *Parochthiphila (Euestelia) nigrolineata* Beschovski & Merz is recorded for the first time from Italy (Valley of Aosta), *Parochthiphila (Parochthiphila) inconstans* (Becker), *Parochthiphila (Euestelia) nigripes* (Strobl), *Chamaemyia juncorum* (Fallén) and *Chamaemyia polystigma* (Meigen) are new for Cyprus, and *Parochthiphila (Euestelia) frontella* Rondani is new for France (Corsica) and reported for the first time from the following Italian regions: Sardinia, Lazio, Puglia. The frequently misidentified species *Chamaemyia aridella* (Fallén) is illustrated to show the variability in the shape of the aedeagus.

Keywords: Diptera - Chamaemyiidae - new species - *Parochthiphilia* - *Chamaemyia* - *Leucopis*.

INTRODUCTION

The Chamaemyiidae, with larvae that prey on Aphidoidea and/or Coccoidea, are small, generally silvery grey flies (1-5 mm long) found in all zoogeographic areas, although the majority of known species are described from the Palaearctic Region. Faunistic and systematic knowledge of the family in the Palaearctic Region, however, is still fragmentary and rather poor, partly due to difficulties in collection and species determination, in particular with regard to females. Worldwide, this family comprises more than 250 described species, divided into 27 genera and subgenera. The family exhibits characteristic trophic specialization at generic or subgeneric level (McAlpine, 1960, 1971; Raspi, 1983a, 1983b, 1985, 1988, 1995, 1996, 2003, 2005, 2006, 2008; Raspi & Bertolini, 1993; Gaimari & Raspi, 2002; Raspi & Ebejer, 2008; Tanasijtshuk, 1986, 1996, 1997).

This contribution presents the data and species determinations of numerous specimens of Diptera Chamaemyiidae, collected in Switzerland and some Mediterranean countries, mainly in Italy.

MATERIAL AND METHODS

This study is based on 287 specimens collected with an insect net in the following countries: Italy, Switzerland, France, Malta, Cyprus and Turkey. In preparation of the genitalia, the final segments of specimens were removed and soaked in a hot KOH solution for several minutes, rinsed in distilled water, studied and stored in a drop of water soluble Faure liquid on the label under the specimen. Morphological terms in the descriptions follow McAlpine (1981, 1987). Two asterisks ** signify that the species is new for this country (Gaimari & Tanasijtshuk, 2011) and one asterisk * after an Italian region indicates that the species is here for the first time recorded in this region (Raspi, 1995).

In general, at least one specimen of each species is deposited in the Muséum d'Histoire Naturelle de Genève (MHNG). Duplicate specimens are retained in the Dipterological Collection of the "G. Scaramuzzi" Department of Coltivazione e Difesa delle Specie Legnose, Pisa University (CDSL).

RESULTS

Parochthiphila (Euestelia) ephesi new species

Figs 1-7

HOLOTYPE: ♂, W. TURKEY, Pamucak, near Ephesus/beach, 29.IV.1998, D.M. Ackland legit.

PARATYPES: 6♂♂, 3♀♀, same data as holotype. – 1♀, W. Turkey: near Bodrum, 4 Km NNE, headland, 26.IV.1998, D.M. Ackland legit.

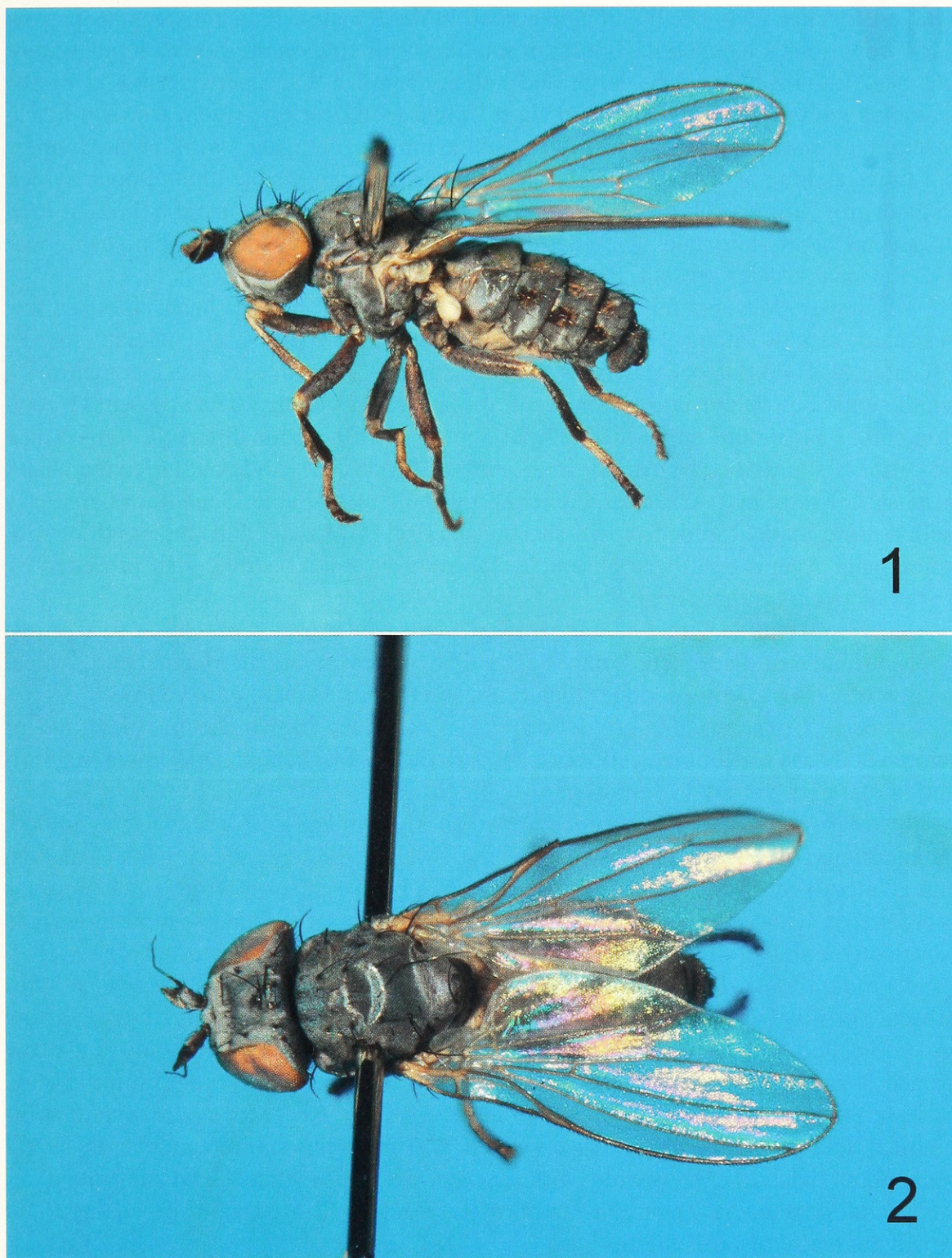
The holotype and 6 paratypes (4♂♂ & 2♀♀) are deposited in the MHNG and 4 paratypes (2♂♂ & 2♀♀) in the CDSL.

ETYMOLOGY: The specific name refers to the type-locality.

DIAGNOSIS: Body grey with a gilded brown sheen at certain angles of light, more evident on scutellum and abdomen. Mesopleuron without setae. Frons at level of anterior orbital seta with a transverse irregular row of scattered small setulae and, only in the female, a transverse brown or black band which may be less evident sometimes. Antenna brown-black. Mesonotum usually bare, 1 + 3 dorsocentral setae. Male and female with 2 pairs (2 median and 2 lateral) of large, sub-oval elongate, brown-black spots on tergites 3-5. Tibiae and tarsi dark brown-black.

DESCRIPTION: ♂ & ♀ (Figs 1-4). Body 2-2.5 mm long; grey with a gilded pale brown sheen more marked on scutellum and abdomen.

Head: About 1.1 times higher than long; frons at level of anterior ocellus 0.4 times width of head. Frons matt grey, fronto-orbital plate pale grey and raised; at level of anterior orbital seta with transverse irregular row of scattered small setulae and, only in the female, a transverse brown or black band, less conspicuous sometimes, shaded off towards the top and laterally; 2 reclinate orbital setae, the anterior setae reaching anterior third of frons. Ocellar plate silvery grey and slightly raised; ocelli about equidistant. Ocellar setae proclinate, inner vertical seta shorter than outer vertical



FIGS 1-2

Parochthiphila (Euestelia) ephesi n. spec. (2-2.5 mm), Turkey. (1) Male paratype, habitus in lateral view. (2) Male paratype, habitus in dorsal view.

seta, postocellar setae small and convergent. In the female with a conspicuous narrow dark brown-black band above border of lunule, continuing on the side along margin of the eye. Lunule bare, grey, large and sub-rectangular. Face between bases of the antennae with a prominent thin and short brown facial carina. Antenna brown-black, inserted at middle of the head. First flagellomere elongate, with pointed apex, 1.5 times as long as high, setulae white, longer and more visible along upper border. Pedicel grey pruinose on inner part. Arista dark brown, third aristomere 6 times as long as second, with short and white setulae. Ratio height of gena: height of eye about 1: 2.5. Genal bristles present. Palpus brown-black, labellum yellow.

Thorax: Mesonotum bare, grey with a faint gilded brown sheen; line of a few scattered setulae along two short barely noticeable dark grey median stripes. Chaetotaxy: 1 + 3 dorsocentral setae roughly equidistant from each other, sometimes a small setula before presutural dorsocentral seta; no prescutellar setae present; 1 postpronotal, 1 presutural supra-alar, 2 notopleurals with anterior distinctly longer than posterior, 1 supra-alar, 1 posterior intra-alar and 1 postalar seta about twice the length of posterior intra-alar seta. Prescutellum barely distinguishable. Scutellum bare, grey with a more marked gilded brown sheen, 1 pair of basal setae half the length of subapical pair. Anepisternal seta absent; Katepisternum with 1 strong seta preceded by 1 short seta along upper edge.

Wing: Hyaline with dark microtrichia, veins pale brown. Crossvein r-m at or just beyond middle of discal cell. Veins R_{4+5} and M weakly divergent in distal part. Apical section of CuA_1 1.5 times longer than crossvein dm-cu. Haltere pale yellow.

Legs: Coxae and femora dark grey with a gilded brown sheen; apical part of femora and base of all tibiae yellow, tibiae dark brown-black, tarsi dark brown in dorsal and lateral part, yellow in ventral part.

Abdomen: Grey, with a gilded brown sheen. Syntergite 1+2 brown-grey gilded, darker along posterior and posterolateral edge. Male and female with 2 pairs (2 median and 2 lateral) of large, suboval elongate, brown-black spots on tergites 3-5. Tergites 3-5 covered with sparse setulae, arranged in approximately four irregular transverse rows, longer and stronger at postero-lateral angles and along posterior edge.

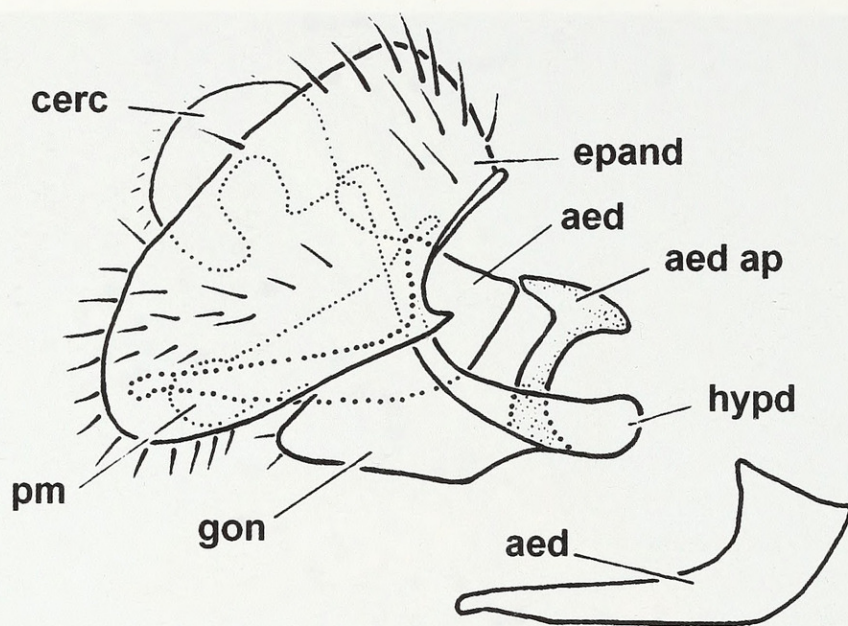
Male terminalia (Figs 5, 7): Pre genital sclerites: two narrow separate sclerites present dorsally between fifth tergite and epandrium, sixth tergite transversally narrow and elongated sub-rectangular, sixth sternum mostly membranous, only a narrow arched asymmetrical and very weak sclerite; syntergosternite 7 + 8 forming a ring, more sclerotized dorsally; almost membranous ventrally except for a narrow and asymmetrical sclerotized margin along upper edge. Epandrium sub-rectangular in lateral view, about twice as high as wide, with strong setae. Aedeagal apodeme sub-triangular, small and slender. Aedeagus, in lateral view, abruptly curved from broad base and tapers gradually towards the tip.

Female terminalia (Fig. 6): Seventh sternite subrectangular and bilobed distally. Seventh tergite with 2 large subtriangular and elongate symmetrical sclerites becoming abruptly narrower in distal third; first third of tergite distinctly more sclerotized.

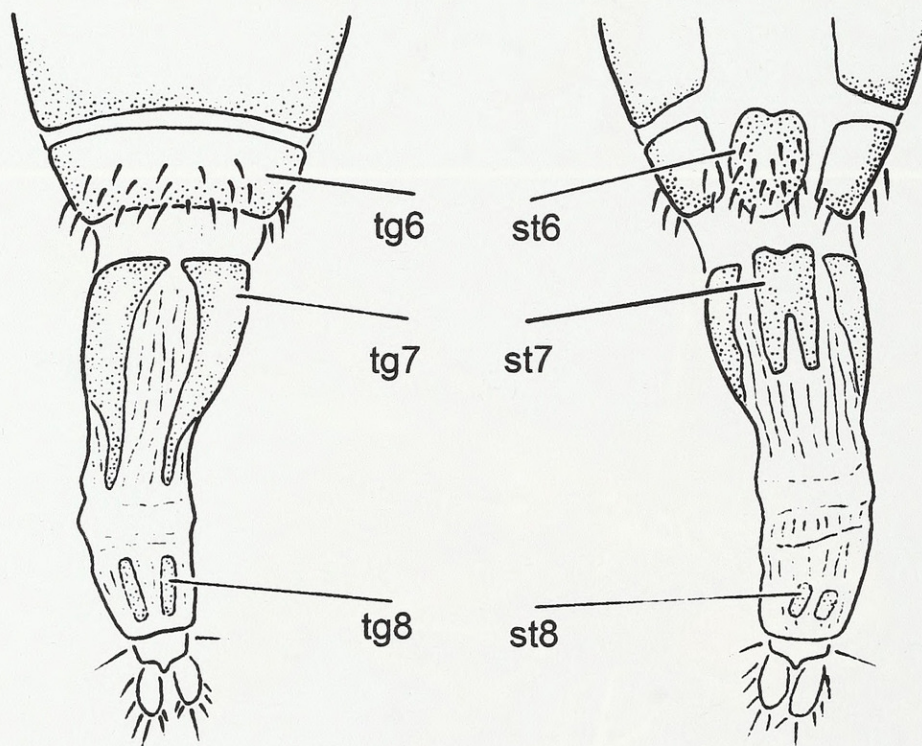
FIGS 3-4

Parochthiphila (Euestelia) ephesi n. spec. (2-2.5 mm), Turkey. (3) Female paratype, habitus in lateral view. (4) Female paratype, habitus in dorsal view.





5



0.1mm

6

FIGS 5-6

Parochthiphila (Euestelia) ephesi n. spec., Turkey. (5) Holotype, male terminalia in lateral view and detail of aedeagus; abbreviations: aed = aedeagus, aed ap = aedeagal apodeme, cerc = cercus, epand = epandrium, gon = gonopod, hypd = hypandrium, pm = paramere. (6) Paratype, female terminalia in dorsal and ventral view; abbreviations: tg = tergite, st = sternite.

Seventh tergite, seventh sternite and cercus brown. Eighth sternite with 2 symmetrical suboval elongate weak sclerites in distal half, eighth tergite with 2 symmetrical elongate very weak sclerites; 2 pairs of strongly sclerotized spherical spermathecae present.

REMARKS: The new species can be assigned to the *P. (E.) coronata* (Loew) group on the basis of its 1+3 strong dorsocentral setae. Within this group only *P. (E.) kimmerica* Tanasijtshuk, 1968, with dark tibiae, and also known from Turkey (Raspi & Ebejer, 2008), is similar to the new species, but they differ in the colouration of body (gilded brown sheen in the new species) and in the brown or black frontal band that is present only in the female in *P. ephesi* sp. n. but in both sexes in *E. kimmerica*. Further, they differ in the structure of the male genitalia.

BIOLOGY: Unknown. Judging from its generic position it may be speculated that the larvae may be found between the leaf sheaths and secondary stalks of Gramineae infested by Pseudococcidae (Sternorrhyncha), where they prey on mealybugs as other species of *Parochthiphila* and *Chamaemyia* with known biology (Raspi, 1983a, 2006).

Parochthiphila (Euestelia) coronata (Loew, 1858)

MATERIAL EXAMINED: ITALY, Lazio*, 7♂♂, 2♀♀, Roma 10m, Castel Porziano, Strada del Telefono, 30.VIII.2004 (41.41N/12.23E, dry forest, riverbed), Merz, Cerretti & Nardi legerunt (MHNG: 5♂♂ & 2♀♀; CDSL: 2♂♂). – 3♂♂, 2♀♀, Latina 0m, P.N. del Circeo, Sabaudia, Torre di Fogliano, 31.VIII.2004 (41.21N/12.56E, sand dunes, beach) Merz, Cerretti & Nardi legerunt (MHNG: 1♂ & 2♀♀; CDSL: 2♂♂). – 1♂, Latina 20m, P.N. del Circeo, S. Felice, Quarto Freddo, 1.IX.2004 (41.14N/13.03E, pasture, shrubs) Merz, Cerretti & Nardi legerunt (MHNG). – ITALY, Sicily, 5♂♂, 5♀♀, Etna 1450m, Piano di Donne, 5.VI.1999, B. Merz legit (MHNG: 3♂♂ & 3♀♀; CDSL: 2♂♂ & 2♀♀). – 1♂, Etna 1800m, Piano Provenzana, 9.VI.1999, B. Merz legit (MHNG). – 3♂♂ & 4♀♀, Etna 1700m, rif. Citelli, 12.VI.1999, B. Merz legit (MHNG: 2♂♂ & 4♀♀; CDSL: 1♂). – SWITZERLAND, 1♀, BL 265m, Birsfelden, 13.VI.1989, B. Merz legit (MHNG). – 1♀, VS 630m, Leuk-Pfynwald, 6.VII.1997, B. Merz legit (MHNG). – 1♂, VS 620m, Leuk-Rotafen, 10.VIII.1997, B. Merz legit (MHNG). – 2♂♂, VS 590m, Leuk-Pfynwald, 12.VIII.1997, B. Merz legit (MHNG: 1♂; CDSL: 1♂). – 1♂, 1♀, VS 600m, Leuk-Pfynwald, 614100/290070, 6.VI.2001, Merz & Landry legerunt (MHNG). – FRANCE, Drôme, 1♀, 820-950m, Chalancon/Col des Roustans (D135), 11.VII.1999, B. Merz legit (MHNG).

Parochthiphila (Euestelia) frontella (Rondani, 1874)

MATERIAL EXAMINED: ITALY, Sardinia*, 1♀, Dorgali reg. 0m, Cala Luna (S of Cala Gonone)/St.9; 17.VI.2002, 49.13.27N/9.37.36E, B. Merz & M. Eggenberger/St.9 legerunt (MHNG). – 2♂♂, 2♀♀, Bosa region 0m, Bosa Marina, 20.VI.2002/St.13, 40.17.15N/8.29.04E, B. Merz & M. Eggenberger/13 legerunt (MHNG: 1♂ & 2♀♀; CDSL: 1♂). – 1♀, Baunei region 0m, Santa Maria Navarrese/St.10, 18.VI.2002, 39.59.13N/9.41.18E, B. Merz & M. Eggenberger/10 legerunt (CDSL). – 3♂♂, Cagliari reg. 1000m, Mt. Ferru, Mt. Urtigu/St.15, 21.VI.2002, 40.09.29N/8.37.44E, B. Merz & M. Eggenberger/15 legerunt (MHNG: 2♂♂; CDSL: 1♂). – Lazio*, 1♂, Latina 10m, P.N. Circeo, Sabaudia, Selva del Circeo, 31.VIII.2004/3, 41.21N/13.01E, mixed forest, pond, Merz, Cerretti & Nardi legerunt (CDSL). – 2♂♂, Latina 20m, P.N. del Circeo, S. Felice, Quarto Freddo, 1.IX.2004 (41.14N/13.03E, pasture, shrubs) Merz, Cerretti & Nardi legerunt (MHNG: 1♂; CDSL: 1♂). – 4♂♂, Latina 0m, P.N. Circeo, Sabaudia, Pantani dell'Inferno, 2.IX.2004, 41.20N/12.59E, saltmarsh, Merz, Cerretti & Nardi/9 legerunt (MHNG). – Puglia*, 1♀, 650m, Mte. Gargano, 5km E S. Giovanni, 26.VII. 1995, B. Merz legit (MHNG). – FRANCE**, Corsica (South), 3♂♂, Sartène, Tizzano, 80m, Les Hauts de L'Avena, 1.VIII.2004, B. Merz & S. Guyot legerunt (MHNG: 2♂♂; CDSL: 1♂).

REMARKS: The posterior tibia in the females of Sardinia is sometimes grey-dark under the dark ring close to the base. The males of Sardinia and Corsica have often small dorsal and lateral spots on abdomen and/or posterior tibia with two well visible dark rings (Rondani, 1874; Raspi, 2006).

***Parochthiphila (Euestelia) nigripes* (Strobl, 1900)**

MATERIAL EXAMINED: ITALY, Sardinia*, 3♂♂, Bosa region 0m, Bosa Marina, 20.VI.2002/St.13, 40.17.15N/8.29.04E, B. Merz & M. Eggenberger/13 legerunt (MHNG: 1♂; CDSL: 2♂♂). – FRANCE, Bouches-du-Rhône, 1♂, Arles-Gare, 24.V.1993, B. Merz legit (MHNG). – 1♀, Arles-Rhône Ufer, 27.V.1995, B. Merz & M. Eggenberger legerunt (MHNG). – CYPRUS**: 1♂, 12 Km N Akrounta, 640 m, 24.IV.2002/St.14, 34.49N/33.06E, pine forest, Merz, Deeming, Ebejer & Gatt legerunt (CDSL). – TURKEY, 2♂♂, Pamakkule, 20Km NNE Denizili near Hotel, 23.IV.1998, D.M. Ackland legit (MHNG: 1♂; CDSL: 1♂). – 1♂, W. Turkey near Bodrum 4Km NNE, headland, 26.IV.1998, D.M. Ackland legit (MHNG). – 1♂, Antalya Prov., Camyuva 0m, 5Km S Kemer, 27.IV.2000, Merz & Senay legerunt (MHNG). – 1♀, Antalia Prov., Termessos 350m, 25Km NW Antalya, 1.V.2000, Merz & Senay legerunt (MHNG).

REMARKS: Frequently, in specimens with 1+3 dorsocentral setae the anterior two postsutural setae are small and only the last one is well developed, the mesonotum is setulose, and often the abdomen of male lacks dark spots.

***Parochthiphila (Euestelia) nigrolineata* Beschovski & Merz, 1998**

Fig. 8

MATERIAL EXAMINED: ITALY**, Valley of Aosta, 2♂♂, 600m, St. Pierre, 15.V.1999, Merz & Schmid-Egger legerunt (MHNG: 1♂; CDSL: 1♂). – 1♂, 800-850m, St. Pierre, M. Torrette, 22.IV.2003, 584300/062700, B. Merz & F. Amiet legerunt (CDSL). – SWITZERLAND, 1♀, TI 350m, Biasca Loderio, 4.VIII.1997, B. Merz legit (MHNG). – 1♂, VS 630m, Leuk-Pfynwald, 6.VII.1997, B. Merz legit (CDSL). – 1♂, VS 630m, Leuk-Platten, 22.IV.1998, Merz & Botta legerunt (MHNG). – 1♀, VS 625m, Leuk-Platten, 1.VIII.1998, Merz & Bachli legerunt (MHNG). – 1♀, VS 625m, Leuk-Platten, 2.V.1999, B. Merz legit (MHNG). – 5♂♂, VS 600m, Leuk-Pfynwald, 614100/290070, 6.VI.2001, Merz & Landry legerunt (MHNG: 4♂; CDSL: 1♂). – 1♀, VS 625m, Leuk-Platten, 617700/128400, 8.VI.2001, Merz & Landry legerunt (MHNG). – 1♂, VS 600m, Leuk-Pfynwald, 614100/290070, 25.VIII.2001, Merz & Landry legerunt (MHNG). – 2♂♂; 1♀, VS 625m, Leuk-Platten, 30.V.2002, B. Merz legit (MHNG: 1♂ & 1♀; CDSL: 1♂). – 1♂, VS 460-750m, Branson/Follatères, 9.VI.2004, B. Merz & J.P. Haenni legerunt (CDSL).

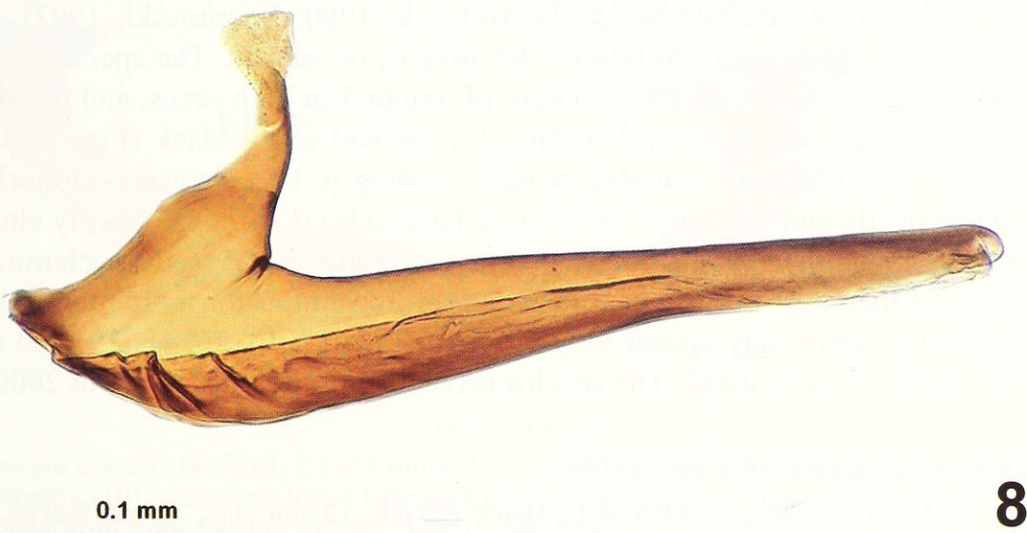
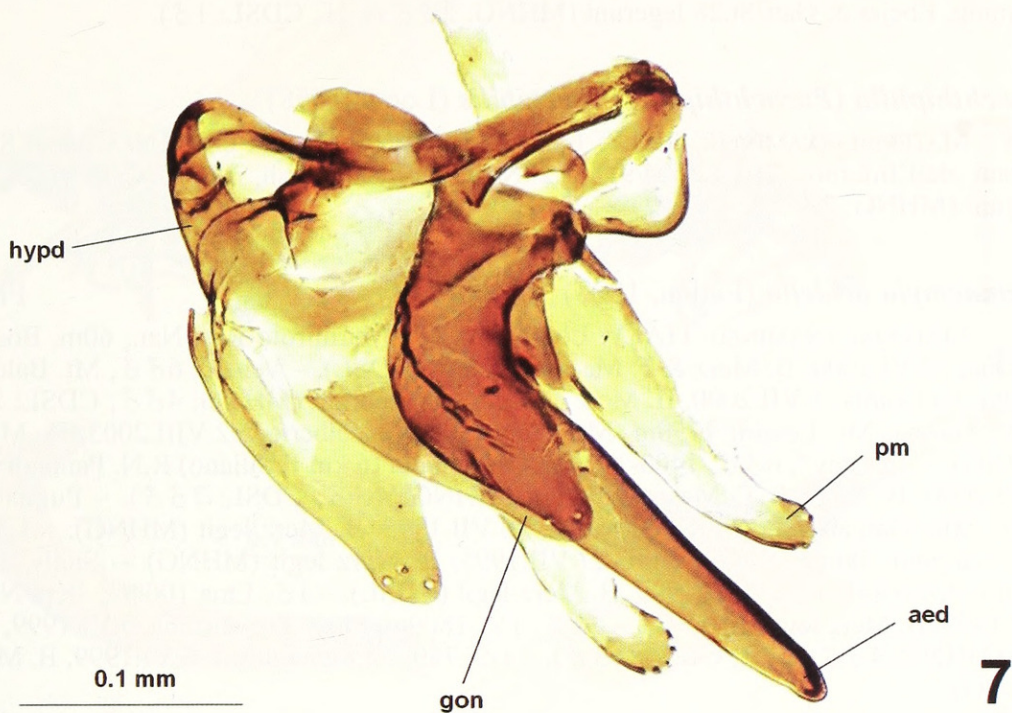
REMARKS: This species, characterized by “mesopleural bristles and setae absent” (Beschovski & Merz, 1998), differs from exteriorly similar *P. coronata* basically by a yellow-golden frons under the transverse black band, by two slight black stripes along dorsocentral setae, by roughly continuous lateral black bands on segments 2-5 of abdomen and the male terminalia. The shape of the aedeagus of *P. nigrolineata* (Fig. 8) is similar to *P. nigripes* and *P. tryapitzini* Tanasijtshuk, 1968, but it differs from these two species in chaetotaxy, and colour of the antennae, palpi and legs (Beschovski & Merz, 1998).

***Parochthiphila (Euestelia) transversa* (Hennig, 1938)**

MATERIAL EXAMINED: ITALY, Sicily, 2♂♂, Etna 1450m, Piano di Donne, 5.VI.1999, B. Merz legit (MHNG). – 2♂♂, Etna 1000m, 3Km NW Milo, 5.VI.1999, B. Merz legit (MHNG: 1♂; CDSL: 1♂).

***Parochthiphila (Parochthiphila) inconstans* (Becker, 1903)**

MATERIAL EXAMINED: MALTA, 1♂, 1♀, Gozo, Ramla Bay, 16.VI.1999, B. Merz legit (MHNG). – 1♂, Marsaxlokk Beach, 35.50N/4.33E, 4.V.2001, B. Merz legit (CDSL). – 1♂



FIGS 7-8

Parochthiphila (Euestelia) spp. (7) *Parochthiphila (Euestelia) ephesi* sp. n., Turkey, paratype, male terminalia in lateral view; abbreviations: aed = aedeagus, cerc = cercus, gon = gonopod, hypd = hypandrium, pm = paramere. (8) *Parochthiphila (Euestelia) nigrolineata* Beschovski & Merz, Italy, Valley of Aosta, aedeagus in lateral view.

Mgiebah, 0m, 35.58N/14.23E, 5.V.2001, B. Merz legit (MHNG). – CYPRUS**: 3♂♂, 1♀, Akamas peninsula, 0m, Lara beach, 28.IV.2002/St.28, 34.58N/32.19N, dunes, meadow, Merz, Deeming, Ebejer & Gatt/St.28 legerunt (MHNG: 2♂♂ & 1♀; CDSL: 1♂).

***Parochthiphila (Parochthiphila) spectabilis* (Loew, 1858)**

MATERIAL EXAMINED: ITALY: Lazio, 2♂♂, 2♀♀, Latina 0m, P.N. Circeo, Sabaudia, Pantani dell'Inferno, 21.IX.2004/9, 41.20N/12.59E, saltmarsh, Merz, Cerretti & Nardi/9 legerunt (MHNG: 2♂♂ & 1♀; CDSL: 1♀).

***Chamaemyia aridella* (Fallén, 1823)**

Figs 9-20

MATERIAL EXAMINED: ITALY: Lombardy, 1♂, Marmirolo Res. Nat., 60m, Bosco della Fontana, 27.VI.2000, B. Merz & F. Mason legerunt (CDSL). – Veneto, 6♂♂, Mt. Baldo 1750-1850m, La Colma, 1.VII.2000, B. Merz & F. Mason legerunt (MHNG: 4♂♂; CDSL: 2♂♂). – 2♂♂, Verona, Mt. Lessini 1750m, Mt. Range, Mt. Castelbarto, 12.VIII.2003, B. Merz legit (MHNG). – Tuscany*, 6♂♂, 1400-1600m, Orecchiella (6 km E Sillano) R.N. Pania di Corfino, 29.VI.2000, B. Merz & F. Mason legerunt (MHNG: 4♂♂; CDSL: 2♂♂). – Puglia*, 2♂♂, 650m, Mte. Gargano, 5km E S. Giovanni, 26.VII.1995, B. Merz legit (MHNG). – 1♂, 650m, Mte. Gargano, 5km E S. Giovanni, 27.VII.1995, B. Merz legit (MHNG). – Sicily, 1♂, Etna 1450m, Piano di Donne, 5.VI.1999, B. Merz legit (CDSL). – 1♂, Etna 1000m, 3Km NW Milo, 5.VI.1999, B. Merz legit (MHNG). – 6♂♂, 1♀, 1800m, Piano Provenzana, 9.VI.1999, B. Merz legit (MHNG: 4♂♂ & 1♀; CDSL: 2♂♂). – 1♂, 750m, Linguaglossa, 6.VI.1999, B. Merz legit (MHNG).

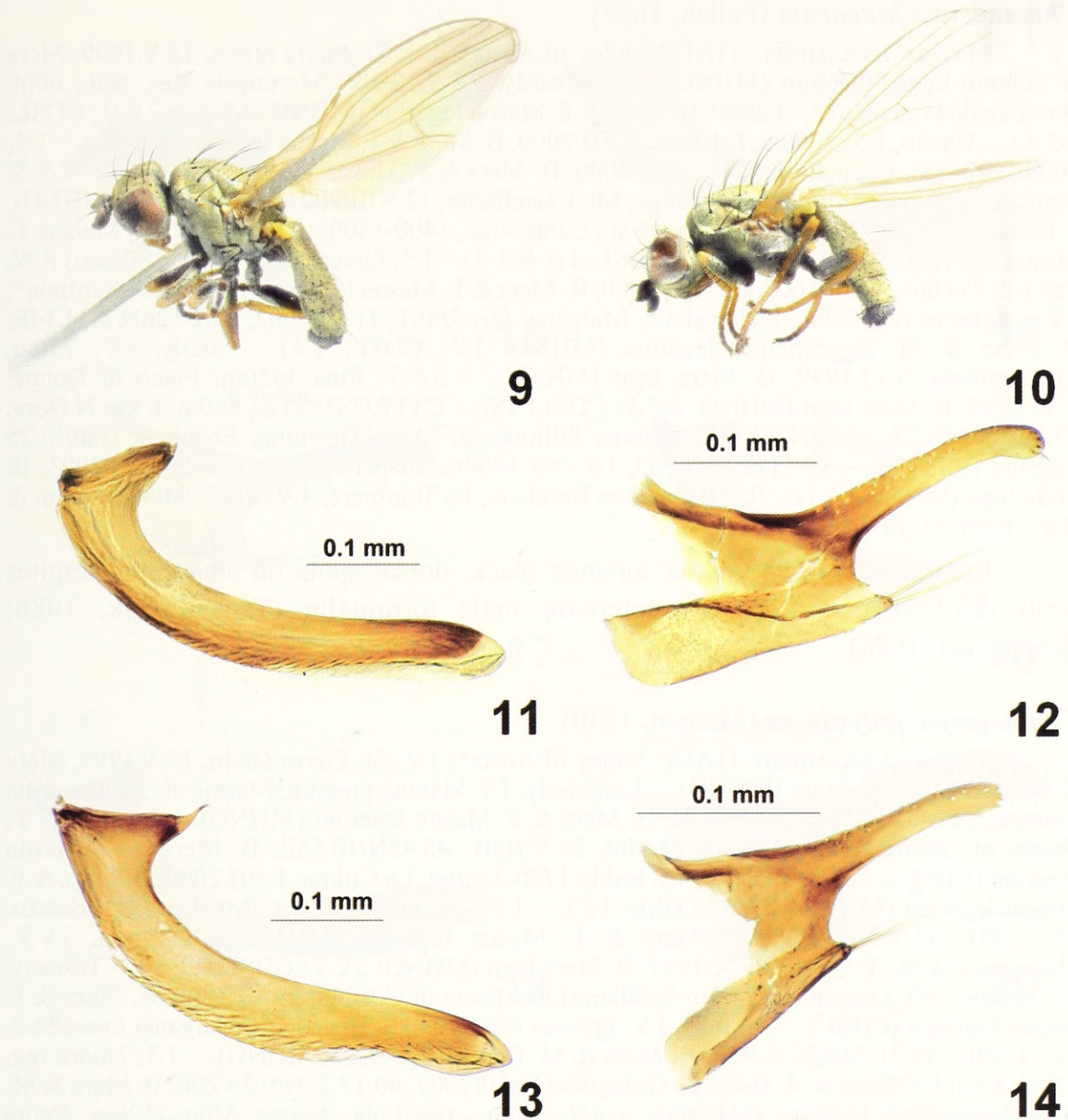
REMARKS: *C. aridella* has black antennae, yellow, rarely brownish palpi, and abdomen silver grey with light gold pollinosity and without spots in both sexes (Coe, 1942; Collin, 1966; Beschovski & Tanasijtshuk, 1990; Beschovski, 1992). Rarely, however, faint dorsal spots on tergites 4-5 may be developed. The species is characterized by long setae on posterior margin of tergite 5 in both sexes, and the shape of tergite 9 of male which is oval in lateral view and shiny black (Figs 9, 10, 15). Aedeagus, in lateral view, variable at base, tending to be enlarged posteriorly, then characteristically and regularly curved from base to tip (Figs 11-20), fairly elongated, but always longer than parameres. Ventral part of tubular aedeagus less sclerotized and ruffled, and therefore warps sometimes during preparation for morphological study; thus a similar shape may appear very different (Figs 11, 13, 16, 18, 19) and may be source for misidentifications. The species is common in Italy from 600 to 2000m.

***Chamaemyia elegans* (Panzer, 1809)**

MATERIAL EXAMINED: FRANCE, Haute Savoie, 1250m, 1♂, Grand Salève, Observatoire, 10.VIII.2003, B. Merz legit (MHNG).

***Chamaemyia flavicornis* (Strobl, 1902)**

MATERIAL EXAMINED: MALTA, 1♀, Salina Bay, 4.VI.1999, B. Merz legit (CDSL). – 1♀, Fommir-Rih Bay, 14.VI.1999, B. Merz legit (CDSL). – 3♂♂, Malta-Gozo, Ramla Bay, 16.VI.1999, B. Merz legit (MHNG). – 19♂♂, 3♀♀, Ghajn Tuffieha Bay, 0m, 35.56N/14.21E, 1.V.2001, B. Merz legit (MHNG: 14♂♂ & 3♀♀; CDSL: 5♂♂). – 1♀, 0m, Salina Bay, 35.57N/14.25E, 2.V.2001, B. Merz legit (CDSL). – 1♀, Ghajn Rihana, 20m, 35.55N/14.25E, 2.V.2001, B. Merz legit (CDSL). – 3♂♂, 1♀, Mgiebah, 35.58N/14.23E, 5.V.2001, B. Merz legit (MHNG: 3♂♂; CDSL: 1♀). – 3♂♂, 1♀, Malta-Gozo, Ghasri, Sara valley, 3.V.2002, B. Merz legit (MHNG). – 1♂, Malta-Gozo, Mgarr-ix-Xini, 3.V.2002, B. Merz legit (CDSL). – 1♂, Gnejna Bay, 0m, 4.V.2002, B. Merz legit (MHNG).



FIGS 9-14

Chamaemyia aridella (Fallén) (2.2-2.8 mm). (9-10) Male, habitus in lateral view. (9) Male from Italy (Veneto). (10) Male from Italy (Tuscany). (11-14) Variability in shape of male terminalia in lateral view from same locality in Italy (Veneto, Mt. Baldo, 1.VII.2000, 1750-1850m.), (11, 13) Aedeagus. (12, 14) Gonite,

REMARKS: Yellow antennae, only the tip of first antennomere dark. Mesonotum with dorsocentral and acrostical prescutellar setae strong, body grey-yellow, wing yellowish and characteristic male terminalia (Tanasijtshuk, 1986). Many specimens with Laboulbeniales (Ascomycetes) on legs.

***Chamaemyia geniculata* (Zetterstedt, 1838)**

MATERIAL EXAMINED: ITALY, Veneto*, 1♂, Mt. Baldo 1750-1850m, La Colma, 1.VII.2000, B. Merz & F. Mason legerunt (MHNG).

***Chamaemyia juncorum* (Fallèn, 1823)**

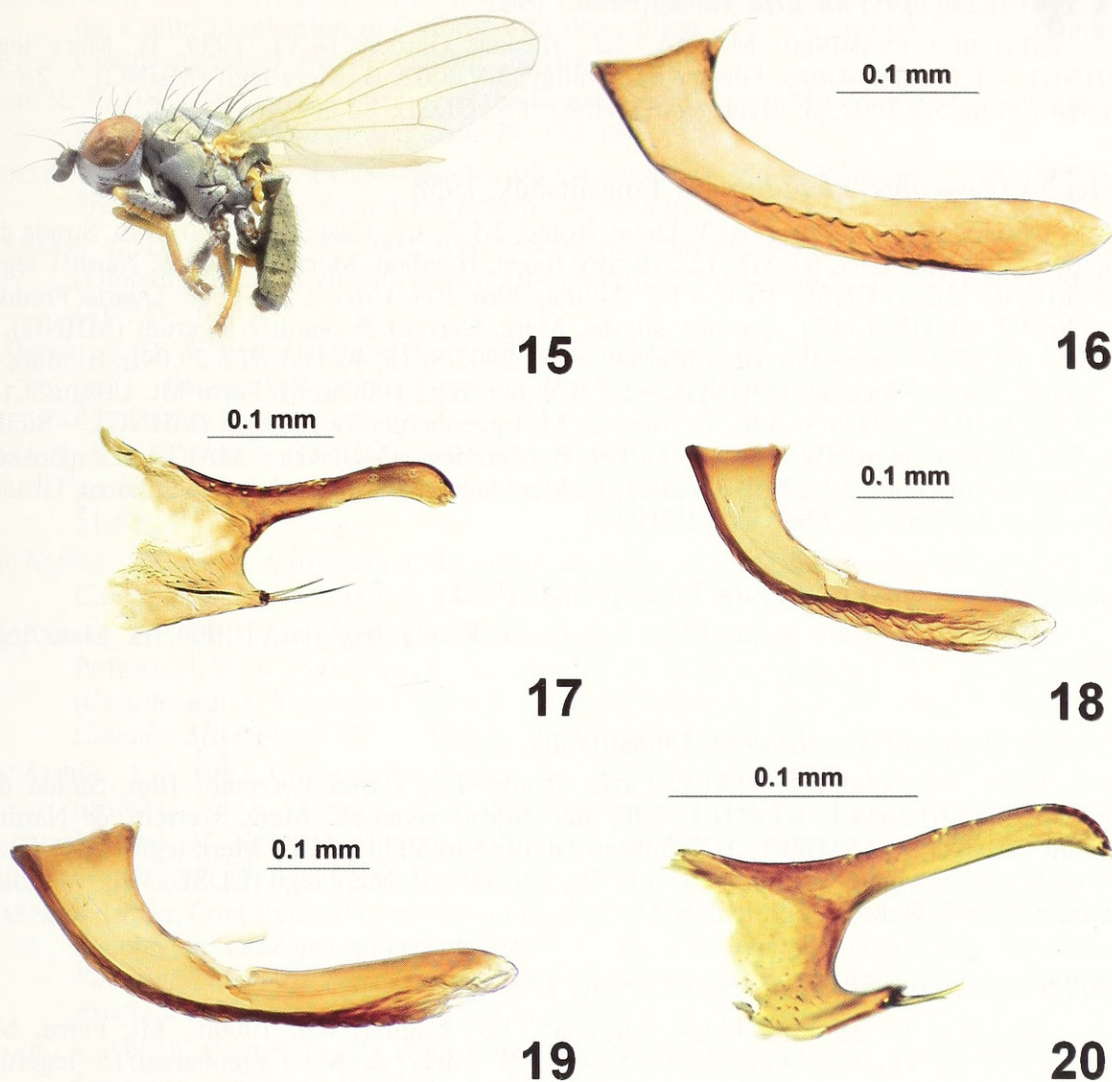
MATERIAL EXAMINED: ITALY, Valley of Aosta*, 1 ♀, St. Pierre 600m, 15.V.1999, Merz & Schmid-Egger legerunt (MHNG). – Lombardy, 7 ♂♂, 2 ♀♀, Marmirolo Res. Nat., 60m, Bosco della Fontana, 27.VI.2000, B. Merz & F. Mason legerunt (MHNG: 4 ♂♂ & 2 ♀♀; CDSL: 3 ♂♂). – Veneto, 1 ♂, 1000m, Erbezzo, 2.VII.2000, B. Merz & F. Mason legerunt (CDSL). – 1 ♂, 800m, Erbezzo, Cappella Fasani, 2.VII.2000, B. Merz & F. Mason legerunt (MHNG). – 2 ♂♂, Verona, Mt. Lessini, 1750m, Mt. Range, Mt. Castelberto, 12.VIII.2003, B. Merz legit (MHNG). – Tuscany, 2 ♂♂, 2 ♀♀, Abetone Res. Nat., Campolino, 1400-1800m, 28.VI.2000, B. Merz & F. Mason legerunt (MHNG: 1 ♂ & 1 ♀; CDSL: 1 ♂ & 1 ♀). – 1 ♂, Orecchiella (6 km E Sillano) R.N. Pania di Corfino, 1400-1600m, 29.VI.2000, B. Merz & F. Mason legerunt (MHNG). – Sardinia*, 2 ♀♀, Iglesias reg. 730m, S Benedetto, Marganai forest/St.1, 11.VI.2002, 39.20.26N/8.34.14E, B. Merz & M. Eggenberger legerunt (MHNG: 1 ♀; CDSL: 1 ♀). – Sicily, 1 ♀, 750m, Linguaglossa, 6.VI.1999, B. Merz legit (MHNG). – 3 ♂♂, Etna 1450m, Piano di Donne, 5.VI.1999, B. Merz legit (MHNG: 2 ♂♂; CDSL: 1 ♂). – CYPRUS**: 1 ♂, 660m, 6 km N Dora, 27.IV.2002/St.25, 34.48N/32.45E, pasture, hilltopping, Merz, Deeming, Ebejer & Gatt/St.25 legerunt (MHNG). – SWITZERLAND, 1 ♂, VS 1400m, Visperterminen/Kreuz, 3.VI.2003, B. Merz legit (MHNG). – 1 ♂, JU 1020m, Les Breuleux, La Tourbière, 4.VI.2003, Merz, Haenni & Rapp legerunt (MHNG).

REMARKS: Palpus yellow, antenna black, dorsal spots on abdominal tergites from third segment and characteristic male terminalia (Tanasijtshuk, 1986; Beschovski, 1995).

***Chamaemyia polystigma* (Meigen, 1830)**

MATERIAL EXAMINED: ITALY: Valley of Aosta*, 1 ♀, St. Pierre 600m, 15.V.1999, Merz & Schmid-Egger legerunt (MHNG). – Lombardy, 1 ♀ Mantua pr. 50m, Marmirolo, Bosco della Fontana, 25.V.2001, 45.12N/10.45E, B. Merz & F. Mason legerunt (MHNG). – Trentino, 1 ♀, Trento pr. 260m, Avio, valle dei Molini, 26.V.2001, 45.45N/10.55E, B. Merz & F. Mason legerunt (CDSL). – Veneto, 5 ♂♂, Mt. Baldo 1750-1850m, La Colma, 1.VII.2000, B. Merz & F. Mason legerunt (MHNG: 4 ♂♂; CDSL: 1 ♂). – 1 ♀, Verona, pr. 1060m, Mt. Lessini, Erbezzo, 27.V.2001, 45.39N/11.00E, B. Merz & F. Mason legerunt (MHNG). – Liguria, 7 ♀♀, Monterosso a M., P. Mese, 26.IX.1997, B. Merz legit (MHNG: 5 ♀♀; CDSL: 2 ♀♀). – Tuscany, 1 ♂, 1400-1600, Orecchiella (6 km E Sillano) RN Pania di Corfino, 29.VI.2000, B. Merz & F. Mason legerunt (CDSL). – Sardinia, 1 ♀, Iglesias reg. 570m, S. Benedetto, Marganai forest/St.2, 11.VI.2001, 39.21.22N/8.35.04E, B. Merz & M. Eggenberger/St.2 (MHNG). – 1 ♂, Nuoro reg. 120m, 8 km E Oliena/St. 4, Hotel Su Gologone, 13.VI.2002, 40.17.23N/9.29.20E, B. Merz & M. Eggenberger/St.4 legerunt (MHNG). – 1 ♀, Nuoro reg./Lula, Monte Albo 1120m, Punta Catirina/St.8, 16.VI.2002, 40.28.51N/9.31.57E, B. Merz & M. Eggenberger/St.8 (MHNG). – 2 ♂♂, Cuglieri reg. 1000m, Mt. Ferru, Mt. Urtigu/St.15, 21.VI.2002, 40.09.29N/8.37.44E, B. Merz & M. Eggenberger/15 legerunt (MHNG). – Puglia, 1 ♀, 650m, Mte Gargano, 5 km E S. Giovanni, 26.VII.1995, B. Merz legit (CDSL). – Lazio*, Roma, 1 ♂, Castel Porziano 10m, Grotta Romagnola, 30.VIII.2004/2, 41.45N/12.25E, old forest Oak trees Merz, Cerretti & Nardi/2 (MHNG). – Sicily, 2 ♂♂, 1000m, Etna, 3 km NW Milo, 5.VI.1999, B. Merz legit (MHNG: 1 ♂; CDSL: 1 ♂). – 2 ♂♂, 1100m, Nebrodi/Troina Lago d'Ancipa, 8.VI.1999, B. Merz legit (MHNG). – 2 ♂♂, 750m, Linguaglossa, 6.VI.1999, B. Merz legit (CDSL). – 1 ♂, 670m, Etna, Milo forest, 12.VI.1999, B. Merz legit (MHNG). – SWITZERLAND: 1 ♂, VS 1400m, Visperterminen/Kreuz, 3.VI.2003, B. Merz legit (MHNG). – CYPRUS**: 1 ♂, 780m, Dianzos valley, 2 km NE, Ag. Nikolaos, 25.IV.2002/St.17, 34.52N/32.47N, maquis, Merz, Deeming, Ebejer & Gatt/St.17 legerunt (MHNG). – TURKEY: 1 ♀, Antalia Prov., 900m, Termessos, 25Km NW Antalya, 1.V.2000, Merz & Senay legerunt (MHNG).

REMARKS: Palpus yellow, first antennomere partially yellow. Body grey, rarely grey-yellowish, both sexes with abdominal spots (Collin, 1966; Tanasijtshuk, 1986; Beschovski, 1995).



FIGS 15-20

Chamaemyia aridella (Fallén) (2.2-2.8 mm). (15) Male from Italy (Sicily), habitus in lateral view. (16-20) Variability in shape of male terminalia, in lateral view from two localities in Italy. (16-17) Sicily, Piano Provenzana, 9.VI.1999, 1800m. (18-20) Puglia, Mte. Gargano, 5km E S. Giovanni, 26.VII.1995, 650m, (16, 18) Aedeagus, (19) Same aedeagus as in Fig. 18, slightly different preparation, (17, 20) Gonite.

***Leucopis (Leucopis) argentata* Heeger, 1848**

MATERIAL EXAMINED: ITALY, Lombardia, 1♂, 50m, Mantova pr., Marmirolo, Bosco della Fontana, 25.V.2001, 45.12N/10.45E, Merz & Mason legerunt (MHNG). – Lazio*, 1♂, 20m, Roma, E S. Severa, Rio Fiume, 3.IX. 2004/11, 42.05N/12.05E, sulphurous spring, Betula, Merz, Cerretti & Nardi/11 legerunt (MHNG). – Sardinia*, 1♂, 0m, Dorgali reg., Cala Luna (S of Cala Gonone)/St.9, 17.VI.2002, 40.13.27N/9.37.36E. B. Merz & M. Eggenberger/9 legerunt (CDSL). – 2♂♂, 0m, Bosa Region, Bosa Marina, 20.VI.2002/St.13, 40.17.15N 8.29.04E, B. Merz & M. Eggenberger/13 legerunt (MHNG). – Sicily, 5♂♂, 870m, Randazzo/Lago di Gurridda, 11.VI.1999, B. Merz legit (MHNG: 2♂♂; CDSL: 3♂♂). – MALTA, 6♂♂, 0m, Salina Bay, 35.57N/14.25E, 2.V.2001, B. Merz legit (MHNG: 4♂♂; CDSL: 2♂♂). – 3♂♂, 0m, Salina Bay, 7.V.2002, B. Merz legit (MHNG).

***Leucopis (Leucopis) auraria* Tanasijtshuk, 1961**

MATERIAL EXAMINED: MALTA, 1♂, Buskett Gardens, 14.VI. 1999, B. Merz legit (MHNG). – 1♂, Malta-Gozo, Ghasri, Sara valley, 3.V.2002, B. Merz legit (MHNG). – 2♂♂, Fiddien 130 m, 5.V.2002, B. Merz legit (MHNG: 1♂; CDSL: 1♂).

***Leucopis (Leucopis) glyphinivora* Tanasijtshuk, 1958**

MATERIAL EXAMINED: ITALY, Lazio, Rome, 2♂♂, 1♀, Castel Porziano, 10m, Strada del Telefono, 30.VIII.2004/1, 41.41N/12.23E, dry forest, riverbed, Merz, Cerretti & Nardi/1 legerunt (MHNG: 2♂♂; CDSL: 1♀). – 1♂, Latina, 20m, P.N. Circeo, S. Felice, Quarto Freddo, 1.IX.2004/7, 41.41N/13.03E, pasture, shrubs, Merz, Cerretti & Nardi/7 legerunt (MHNG). – Sardinia, 1♂, Bosa region 0m, Bosa Marina, 20.VI.2002/St.13, 40.17.15N/8.29.04E, B. Merz & M. Eggenberger/13 legerunt (MHNG). – 1♂, Cuglieri reg., 1000m, Mt.Ferru-Mt. Urtigu/St.15, 21.VI.2002, 40.09.29N/8.37.44E, B. Merz & M. Eggenberger/15 legerunt (MHNG). – Sicily, 1♂, Etna 1000m, 3Km NW Milo, 5.VI.1999, B. Merz legit (MHNG). – MALTA, 1♂, Buskett Gardens, 150 m, 35.52N/14.24E, 3.V.2001, B. Merz legit (MHNG). – 1♂, Malta-Gozo, Ghasri, Sara valley, 3.V.2002, B. Merz legit (MHNG).

***Leucopis (Leucopis) revisenda* Tanasijtshuk, 1970**

MATERIAL EXAMINED: MALTA, 1♂, Gozo, Ramla Bay, 16.VI.1999, B. Merz legit (MHNG).

***Leucopis (Leucopis) rufithorax* Tanasijtshuk, 1958**

MATERIAL EXAMINED: ITALY, Lazio, Rome, 1♂, Castel Porziano, 10m, Strada del Telefono, 30.VIII.2004/1, 41.41N/12.23E, dry forest, riverbed, Merz, Cerretti & Nardi/1 legerunt (MHNG). – MALTA*, 1♂, Buskett Gardens, 14.VI. 1999, B. Merz legit (MHNG). – 1♂, Malta-Gozo, Mgarr-ix-Xini, 36.01/14.17E, 5.V.2001, B. Merz legit (CDSL). – 1♂, Fiddien 130 m, 5.V.2002, B. Merz legit (MHNG).

***Leucopis (Leucopomyia) alticeps* Czerny, 1936**

MATERIAL EXAMINED: ITALY, Sardinia*, 1♂, Cagliari reg. 1000m, Mt. Ferru, Mt. Urtigu/St.15, 21.VI.2002, 40.09.29N/8.37.44E, B. Merz & M. Eggenberger/15 legerunt (MHNG).

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