Boll. Mus. reg. Sci. nat. Torino	Vol. 24 - N. 1	pp. 121-158	28-2-2007

Daniele SOMMAGGIO *

Revision of Diptera Syrphidae in Bellardi's Collection, Turin

ABSTRACT

Bellardi's collection preserved in Natural History Museum in Turin held several Diptera species collected during second half of 19th century in the north-western Italy. 255 species of Syrphidae are present in the collection. 8 species have been recorded for the first time in Italy and must be added to Italian checklist. More than 150 species, including four new records for Italy, have been collected in the surroundings of Turin and this gave interesting information about the environmental condition of this area in the 19th century.

Key words: Insecta, Diptera, Syrphidae, Bellardi's collection, Taxonomic revision.

INTRODUCTION

During the 19th century Luigi Bellardi (1818-1889) made several entomological collections from north-western Italy. He was mainly interested in Gasteropoda (Mollusca) and his scientific output was very important in the study of gasteropods from north-western Italy, particularly its paleontological aspects. In entomology he was especially interested in Diptera and his work mainly focused on Diptera from Mexico (Bellardi, 1859-1861). He collected several Diptera from Piedmont in the middle of the 19th century, and his entomological collection was very much appreciated during that time. C. Rondani (1857), in his basic work on Italian Diptera,

* Biostudio, Velo d'Astico.

remembered Bellardi, who sent him some interesting specimens from the Piedmont region. Probably Rondani never had the opportunity to study the Bellardi collection, but he paid great attention to the material coming from Piedmont, describing some new species based on specimens received from Bellardi. In two cases (*Merodon bulborum* and *M. montanus*) Rondani (1857) quoted only material from Bellardi. In both cases no specimens are preserved in Bellardi's collection. Other species were described by Rondani (1857) based on material received from both Bellardi and other entomologists: for example *Merodon tuberculatus*, *M. submetallus*, *M. subfasciatus*, *Cheilosia subalpina*, *Eristalis saltuum*, *Epistrophe bellardii*, *Xanthogramma dives*. Only the last three species are present in Bellardi's collection. Four species were recorded by Rondani (1857) as new, following the description that Bellardi sent him. Rondani (1857) nominated Bellardi as the author of these four species: *Ch. pedemontana*, *Eumerus alpinus*, *E. bicolor* and *Merodon pudicus*.

At the end of the 19th century, E. Giglio Tos, curator at the Natural History Museum in Turin, had the opportunity of studying the Bellardi's collection, resulting in, for example several papers on Diptera from Mexico (e.g. Giglio Tos 1892, 1893) and the revision of the genus *Chrysotoxum* (Giglio Tos, 1890).

During the 20th century Bellardi's collection received almost no attention, with one or two exceptions (Gori, 1999). Recently I had the opportunity to examine the species of Syrphidae preserved in Bellardi's collection in order to revise the *Chrysotoxum* species described by Giglio Tos (Sommaggio, 2000). In Bellardi's collection Syrphidae are well represented: 14 small entomological boxes contain more than 1500 specimens belonging to 255 species. The study of old collections is very important not only for historical reasons, but also to improve our knowledge about the distribution of species. In addition we can obtain a large amount of information on the environmental conditions of the past, and this is particularly evident for good bioindicator groups such as the Syrphidae.

THE TYPE MATERIAL

Rondani (1857) described four new species based on the description received by Bellardi. Actually only *Cheilosia pedemontana* is considered as a good species whereas the other three are junior synonyms.

- *Cheilosia pedemontana:* Bellardi sent a female to Rondani together with the description of the new species. Claussen and Thompson (1996) designed the specimen in Rondani's collection as the holotype. Four specimens in Bellardi's collection have been named as *Ch. pedemontana* by Bellardi, but all belong to *Ch. derasa* Loew, 1857.
- *Eumerus alpinus*: this is a junior synonym of *E. olivaceus* Loew, 1848

(Peck, 1988). Two males are preserved in Rondani's collection in Florence: seven additional specimens are present in Bellardi's collection, which have been labelled as syntypes. One male in Rondani's collection is without its head.

- *Eumerus bicolor*: this is a junior synonym of *E. ovatus* Loew, 1848 (Peck, 1988). Rondani recorded that the types are in Bellardi's collection and in fact no specimens are preserved in Rondani's collection in Florence. Seven specimens are present in Bellardi's collection, all considered to be syntypes.
- *Merodon pudicus* is a junior synonym of *M. cinereus* (Fabricius, 1794) (Peck, 1988). Only one specimen is preserved in Bellardi's collection and it differs from the general desription of *M. cinereus* because of the absence of black hairs on the fourth tergite. This is a variable feature in *M. cinereus*: they can range from almost completely black haired to the black hairs reduced to small patches on the anterior margin. The male genitalia confirm the synonymy of *M. pudicus* with *M. cinereus*. Only one male is preserved in Rondani's collection, but this is in bad condition: the head is partly destroyed, only a small part of the abdomen is conserved and no genitalia are present.

In Bellardi's collection the *Chrysotoxum* types are also present as described by Giglio Tos (1890). Information on these specimens has been detailed in another paper (Sommaggio, 2000).

SPECIES LIST

The Bellardi's collection is preserved in small entomological boxes (18 x 26 cm). Each box is marked with a label: "Ditteri piemontesi. Bellardi dono", followed by a number: the boxes of Syrphidae are numbered from 45 to 58. In each box the specimens are placed in four colomns (Figs. 1, 2); a label with the species name is on the floor of the box. Most specimens also have a hand-written label. Unfortunately this label has very poor information: only the locality is mentioned, with no other data recorded. In some cases the localities are sufficiently detailed, for example Stupinigi or Moncalieri park near Turin; but in other cases the information is generic, for example "Alps". All specimens are pinned and generally well preserved.

The specimens have been left in their exact original position; a new label with the species' name has been added only when it differs from the one indicated on the original label.

In the following list, the species are listed in alphabetic order. After each current name, the following is indicated:

- the name found in Bellardi's collection, when present. In several cases Bellardi did not identify the specimens but only placed them inside the presumed genus;

- the number of males and females;
- the label with the locality indication, when present;
- the boxes where the specimens are kept.

For some of the species there is a small comment regarding our knowledge of their distribution in Italy. The species with an asterisk are currently not recorded as present in Italy (Belcari *et al.*, 1995; Daccordi & Sommaggio, 2002).

1) Anasimyia lineata (Fabricius, 1787)
3F, identified as *Helophilus lineatus*, Ivrea, box 48

2) Arctophila bombiformis (Fallén, 1810)
4M, 1F, identified as *A. bombiformis*, Alps, box 52

3) Baccha elongata (Fabricius, 1775)
1M, 4F, identified as *B. elongata*, Turin, box 52
2M, identified as *B. obscuripennis* Meigen, 1822, Valdieri, box 52
2M, identified as *B.* sp., Turin, box 52
Baccha elongata and *B. obscuripennis* have usually been considered as separated species untill recently (e.g. Peck, 1988). However the difference between the two species is not clear

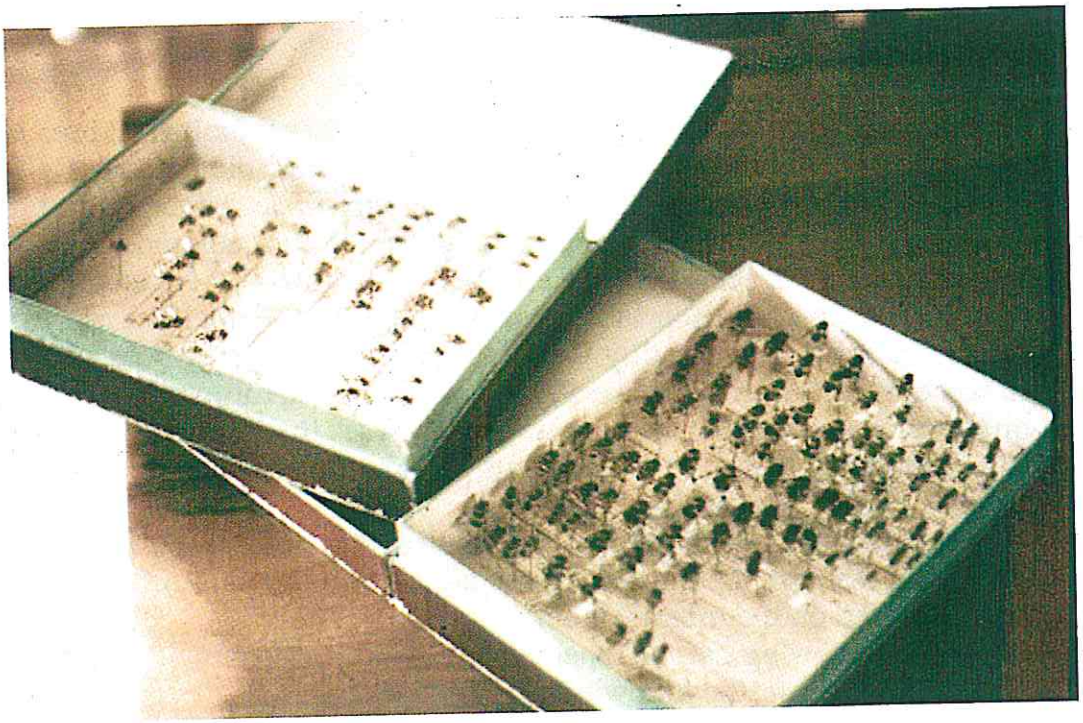

Fig. 1 - Two boxes in Bellardi's collection.

and many authors (Speight, 2004) prefer to consider *B. oscuripennis* Meigen, 1822 as synonym of *B. elongata*.

4) Blera fallax (Linné, 1758)
4M, 3F, identified as *Criorhina fallax*, Alps, box 55

5) Brachyopa bicolor (Fallén, 1817)
1M, 1F, identified as *B. bicolor*, Turin, box 52

**6) Brachyopa insensilis* Collin, 1939
1M, identified as *B. bicolor*, Turin, box 52
This species is rare, it is usually found in overmature deciduous and coniferous forests. *B. insensilis* is not included in Italian checklist (Belcari *et al.*, 1995; Daccordi & Sommaggio, 2002); recently I collected this species in two woods neas Ferrara in Padania plain.

7) Brachyopa maculipennis Thompson, 1980
4M, 4F, identified as *B. arcuata* (Panzer, 1798), Turin, box 52
Rare species, only found in mature deciduous and alluvial forests which have notably disappeared from northern Italy and Europe in general. This species is actually known from central Europe but is only rarely found here; for example Speight (2004) assumed that it is extinct in northern Germany. Recent faunistic studies in northern Italy were not able to record this species. In Bellardi's collection the species is well represented and collected from around Turin, indicating that the species was less rare than today.

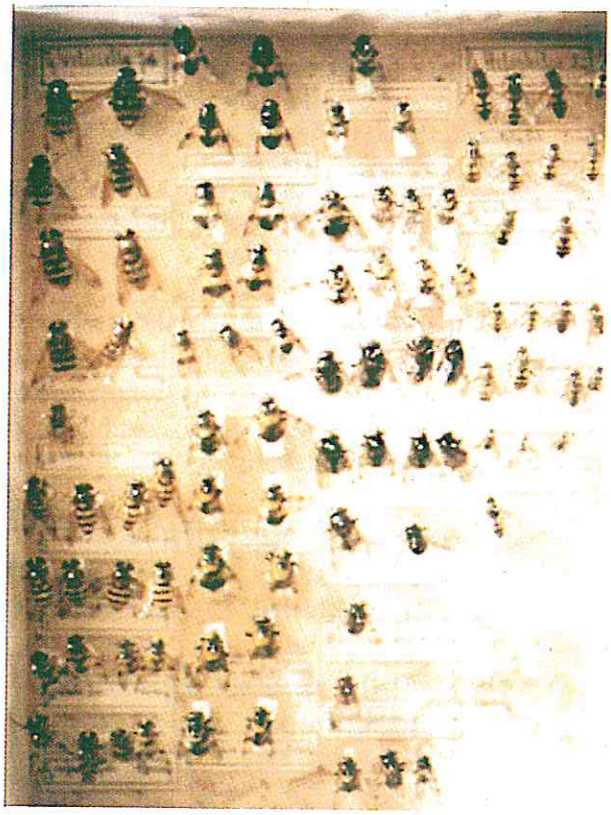

Fig. 2 - Box 48 in Bellardi's collection.

8) Brachyopa scutellaris Robineau-Desvoidy, 1843
1M, identified as *Brachyopa bicolor*, Turin, box 52
Rare species usually found in mature alluvial forests, such as *Acer*, *Alnus*, *Fraxinus*. Only recently added to the list of Italian species (Daccordi & Sommaggio, 2002), it has been recorded from some deciduous woods in the north-eastern Padania plain, probably connected with remnants of alluvial forests.

9) Brachypalpoides lentus (Meigen, 1822)
4M, 4F, identified as *Xylota lenta*, Turin, box 53.

10) Brachypalpus chrysites Egger, 1859
1M, identified as *B. tuberculatus* Macquart, 1829, Stupinigi, box 55.
This is a rare species, strongly associated with overmature coniferous forests; it is usually found from the upper limit of *Fagus*. The presence of this species in Stupinigi Park, 5 km south of Turin city, may reflect the peculiarity of this area, with its very old, unnatural coniferous woodland. The species has been described as present in northern Italy, but is found in only a very few places.

11) Brachypalpus laphriformis (Fallén, 1816)
3M, identified as *B. valgus* (Panzer, 1798), Turin, box 55
4F, identified as *B. valgus*, Alps, box 55
4M, identified as *B. valgus* var., Turin, box 55
1M, identified as *Brachypalpus* sp., Turin. Bellardi failed to identify this specimen, which is unusual due to its yellow abdomen, with two black spots on the anterior margin of II, III and IV tergites. All other features confirm that this specimen is *B. laphriformis*, including the male genitalia.
This species was considered as synonym of *B. valgus* in the checklist of Italian species (Belcari *et al.*, 1995), following Andersson (1988). Here I have adopted the nomenclature used in Peck (1988) and Speight (2004), that considers *B. laphriformis* and *B. valgus* as different species. *B. laphriformis* has been recorded in Italy only from a few localities in the Appenines and eastern Alps. This is a well-represented species in Bellardi's collection, suggesting that it was not rare in the past. It is usually associated with mature deciduous forests, mainly *Fagus* and *Quercus*.

12) Brachypalpus valgus (Panzer, 1798)
3M, 3F, identified as *B. femoratus* (Linné, 1758), Turin, box 55
4M, 2F, identified as *B. femoratus* var., Turin, box 55
The biology of this species is similiar to the previous one; in Italy it seems to prefer lowland areas whereas *B. laphriformis* is usually present in the mountains.

13) Caliprobola speciosa (Rossi, 1790)
3M, identified as *C. speciosa*, Turin, box 58
3F, identified as *C. speciosa*, Viù, box 58

14) Callicera rufa Schummel, 1842
1F, identified as *C. macquarti* Rondani, 1844, Nice, box 45
Speight (1991) recently provided the means to separate correctly *C. rufa* from the similar *C. macquarti* and *C. fagesii* Guerin-Ménéville, 1844. Due to recent confusion between the species, the distribution of each taxon is not clear. Actually *C. rufa* is known only from Scot-

land, the Netherlands, Germany, continental France and Corsicae; the present record from Nice confirms the presence of this species in south France. This is a rare species associated with overmature *Pinus sylvestris* forests.

15) Ceriana conopsoides (Linné, 1758)
1M, 3F, identified as *Ceria conopsoides*, Turin, box 58

16) Chalcosyrphus nemorum (Fabricius, 1805)
1M, identified as *Xylota florum* (Fabricius, 1805), Villastellone, box 53

17) Chalcosyrphus valgus (Gmelin, 1790)
2M, 3F, identified as *Xylota femorata* (Linné, 1758), Turin, box 53
C. valgus is a rare species, usually found in overmature deciduous forests, in particular *Fagus* and *Quercus*. It is currently known to be present in central Europe, where it is probably threatened with extinction (Speight, 2004) due to its exacting environmental requirements. It has been described as present in northern Italy, but it is only known from very scattered records.

18) Cheilosia aerea Dufour, 1848
1M, 2F, identified as *Cheilosia* sp., Turin, box 57
This is a problematic species: in recent literature it has been known as *C. zetterstedti* (Becker, 1894) untill the publication by Claussen & Thompson (1996). It is very similar to the more common *C. proxima* (Zetterstedt, 1843) and many existing keys failed to separate the two taxa correctly; Vujić (1994) made it possible to separate this species from similar species in the *proxima* group. Its presence in northern Italy is known from only a few records.

19) Cheilosia albipila Meigen, 1838
1F, identified as *C. flavipes* (Panzer, 1798), Turin, box 56

20) Cheilosia barbata Loew, 1857
1M, identified as *Cheilosia* sp., Alps, box 57
1M, 3F, identified as *Cheilosia* sp., Turin, box 57
4 M, identified as *Cheilosia* sp., Pesio, box 57
1F, identified as *Cheilosia* sp., Moncenisio, box 57

21) Cheilosia bracusi Vujić & Claussen, 1994
2F, identified as *C. phantoma* (Zetterstedt, 1838), Alps, box 57

22) Cheilosia caerulescens (Meigen, 1822)
2M, 3F, identified as *C. tarsata* Macquart, 1838, Moncenisio, box 56
3F, identified as *C. tarsata*, Valdieri, box 56

23) Cheilosia canicularis (Panzer, 1801)
4M, 4F, identified as *C. aurata* (Fabricius, 1805), Alps, box 56
2M, identified as *C. aurata* var., Alps, box 56
1M, identified as *C. flavicornis* (Fabricius, 1781), Alps, box 56

24) Cheilosia chrysocoma (Meigen, 1822)
4M, identified as *C. chrysocoma*, Turin, box 56
1M, identified as *Cheilosia* sp., Alps, box 56

25) Cheilosia derasa Loew, 1857
1M, identified as *Melanogaster viduata* (Linné, 1758), Turin, box 56
4F, identified as *C. pedemontana* Rondani, 1857, Alps, box 5
1M, 1F, identified as *Cheilosia* sp., box 56

26) Cheilosia flavipes (Panzer, 1798)
2F, identified as *C. gilvipes* (Zetterstedt, 1843), Alps, box 56

27) Cheilosia grossa (Fallén, 1817)
4M, identified as *C. grossa*, Turin, box 56
4F, identified as *C. grossa*, Borgomaria, box 56
1M, identified as *C. grossa* var., Turin, box 56

28) Cheilosia hypena (Becker, 1894)
2M, identified as *Cheilosia* sp., Gressonay, France, box 57.
4F, identified as *Cheilosia* sp., Piramid Vincent, France, box 57
This was a problematic species until recently (Verlinden, 1999b) and the real distribution of *C. hypena* is currently not clear due to confusion with other *Cheilosia* species.

29) Cheilosia illustrata (Harris, 1780)
4M, 1F, identified as *C. oestracea* (Linné, 1758), Alps, box 56
2F, identified as *C. oestracea*, Moncenisio, box 56

30) Cheilosia impressa Loew, 1840
4M, 4F, identified as *C. caemeteriorum* (Linné, 1758), Turin, box 56

31) Cheilosia laticornis Rondani, 1857
3M, identified as *C. latifrons* (Zetterstedt, 1843), Alps, box 57

32) Cheilosia latifrons (Zetterstedt, 1843)
1F, identified as *Cheilosia* sp., Ivrea, box 57
1F, identified as *Cheilosia* sp., Turin, box 57

33) Cheilosia lenis (Becker, 1894)
1M, identified as *Cheilosia* sp., Turin

34) Cheilosia longula (Zetterstedt, 1838)
1M, identified as *C. longula*, Alps, box 57
1F, identified as *Cheilosia sp.*, Turin, box 57

35) Cheilosia melanura (Becker, 1894)
2M, identified as *C. phantoma*, Alps, box 57
1M, 1F, identified as *Cheilosia* sp., V. S. Martino, box 57
1M, 1F, identified as *Cheilosia* sp., Turin, box 57
2M, identified as *Cheilosia* sp., Maritime Alps, box 57
1M, identified as *Cheilosia* sp., box 57

36) Cheilosia mutabilis (Fallén, 1817)
2M, identified as *Cheilosia* sp., Mandria, box 57
2F, identified as *Cheilosia* sp., Viù, box 57
1M, 1F, identified as *Cheilosia* sp., Turin, box 57

37) Cheilosia nigripes (Meigen, 1822)
3F, identified as *C. pubera* (Zetterstedt, 1838), Alps, box 56
1F, identified as *Cheilosia* sp., box 56

38) Cheilosia pagana (Meigen, 1822)
4M, 4F, identified as *C. means* (Fabricius, 1798), Turin, box 56

39) Cheilosia pedemontana Rondani, 1857
1F, identified as *C. caemeteriorum* (Linné, 1758), Turin, box 56

40) Cheilosia personata Loew, 1857
2M, 4F, *C. megarhynca* Bellardi, Alps, box56
These specimens were labelled as *C. megarhynca* Bellardi. This means that Bellardi thought he had found a new species to describe. No important differences are present between these specimens and those belonging to *Ch. personata*.

41) Cheilosia pictipennis Egger, 1860
2M, 1F, *C. flavicornis*, Alps, box 56

42) Cheilosia pilifer (Becker, 1894)
1M, identified as *C. pubera*, Alps, box 56

43) Cheilosia proxima (Zetterstedt, 1843)
1M, identified as *Cheilosia* sp., Turin, box 57

44) Cheilosia ranunculi Doczkal, 2000
3M, identified as *C. flavimana* Meigen, 1838, Turin, box 56
This species has been separated from the similar *C. albitarsis* only recently (Doczkal, 2000). Probably *C. ranunculi* is more common in Italy than *C. albitarsis*, as confirmed by recent records (e.g.: Doczkal, 2000; Birtele *et al.*, 2002; Delmastro & Sommaggio, 2003).

45) Cheilosia soror (Zetterstedt, 1843)
4M, 4F, identified as *C. scutellata* (Fallén, 1817), Turin, box 56

46) Cheilosia urbana (Meigen, 1822)
3M, 1F, identified as *Cheilosia* sp., Bra, box 57
1F, identified as *Cheilosia* sp., Cigliano, box 57
1F, identified as *Cheilosia* sp., Stupinigi, box 57

47) Cheilosia variabilis (Panzer, 1798)
4M, 4F, identified as *C. variabilis*, Alps, box 56

48) Cheilosia vernalis (Fallén, 1817)
1M, identified as *Cheilosia* sp., Turin, box 57

49) Cheilosia vicina (Zetterstedt, 1849)
1M, identified as *C. pubera*, Alps, box 56

50) Cheilosia vulpina (Meigen, 1822)
1M, identified as *Cheilosia* sp., Alps, box 57
2F, identified as *Cheilosia* sp., Valdieri, box 57

51) Chrysogaster basalis Loew, 1857
1F, identified as *Melanogaster cemiteriorum* (Linné, 1758), Turin, box 56
1M, identified as *Melanogaster chalybeatus* (Meigen, 1822), Turin, box 56
1F, not identified, box 56

52) Chrysogaster solstitialis (Fallén, 1817)
4M, 2F, identified as *Melanogaster cemiteriorum*, Turin, box 56
2F, identified as *Melanogaster* sp., box 56

53) Chrysotoxum arcuatum (Linné, 1758)
3M, 3F, identified as *C. hortense* Meigen, 1822, box 45
In accordance with ICZN (2001) the author adopts here the nomenclature in use before Thompson *et al.* (1982).

54) Chrysotoxum bicinctum (Linné, 1758)
4M, 4F, identified as *C. bicinctum*, Turin, box 45

55) Chrysotoxum cautum (Harris, 1776)
4F, identified as *C. sylvarum* Wiedemann in Meigen, 1822, Turin, box 45
2M, identified as *Chrysotoxum* sp., box 45

56) Chrysotoxum cisalpinum Rondani, 1845
2M, identified as *C. cisalpinum*, Maritime Alps, box 45
This species is well distributed on the Mediterranean coast and through the Caucasus to Tadjkistan and Uzbekistan. In Italy it is not rare, at least in the central and southern part of the country, but in the north it is rare and usually limited to xerothermic areas.

57) Chrysotoxum elegans Loew, 1841
1M, identified as *C. elegans*, Alps, box 45
1F, identified as *C. elegans*, Ivrea, box 45
2F, identified as *C. elegans* and later *C. bigoti* Giglio Tos, 1890, box 45

58) Chrysotoxum fasciolatum (De Geer, 1776)
3M, 3F, identified as *C. fasciolatum*, Alps, box 45

59) Chrysotoxum festivum (Linné, 1758)
2M, identified as *C. arcuatum* and later *C. festivum* var. *tomentosa* Giglio Tos, 1890, Turin, box 45
2M, 4F, identified as *C. arcuatum* and later *C. festivum*, Turin, box 45
In accordance with ICZN (2001) the author adopts here the nomenclature in use before Thompson *et al.* (1982).

60) Chrysotoxum intermedium Meigen, 1822
1M, identified as *C. cisalpinum* and later *C. italicum* Rondani, 1845, Maritime Alps, box 45
1M, 2F, identified as *C. italicum* and later *C. lessonae* var. *affinis* Giglio Tos, 1890, Valdieri, box 45
3M, 1F, identified as *C. italicum*, Valdieri, box 45
1F, identified as *C. italicum* and later *C. lessonae* var. *hyalipennis* Giglio Tos, 1890, box 45

61) Chrysotoxum octomaculatum Curtis, 1837
3M, 3F, identified as *C. octomaculatum*, Turin, box 45

62) Chysotxum vernale Loew, 1841
6F, identified as *C. vernale*, box 45
3M, identified as *C. vernale*, Alps, box 45
1M, 2F, identified as *C. vernale* and later *C. lineare* Zetterstedt, 1819, Alps, box 45
3M, 3F, identified as *C. fuscum* Giglio Tos, 1890, Alps, box 45
1M, identified as *C. vernale* and later *C. fuscum* var. *vernaloides* Giglio Tos, 1890, Alps, box 45
2M, identified as *C. elegans* and later *C. fuscum* var. *vernaloides*, Alps, box 45

63) Chrysotoxum verralli Collin, 1940
1M, 1F, identified as *C. octomaculatum* and later *C. bigoti*, Turin, box 45

64) Criorhina asilica (Fallén, 1816)
2M, 5F, identified as *C. asilica*, Turin, box 55
1M, identified as *Criorhina* sp., box 55

This is a rare species, associated with deciduous forests with overmature trees. In Italy it is only known in the Alps and from very scattered records, probably due to its strict environmental requirements.

65) Criorhina berberina (Fabricius, 1805)
1M, 1F, identified as *C. berberina*, Alps, box 55
2M, identified as *C. brebissoni* (Macquart, 1829), Viù, box 55
4F, identified as *C. brebissoni*, Alps, box 55
1M, 4F, identified as *C. oxyacanthae* (Meigen, 1822), Turin, box 55

66) Criorhina floccosa (Meigen, 1822)
3M, identified as *C. floccosa*, Turin, box 55
1F, identified as *Criorhina* sp., Turin, box 55
C. floccosa can be found in *Fagus* and *Quercus* forests, with overmature trees. In Italy it is only known in the north where it is very rare due to its strict environmental requirements.

**67) Criorhina pachymera* (Egger, 1858)
4M, 1F, identified as *Criorhina* sp., Turin, box 55
1F, identified as *Criorhina* sp., bo 55
This is the first italian record of this rare species. *C. pachymera* is strongly associated with humid *Fagus* and *Quercus* forest, with overmature plants. It can also be found in alluvial *Populus* forests (Speight, 2004). In Bellardi's collection this species is well represented and found in the environs of Turin. Recent faunistic researches in the Padania plain failed to find this species (Birtele *et al.*, 2002). It is not clear if *C. pachymera* has disappeared from Italy due to habitat loss or if it has not been collected due to the poor level of faunistic research in Italy on the Syrphidae.

68) Criorhina ranunculi (Panzer, 1804)
3M, 2F, identified as *C. ranunculi*, Stupinigi, box 55

69) Dasysyrphus albostriatus (Fallén, 1817)
1M, 1F, identified as *Lasiophthicus albostriatus*, Genoa, box 49

70) Dasysyrphus friuliensis (Van der Goot, 1960)
4M, 1F, identified as *Lasiophthicus* sp., Alps, box 49

71) Dasysyrphus hilaris (Zetterstedt, 1843)
1F, identified as *Lasiophthicus* sp., Alps, box 49

72) Dasysyrphus pauxillus (Williston, 1887)
1F, identified as *Lasiophthicus* sp., Alps, box 49
D. pauxillus has been added to the Italian checklist only recently (Daccordi & Sommaggio, 2002). Currently it is only known in the Alps, where it seems to be rare. This record confirms the presence of this species also in the western areas of the Alps.

73) Dasysyrphus pinastri (De Geer, 1776)
1F, identified as *Lasiophthicus* sp., Alps, box 49

74) Dasysyrphus venustus (Meigen, 1822)
3F, identified as *Lasiophthicus* sp., box 49

75) Didea alneti (Fallén, 1817)
2F, identified as *D. alneti*, V. S. Martino, box 50

76) Didea erratica (Linné, 1758)
1M, identified as *Syrphus* sp., Alps, box 50
2M, identified as *Lasiophthicus*, Alps, box 49

77) Didea fasciata Macquart, 1834
3M, 4F, identified as *D. fasciata*, Stupinigi, box 50

78) Didea intermedia Loew, 1854
4M, identified as *D. alneti*, V. S. Martino, box 50

79) Doros profuges (Harris, 1780)
3M, identified as *D. conopseus* (Fabricius, 1775), Turin, box 51
3F, identified as *D. conopseus*, Valdivieri, box 51
A Palaearctic species associated with deciduous ovemature forests. In Italy it is known in the Alps and Appenines, but in very few localities. In Bellardi's collection it is well represented and it seems to have been collected both in the surroundings of Turin and in the Maritime Alps (Valdieri). Probably in the past this species was far more common than today.

80) Epistrophe diaphana (Zetterstedt, 1843)
2M, identified as *Syrphus diaphanus*, Biella, box 49
1M, identified as *Syrphus* sp., Alagna, box 49
1F, identified as *Syrphus* sp., V. S. Martino, box 49
1F, identified as *Syrphus* sp., V. Formazza, box 49
4M, identified as *Syrphus* sp., box 49
The adults of this species can be found in deciduous, usually humid, forests. It is not common in Italy, where it has been recorded from a few localities in the Alps and Appenines. In Bellardi's collection, as in Bezzi's one, there are several specimens of *E. diaphana* from different localities. It seems that in the past this species was far more common than today.

81) Epistrophe eligans (Harris, 1780)
2M, 4F, identified as *Syrphus bifasciatus* (Fabricius, 1794), Turin, box 49

82) Epistrophe glossulaviae (Meigen, 1822)
2M, 3F, identified as *Syrphus glossulaviae*, Turin, box 49
1M, identified as *Syrphus nitidicollis*, Torino

83) Epistrophe leiophthalma (Schiner et Egger, 1853)
2M, 1F, identified as *Lasiophthicus bellardii* Rondani, 1857, Finestrelle, box 49

1M, identified as *Lasiophthicus* sp., box 49
E. leiophthalma is a rare species, to date only known to be present in the mountainous areas in Europe (e.g. Alps, Pyrenees, Ardennes) and Caucasus. In Italy it has only been recorded in a few areas in the Alps.

84) Epistrophe melanostoma (Zetterstedt, 1843)
2F, identified as *Syrphus* sp., V. Formazza, box 49

85) Epistrophe nitidicollis (Meigen, 1822)
3M, 3F, identified as *Syrphus nitidicollis*, Turin, box 49
1F, identified as *Syrphus* sp., V. Formazza, box 49

86) Epistrophella euchroma (Kowarz, 1885)
2M, identified as *Syrphus decorus* Meigen, 1822, Stupinigi, box 50
1F, identified as *Syrphus decorus*, Turin, box 50
1M, identified as *Syrphus* sp., V. Formazza, box 50
1M, identified as *Syrphus* sp., box 50

87) Episyrphus balteatus (De Geer, 1776)
7M, 1F, identified as *Syrphus balteatus*, Turin, box 50

88) Eristalinus aeneus (Scopoli, 1763)
4M, 2F, identified as *Eristalomyia aenea*, Turin, box 47

89) Eristalinus sepulchralis (Linné, 1758)
4M, 4F, identified as *E. sepulchralis*, Turin, box 47

90) Eristalinus taeniops (Wiedemann, 1818)
1M, identified as *Eristalis pulchriceps* (Wiedemann in Meigen, 1822), Pompei, box 47

91) Eristalis alpina (Panzer, 1798)
2F, identified as *E. rupium* (Fabricius, 1805), Alps, box 47
4M, identified as *Eristalis* sp., Alps, box 47

92) Eristalis arbustorum (Linné, 1758)
7M, 7F, identified as *E. arbustorum*, Turin, box 47

93) Eristalis interrupta (Poda, 1761)
5M, 5F, identified as *E. nemorum* (Linné, 1758), Turin, box 47

94) Eristalis jugorum Egger, 1858
2M, 2F, identified as *E. horticola* (De Geer, 1776), Alps, box 47
1M, identified as *E. nemorum*, Turin, box 47
In this specimen the face is completely black and following Hippa *et al.* (2001) it keys

out to *E. picea* (Fallén, 1817), but according to its other features (male genitalia, elongated face, black hairs on anterior femora) this is a specimen of *E. jugorum*.

1M, 2F, identified as *Eristalis* sp.

95) Eristalis lineata (Harris, 1776)

1M, identified as *E. horticola* (De Geer, 1776), Alps, box 47
1M, 1F, identified as *E. nemorum*, Turin, box 47
2M, identified as *Eristalis* sp., Mandria, box 47
Here the author has followed the nomenclature suggested by Hippa *et al.* (2001).

96) Eristalis pertinax (Scopoli, 1763)

4M, 2F, identified as *E. similis* (Fallén, 1817), Alps, box 47
1M, 1F, identified as *E. tenax* var., Turin, box 47
4M, identified as *Eristalis* sp., Alps, box 47

97) Eristalis rupium Fabricius, 1805

3M, 3F, identified as *E. rupium*, Alps, box 47
2F, identified as *E. rupium* var., Alps, box
1F, identified as *E. nemorum*, Turin, box 47
3M, identified as *E. saltuum* Rondani, 1857, Alps, box 47
2M, identified as *Eristalis* sp., Graglia, box 47

98) Eristalis similis (Fallén, 1817)

1F, identified as *E. similis*, Alps, box 47
3M, 2F, identified as *E. pratorum* Meigen, 1822, Alps, box 47
1M, identified as *Eristalis* sp., box 47

99) Eristalis tenax (Linné, 1758)

4M, 4F, identified as *Eristalomyia tenax*, Turin, box 47
3M, 2F, identified as *Eristalomyia tenax* var., Turin, box 47

100) Eumerus amoenus Loew, 1848

3M, 2F, identified as *E. strigatus* (Fallén, 1817), Turin, box 53
1F, identified as *Eumerus* sp., Marconiggio, box 53

**101) Eumeurs consimilis* Šimić & Vujić, 1996

2M, identified as *E. grandicornis* Meigen, 1822, Lanzo, box 53
This is the first record for this species in Italy, recently separated by the similar *E. sogdianus* Stackelberg, 1952. The two males in Bellardi's collection are not well preserved: one is without its head, the second without antennae. Comparing the male genitalia and in particular the 4th sternite, it was possible to identify the two males as *E. consimilis*. This species can be found in alluvial forests. To date only known from France and Croatia, its presence in Italy might have been predicted.

102) Eumerus flavitarsis Zetterstedt, 1843

2M, identified as *E. exilipes* Rondani, 1850, Turin, box 53

1M, identified as *Eumerus* sp., box 53

103) Eumerus funeralis Meigen, 1822
1M, identified as *E. grandicornis*, Lanzo, box 53
1F, identified as *E. grandicornis*, Alps, box 53
1M, identified as *Eumerus* sp., Villastellone, box 53
1F, identified as *Eumerus*, Casalette, box 53
This is a common species, usually recorded in literature under the name of *E. tuberculatus*, Rondani 1857. Speight *et al.* (1998) reinstated *E. funeralis* as the correct name.

104) Eumerus olivaceus Loew, 1848
4M, 3F, identified as *E. alpinus*, Alps, box 53

105) Eumerus ornatus Meigen, 1822
4M, 2F, identified as *E. ornatus*, Turin, box 53
1F, identified as *E. exilipes*, Turin, box 53
1F, identified as *Eumerus* sp., Marconiggio, box 53
2M, 3F, identified as *Eumerus* sp., box 53

106) Eumerus ovatus Loew, 1848
1M, identified as *E. bicolor* Rondani, 1857, Stupinigi, box 53, lectotype.
4M, identified as *E. bicolor* Rondani, 1857, Stupinigi, box 53, paralectotypes
3F, identified as *E. bicolor*, Turin, box 53

107) Eumerus sabulonum (Fallén, 1817)
1F, identified as *Eumerus* sp., box 53

108) Eumerus tarsalis Loew, 1848
1F, identified as *E. tricolor* (Fabricius, 1798), Turin, box 53
3M, 2F, identified as *E. sabulonum*, Turin, box 53
1M, identified as *E. sabulonum*, V. S. Martino, box 53

109) Eumerus tricolor (Fabricius, 1798)
1M, 2F, identified as *E. tricolor*, Turin, box 53
1F, identified as *Eumerus* sp., box 53

110) Eupeodes corollae (Fabricius, 1794)
3M, 4F, identified as *Syrphus corollae*, Turin, box 50
1F, identified as *Syrphus luniger* Meigen, 1822, Valdivieri, box 50

111) Eupeodes flaviceps (Rondani, 1857)
1M, identified as *Syrphus* sp., Maritime Alps, box 50

112) Eupeodes lapponicus (Zetterstedt, 1838)

1F, identified as *Syrphus luniger*, Valdivieri, box 50
2M, 1F, identified as *Syrphus arcuatus*, Pesio, box 50
1F, identified as *Syrphus* sp., box 50

113) Eupeodes latifasciatus (Macquart, 1829)
1M, identified as *Syrphus luniger*, Valdivieri, box 50
1M, identified as *Syrphus* sp., Alps, box 50
1M, identified as *Syrphus* sp., Rosa Mountain, box 50

114) Eupeodes lucasi (Marcos-Garcia & Láska, 1983)
2M, identified as *Syrphus* sp., Alps, box 50
This species has been separated from the similar *E. luniger* only recently (Marcos-Garcia & Láska, 1983; Marcos-Garcia *et al.*, 2000), but its identification is not easy (Speight, 2004). In the checklist of Italian species (Belcari *et al.*, 1995) it has been recorded only from north Italy; but it has recently been found also in the Appenines (Birtele *et al.*, 2003) and Sicily (Marcos Garcia *et al.*, 2000).

115) Eupeodes luniger (Meigen, 1822)
3M, 2F, identified as *Syrphus luniger*, Valdivieri, box 50
1M, identified as *Syrphus arcuatus*, Pesio, box 50
3F, identified as *Syrphus* sp., Alps, box 50
3M, identified as *Syrphus* sp., box 49

116) Eupeodes nitens (Zetterstedt, 1843)
1F, identified as *Syrphus corollae*, var., Turin, box 50
1M, identified as *Syrphus* sp., V. S. Martino, box 50

117) Ferdinandea aurea Rondani, 1844
3M, 2F, identified as *Chrysoclamis aurea*, Turin, box 58
This rare species can be found in overmature forests, mainly with *Quercus*, sometimes also *Fagus*. In Italy it has been found to be present in the north and in Sicily. In Bellardi's collection it is well represented, collected in the surroundings of Turin.

118) Ferdinandea cuprea (Scopoli, 1763)
2M, 4F, identified as *Chrysoclamis cuprea*, Turin, box 58
4M, 3F, identified as *Chrysoclamis cuprea* var. Turin, box 58
1M, 3F, identified as *Chrysoclamis* sp., box 58
Bellardi probably separated the specimens with the black front as a variety of *F. cuprea*. Using this feature, together with some others such as smaller size, Egger (1860) described a new species: *F. nigrifrons*. In much of the recent literature this has been considered as a valid species (e.g. Peck, 1988). Differences between *F. nigrifrons* and *F. cuprea* are very small and mainly due to variable characters: the genitalia of the specimens in Bellardi's collection failed to separate the two species clearly. It is necessary to clarify the position of *F. nigrifrons*; here the author prefers not to separate the two groups of specimens.

**119) Hammerschmidtia ferruginea* (Fallén, 1817)
1F, identified as *Brachyopa ferruginea*, Turin, box 52

This Holoarctic species can be found in forests with overmature trees of *Populus tremula*. This is the first record for Italy. In Bellardi's collection only one specimen is present which suggests that the species was probably also rare more than one century ago.

120) Helophilus pendulus (Linné, 1758)
4M, identified as *H. pendulus*, Turin, box 48

121) Helophilus trivittatus (Fabricius, 1805)
4M, 6F, identified as *H. trivittatus*, Turin, box 48

122) Heringia heringi (Zetterstedt, 1843)
1M, 1F, identified as *Heringia* sp., Turin, box 46
2M, identified as *Heringia* sp., box 46

123) Heringia pubescens (Delucchi et Pschorn-Walcher, 1955)
1M, identified as *Pipiza obscura*, Ivrea, box 46
To date, this rare species has only been recorded in north-eastern Italy (Sommaggio 2006).

124) Heringia vitripennis (Meigen, 1822)
1M, identified as *Pipiza obscura* Macquart, 1844, Ivrea, box 46

125) Lejogaster metallina (Fabricius, 1781)
5M, 5F, identified as *Lejogaster* sp., Moncrivello, box 56
5F, identified as *Lejogaster* sp., Sangone, box 56
1F, identified as *Lejogaster* sp., Turin, box 56
1M, identified as *Lejogaster* sp., box 56

126) Lejogaster tarsata (Meigen, 1822)
3M, identified as *L. tarsatus*, Moncrivello, box 56
3F, identified as *L. tarsatus*, Sangone, box 56
1F, identified as *L. tarsatus*, Liguria, box 56
1M, identified as *Lejogaster* sp., box 56

127) Leucozona glaucia (Linné, 1758)
4M, 3F, identified as *Lasiophthicus glaucius*, Rosa Mountain, box 49

128) Leucozona lucorum (Linné, 1758)
4M, 4F, identified as *Leucozona lucorum*, Alps, box 49

129) Mallota cimbiciformis (Fallén, 1817)
1M, 1F, identified as *Zetterstedtia cimbiciformis*, Alps, box 47
This species is currently only known in the Italian mainland, where it is very rare. It is associated with deciduous overmature forests, mainly with *Fagus* and *Quercus*.

130) Mallota fuciformis (Fabricius, 1794)
4M, identified as *Zetterstedtia fuciformis*, Stupinigi, box 47
4F, identified as *Zetterstedtia fuciformis*, Turin, box 47
A rare species, associated with overmature forests with *Fagus* and *Quercus* and probably threatened in Europe (Speight, 2004). In Bellardi's collection several specimens are present suggesting that in the past it was far more common in the Turin surroundings as well.

131) Melangyna arctica (Zetterstedt, 1838)
2M, identified as *Syrphus arcticus*, Alps, box 50
1F, identified as *Syrphus* sp., Moncenisio, box 50
This Holoarctic species is rare in Italy and indeed only known in the eastern Alps. The present records confirm that probably it is present all over the Alps, even if rare.

132) Melangyna compositarum (Verrall, 1873)
1M, identified as *Syrphus compositarum*, Turin, box 50
1M, not identified, box 49

133) Melangyna umbellatarum (Fabricius, 1794)
3M, 4F, identified as *Syrphus compositarum*, Turin, box 50

134) Melanogaster hirtella (Loew, 1843)
1M, 1F, identified as *Melanogaster macquarti* Loew, 1843, Amiens, box 56

135) Melanogaster nuda (Macquart, 1829)
3M, identified as *M. viduata*, Turin, box 56
1M, identified as *Melanogaster* sp., box 56

136) Melanostoma mellinum (Linné, 1758)
4M, 2F, identified as *M. mellinum*, Turin, box 57
4M, 4F, identified as *M. scalaris*, Turin, box 57

137) Melanostoma scalare (Fabricius, 1794)
3M, 4F, identified as *M. gracilis* (Meigen, 1822), Turin, box 57
1F, identified as *Melanostoma* sp., Turin, box 57

138) Meligramma guttata (Fallén, 1817)
1M, 1F, identified as *Syrphus* sp., Valdivieri, box 50

139) Meliscaeva auricollis (Meigen, 1822)
2F, identified as *Syrphus decorus*, Turin, box 50
2M, 3F, identified as *Syrphus maculipennis* Zetterstedt [as labelled by Bellardi], Alps, box 50
3M, 3F, identified as *Syrphus* sp., Alps, box 50
1M, 2F, identified as *Syrphus* sp., box 50

140) Meliscaeva cinctella (Zetterstedt, 1843)
1M, 2F, identified as *Syrphus cinctellus*, Susa, box 49
2F, identified as *Syrphus* sp., Alps, box 50
3M, 1F, identified as *Syrphus* sp., Alps, box 49

141) Merodon aeneus Meigen, 1822
1F, identified as *M. funestus* (Fabricius, 1794), Turin, box 54
1F, identified as *Merodon* sp., Andrate, box 54
4M, 4F, identified as *Merodon* sp., Alps, box 54
1F, identified as *Merodon* sp., box 55

142) Merodon albifrons Meigen, 1822
3F, identified as *Merodon* sp., Susa, box 54
2M, identified as *Merodon* sp., Genova, box 54
2M, identified as *Merodon* sp., Alps, box 54

143) Merodon alexji Paramonov, 1925
2M, 1F, identified as *Merodon* sp., Alps, box 54
4M, identified as *Merodon* sp., box 55
This Mediterranean species is known in Italy only from very few localities (Hurkmans, 1993). The adults can be found in dry forests or grassland. Several specimens are present in Bellardi's collection.

144) Merodon armipes Rondani, 1843
2M, identified as *M. armipes*, Pesio, box 54
4F, identified as *M. mucronatus* Rondani, 1857, Susa, box 54
1F, identified as *Merodon* sp., box 55

145) Merodon avidus (Rossi, 1790)
4M, 4F, identified as *M. spinipes* (Fabricius, 1794), Turin, box 55
4M, 5F, identified as *M. avidus*, Turin, box 55

146) Merodon cinereus (Fabricius, 1794)
4M, 4F, identified as *M. cinereus*, Alps, box 54
1M, identified as *M. pudicus*, Alps, box 54, lectotype
1F, identified as *Merodon* sp., box 55

147) Merodon clavipes (Fabricius, 1781)
4M, 2F, identified as *Merodon clavipes*, Susa, box 54

148) Merodon constans (Rossi, 1794)
5M, 3F, identified as *Merodon* sp., Turin, box 54

149) Merodon crymensis Paramonov, 1925
2M, identified as *Merodon armipes*, Pesio, box 54

2F, identified as *Merodon* sp., Alpi

This species has only recently been added to the Italian checklist (Daccordi & Sommaggio, 2002). Currently known in Italy only from the western Alps, it is a south European species, known from France to Turkey.

150) Merodon equestris (Fabricius, 1794)

4M, 3F, identified as *M. equestris*, Alps, box 54

2M, 8F, identified as *M. equestris* var., Alps, box 54

151) Merodon funestus (Fabricius, 1794)

1M, 1F, identified as *M. funestus* ,Turin, box 54

4M, 1F, identified as *M. aureus* Fabricius, 1805, Turin, box 54

2F, identified as *Merodon* sp., box 55

152) Merodon nigritarsis Rondani, 1845

3M, 1F, identified as *M. submetallicus* Rondani, 1857, Alps, box 55

1M, identified as *M. submetallicus*, Susa, box 55

2M, identified as *Merodon* sp., Susa, box 55

1M, identified as *Merodon* sp., box 55

153) Merodon ruficornis Meigen, 1822 sensu Milankov *et al.*, 2002

3M, identified as *M. mucronatus*, Stupinigi, box 54

3M, 1F, identified as *Merodon* sp., box 55

Great confusion is present in the nomenclature of the *Merodon ruficornis* group of species. Seven species belonging to this group have been recognized (Radenković *et al.*, 2002). Milankov *et al.* (2002) studied morphological and molecular characteristics to separate 5 species from the Balkan Peninsula. *M. ruficornis* and *M. recurvus* Strobl, 1898 have been considered as separate species. Recently Radenković *et al.* (2002) studied the type material of several species in the Meigen, Rondani and Strobl collections. According to this paper the name *M. ruficornis* should be used as senior synonym of *M. recurvus,* while *M. ruficornis* sensu Milankov *et al.*, 2002 remains a species without name; the correct name for this species will probably be *M. aureus* Sack, 1913 (Vujić pers. comm.).

**154) Merodon ruficornis* Meigen, 1822 (as senior synonym of *M. recurvus* Strobl, 1898)

1M, identified as *Merodon mucronatus*, Stupinigi, box 54

4M, identified as *Merodon* sp., Pesio, box 54

2F, identified as *Merodon* sp., box 55

There is great confusion about this species. Peck (1988) did not included it in the catalogue of Palaearctic species. Hurkmans & De Goffeau (1995) considered it a synonym of *M. ruficornis*, mainly due to the almost identical male genitalia. Recently Milankov *et al.* (2002) reinstated it as a valid species because of differences in the male hind tibia and from genetic data. Radenković *et al.* (2002) find that the *M. ruficornis* sensu Milankov *et al.* (2002) is instead *M. recurvus* and must be consider as a senior synonym for this species. The Italian checklist did not consider this species, and only *M. ruficornis* sensu Milankov *et al.* (2002) is included..

155) *Merodon rufus* Meigen, 1838
1F, identified as *Merodon* sp., Torino, box 54
7M, 3F, identified as *Merodon* sp., Valdivieri, box 54
1M, identified as *Merodon* sp., box 55

156) Merodon tricinctus Sack, 1913
1M, 4F, identified as *Merodon* sp., Alps, box 54
3M, 1F, identified as *Merodon* sp., box 55
This species is distributed around the Mediterranean Sea. In Italy it has been recorded as present only in the south. The present records confirm the presence of *M. tricinctus* also in the north, where probably it is not so rare.

157) Microdon analis (Macquart, 1842)
4M, 3F, identified as *M. devius*, Turin, box 45
1M, identified as *Microdon*. sp., box 45
For the genus *Microdon* the author follows the nomenclature proposed in Dockzal & Schmid (1999).

158) Microdon devius (Linné, 1761)
2M, 3F, identified as *Microdon* sp., box 45
The adults of this species can be found on unimproved, well-drained grassland. In northern Italy these areas are disappearing, due to increasing agricultural activity. In fact it is only known in few localities, but in the past it was probably more widely distributed, as suggested by the 5 specimens found in Bellardi's collection.

159) Microdon mutabilis (Linnè, 1758)
5M, 6F, identified as *M. mutabilis*, Turin, box 45
1M, identified as *Microdon* sp., box 45

160) Milesia crabroniformis (Fabricius, 1775)
3M, identified as *M. crabroniformis*, Ivrea, box 58
4F, identified as *M. crabroniformis*, Turin, box 58

161) Milesia semiluctifera (Villers, 1789)
4M, 4F, identified as *M. semiluctifera*, Ivrea, box 58

162) Myathropa florea (Linné, 1758)
4M, 4F, *M. florea*, Turin, box 47
8M, 4F, *M. florea* var., Turin, box 47
1M, identified as *M. nigrifacies* Bell., Maritime Alps, box 47
2F, identified as *Myathropa* sp., box 47
In Bellardi's collection a male was identifed as *M. nigrifacies* Bell. Usually this means that Bellardi thought he had found a new species and in many cases Rondani (1857) recorded the new species. In this case there is no description of *M. nigrifacies*; probably Rondani did not consider the specimen as valid new species. This specimen is only darker than usual, in particular for the face. All other features, including male genitalia, are in agreement with the concept of *M. florea*.

163) Myolepta dubia (Fabricius, 1805)
1M, identified as *M. dubia*, Turin, box 52
Rare species, associated with alluvial deciduous forests, mainly of *Fagus* and *Quercus*. This species has been described as present all over Italy, with the exception of Sardina (Belcari *et al.*, 1995), but all records are old. Recent searches have failed to find it in the Padania Plain.

164) Myolepta nigritarsis Coe, 1957
1F, identified as *M. dubia*, Turin, box 52
A very rare species, associated with overmature forests of *Quercus ilex* and *Q. suber*. Currently recorded only for south Italy.

**165) Myolepta potens* (Harris, 1780)
1M, identified as *M. dubia*, Turin, box 52
A very rare species, usually found in overmature alluvial forests, mainly of *Fagus*, *Quercus* and *Populus*. This is the first record of this species in Italy.

166) Myolepta vara (Panzer, 1798)
2M, 3F, identified as *M. vara*, Turin, box 52
M. vara is also very rare, usually associated with overmature *Quercus* forests. In Italy it is only known from very few localities. Recently it has been recorded in Bosco della Fontana (MN) in the eastern Padania Plain (Birtele *et al.*, 2002).

167) Neoascia annexa (Müller, 1776)
3M, 3F, identified as *Ascia floralis*, Turin, box 52
3M, identified as *Ascia* sp., box 52

168) Neoascia podagrica (Fabricius, 1775)
2M, 1F identified as *Ascia podagrica*, Turin, box 52
2F, identified as *Ascia* sp., Sestri, box 52
2F, identified as *Ascia* sp., Valdieri, box 52
1M, identified as *Ascia* sp., box 52

169) Neoascia tenur (Harris, 1780)
1M, identified as *Ascia* sp., Turin, box 52
1M, identified as *Ascia* sp., box 20
1F, identified as *Sphegina* sp., Turin, box 52

170) Orthonevra brevicornis (Loew, 1843)
1M, identified as *O. nobilis* (Fallén, 1817), Stupinigi, box 46
1F, identified as *Orthonevra* sp., Villauro, box 46
Adults of *O. brevicornis* can be found in humid forest, mainly with *Fagus*, *Quercus* and *Salix*. In the Italian checklist it has been described as present in central-southern Italy, but its Sibero-European distribution leads one to believe that it was present also in northern Italy as confirmed by present record.

171) Orthonevra elegans (Wiedemann in Meigen, 1822)
4M, 3F, identified as *O. elegans*, Moncrivello, box 46

A rare species, strongly associated with wetland. Speight (2004) considered this species as under threat due to the disappearance of its habitat. In Bellardi's collection it is well represented and probably it was not so rare in the past. Recent research in the wetlands of the Padania Plain failed to record *O. elegans* (Daccordi & Marogna, 1999; Birtele *et al.*, 2002; unpublished data). It is possible that this species is now exctint in northern Italy due to the loss of its typical habitat.

172) Orthonevra frontalis (Loew, 1843)
1M, identified as *O. nobilis*, Stupinigi, box 46
1M, identified as *Orthonevra*, Moncalieri, box 46
1M, identified as *Orthonevra* sp., box 56

The ecology of *O. frontalis* is similar to that of *O. elegans*, even if the environmental requirements are probably less strict and *O. frontalis* is usually more common. It has been recorded as present in the Italian mainland, even if recent faunistic researches failed to record it.

173) Orthonevra nobilis (Fallén, 1817)
3F, identified as *O. nobilis*, Stupinigi, box 46

174) Orthonevra onytes (Séguy, 1961)
1M, identified as *Orthonevra* sp., box 46

There is confusion between *O. onytes* and *O. tristis* (Loew, 1781). The two taxa may be synonymous. Here the author follows Speight (2004) who suggested using *O. onytes*, at least until the re-examination of the *O. tristis* type material.

175) Paragus albifrons (Fallén, 1817)
2M, identified as *P. thymiastri* (Fabricius, 1781), Trana, box 46

176) Paragus constrictus Šimić, 1986
2M, identified as *P. coadonatus*, Turin, box 45
1M, identified as *Paragus* sp., box 46

This species has been added to the Italian checklist only recently (Daccordi & Sommaggio, 2002). It has been described as present in south Tirol (Doczkal, 1996) and Lombardia (unpublished data). The present records confirm that this species is present in all the Alps.

177) Paragus haemorrhous Meigen, 1822
4M, identified as *P. coadonatus*, Turin, box 45
2M, identified as *P. femoratus* Meigen, 1822, Stura, box 45

178) Paragus pecchiolii Rondani, 1857
1M, identified as *P. thymiastri*, Trana, box 46
1M, identified as *P. quadrifasciatus* Meigen, 1822, Turin, box 46
1M, identified as *Paragus* sp., box 46

Sommaggio (2002) reinstated *P. pecchiolii* as the correct name for *P. majoranae* sensu authors after Goedlin de Tiefenau (1976). *P. majoranae* is instead a senior synonym of *P. gorgus* Vujić & Radenković, 1999

179) Paragus punctulatus Zetterstedt, 1838
1M, identified as *P. bicolor* (Fabricius, 1794), Liguria, box 46

180) Paragus quadrifasciatus Meigen, 1822
1M, identified as *P. quadrifasciatus*, Turin, box 46
4F, identified as *P. quadrifasciatus*, Liguria, box 46
1M, identified as *P. testaceus* Meigen, 1822, Liguria, box 46
1M, identified as *Paragus* sp., Alberga, box 45
2M, identified as *Paragus* sp., box 46

**181) Paragus romanicus* Stănescu, 1992
3M, 2F, identified as *P. bicolor*, Liguria, box 46
2M, identified as *Paragus* sp., box 46
This is the first record of this species for Italy. *P. romanicus* can be easily confused with *P. bicolor*: females cannot be separated satisfactory; the male can be separated only on the basis of small difference in the genitalia. The species is not so rare in Italy: it is present in Rondani collection (Vujić pers. com.) and surely in the Alps.

182) Paragus strigatus Meigen, 1822
1M, identified as *P. testaceus*, Liguria, box 46
P. strigatus is a Mediterranean species. In south and Insular Italy it is well distributed and almost common. It has been recorded also from northern Italy but only from coastal areas (unpublished data). The present record ("Liguria") seem to confirm this distribution.

183) Paragus tibialis (Fallén, 1817)
3M, identified as *P. coadonatus*, Turin, box 45
1M, identified as *P. femoratus*, Stura, box 45
4M, identified as *Paragus* sp., box 46

184) Parasyrphus lineolus (Zetterstedt, 1843)
2M, 2F, identified as *Syrphus nigrofemoratus* (Macquart, 1829), Alps, box 50

185) Parasyrphus punctulatus (Verrall, 1873)
3M, identified as *Syrphus* sp., Alps, box 49

186) Pipiza bimaculata Meigen, 1822
1M, 2F, identified as *P. geniculata* Meigen, 1822, Valdieri, box 46

187) Pipiza festiva Meigen, 1822
3M, 9F, identified as *P. nocticula*, Turin, box 46
1M, identified as *Pipiza* sp., V. Formazza, box 46

188) Pipiza lugubris (Fabricius, 1775)
4M, 4F, identified as *P. lugubris*, Ivrea, box 46
1M, identified as *Pipiza* sp., box 46

The identity of this species is not clear and Speight (2004) did not include it in the European list of species. Here the author follows Stubbs & Falk (1983) in separating specimens from other *Pipiza* based on the dark cloud of the wing, dark front tarsi and whitish hairs on the first and second abdominal tergites margin.

**189) Pipiza luteitarsis* Zetterstedt, 1843
1F, identified as *Pipiza* sp., V. Formazza, box 46

This is the first Italian record of this species, currently known in Europe from Ireland to the Alps and the European part of Russia. The identity of this species has been highly debated and this probably explains the few records to date. According to Speight (2004) it can be easily separated from all other Pipiza species, except *P. quadrimaculata* (Panzer, 1804), "by the lack of a pair of apico-ventral ridges on the hind femora"; the separation of *P. luteitarsis* and *P. quadrimaculata* is easy from many other characters.

190) Pipiza noctiluca (Linné, 1758)
2M 2F, identified as *P. geniculata*, Susa, box 46
1F, identified as *Pipiza*. sp., Turin, box 46

A lot of confusion exists about this species and at the moment it is not clear to which species the name *P. noctiluca* should be applied. Here the author follows Stubbs & Falk (1983). The female unidentified by Bellardi and collected in Turin agrees with the description of *P. fenestrata* Meigen, 1822 given by Stubbs & Falk (1983); but a lot of discussion exists with regard to the difference between the two species and at the moment the author prefers not to separate *P. fenestrata* as a valid species.

191) Pipiza quadrimaculata (Panzer, 1804)
2F, identified as *Pipiza* sp., Turin, box 46

192) Pipizella calabra (Goeldlin de Tiefenau, 1974)
1M, identified as *P. varians* Rondani, 1847, Turin, box 46

This is a rare species, only recently described. It seems to be present in unimproved meadows at high altitude. Originally described in southern Italy (Goeldlin de Tiefenau, 1974), it has also been recorded from the French Alps (Verlinden, 1999a), Tuscan Appenines (Birtele *et al.*, 2002) and western Italian Alps (Delmastro & Sommaggio, 2003). Its distribution seems to have been reduced to the Appenines and western Alps; currently no data are available for the central and eastern Alps.

193) Pipizella maculipennis (Meigen, 1822)
4M, identified as *P. varians*, Turin, box 46

194) Pipizella viduata (Linné, 1758)
1M, identified as *P. varians*, Turin, box 46

195) Pipizella zeneggenensis (Goeldlin de Tiefenau, 1974)
2M, identified as *P. varians*, Turin, box 46

196) Platycheirus albimanus (Fabricius, 1781)
3M, 2F, identified as *P. albimanus*, Turin, box 51
1F, identified as *Melanostoma* sp., Turin, box 57
1F, identified as *Melanostoma* sp., Valdieri, box 57

197) Platycheirus ambiguus (Fallén, 1817)
3M, 2F, identified as *Melanostoma* sp., Alps, box 57

198) Platycheirus angustatus (Zetterstedt, 1843)
1M, identified as *P. clypeatus* (Meigen, 1822), Stupinigi, box 51
1M, identified as *Platycheirus* sp., Alagna, box 51

199) Platycheirus clypeatus (Meigen, 1822)
2F, identified as *P. clypeatus*, Usseglio, box 51

200) Platycheirus fulviventris (Macquart, 1829)
3M, 4F, identified as *P. fulviventris*, Moncrivello, box 51

201) Platycheirus manicatus (Meigen, 1822)
4M, 4F, identified as *P. manicatus*, Turin, box 51

202) Platycheirus occultus Goeldlin de Tiefenau, Maibach et Speight, 1990
1M, identified as *Platycheirus*. sp., Stupinigi, box 51
This species can be found in wetlands, usually with *Phragmites* plants. Its distribution is not clear due to its recent description (Goeldlin de Tiefenau *et al.*, 1990). In Italy it was previously only known from the Tusco Appenines (Birtele *et al.*, 2003). The present record suggests its presence, at least in the past, in the North too.

203) Platycheirus scutatus (Meigen, 1822)
1M, 2F, identified as *P. scutatus*, Turin. box 51
Recently Doczkal *et al.* (2002) described *P. speighti* Doczkal *et al.*, 2002 as a new species and provided a useful key to separate species in the *P. scutatus* group. Specimens in Bellardi's collection all belong to *P. scutatus*.

204) Platycheirus tarsalis (Schummel, 1837)
1F, identified as *Platycheirus* sp., Alps, box 51

205) Pocota personata (Harris, 1780)
1M, identified as *Criorhina apicata* (Meigen, 1822), Turin, box 55
1F, identified as *P. personata*, box 52
A very rare species, usually found in mature and overmature *Fagus* forests. At present only known from a few localities in the north of Italy.

206) Psarus abdominalis (Fabricius, 1794)
2M, 4F, identified as *P. abdominalis*, Turin, box 45
4M, 3F, identified as *P. abdominalis*, box 45
The adults of this species inhabit *Quercus* forests, with senescent trees and a diverse ground flora. Speight (2004) considered it as a threatened species, disappearing in most of Europe due to its strict environmental requirements. In Bellardi's collecton it is well represented. Bezzi (1891, 1893-4) collected *P. abdominalis* both in western and eastern parts of northern Italy. Since the beginning of 1900 it has been collected no more.

207) Psilota anthracina Meigen, 1822
1F, identified as *P. anthracina*, V. Formazza, box 46
A rare species, usually found in well preserved deciduous forests. In Italy there are only a few records; it was recently recorded in Bosco della Fontana (MN) in the Padania Plain (Birtele *et al.*, 2002).

208) Pyrophaena rosarum (Fabricius, 1787)
4M, 4F, identified as *P. rosarum*, Turin, box 51

209) Rhingia borealis Ringdahl, 1928
2M, identified as *Rhingia* sp., Pesio, box 52
The adults of this species can be found in deciduous, humid forests, mainly with *Fagus* and *Quercus*. It has been recorded in much of the recent literaure as *R. austriaca* Meigen, 1830. In Italy it is currently known only from a few localities in the north.

210) Rhingia campestris Meigen, 1822
1M, 1F, identified as *R. rostrata*, Turin, box 52
3M, 2F, identified as *R. campestris*, Turin, box 52
2M, identified as *Rhingia* sp., Pesio, box 52

211) Rhingia rostrata Linné, 1758
4M, 4F, identified as *R. rostrata*, Turin, box 52
2F, identified as *R. campestris*, Turin, box 52

212) Riponnensia splendens (Meigen, 1822)
2M, 3F, identified as *Chrysogaster splendens*, Turin, box 56
1M, identified as *Chrysogaster* sp., box 56

213) Scaeva albomaculata (Macquart, 1842)
1M, identified as *Lasiophthicus gemellarii* (Rondani, 1846) Turin, box 49
This is a rare species. Its distribution is mainly around the Mediterranean and Central Asia. There are some records from central Europe too, but probably due to its highly migratory habit. In Italy it has been recorded only from a few localities, mainly from south Italy. This is the first record for the Padania Plain.

214) Scaeva dignota (Rondani, 1857)
1M, identified as *Lasiophthicus dignotus*, Turin, box 49
1M, 1F, identified as *Lasiophthicus seleniticus* (Meigen, 1822), Turin, box 49

215) Scaeva pyrastri (Linné, 1758)
2M, 7F, identified as *Lasiopthicus pyrastri*, Turin, box 49
1F, identified as *Lasiopthicus* sp., box 49

216) Scaeva selenitica (Meigen, 1822)
1M, 1F, identified as *S. pyrastri*, Turin, box 49

217) Sericomyia lappona (Linné, 1758)
4M, 2F, identified as *S. lappona*, Alps, box 52

218) Spazigaster ambulans (Fabricius, 1798)
4M, identified as *S. dispar* (Loew, 1841), V. S. Martino, box 51
2F, identified as *S. dispar*, Alps, box 51
This rare species can be found at high altitude, and is known from continental Italy only from a few records. It has been recently recorded also from Piedmont (Delmastro & Sommaggio, 2003)

219) Sphaerophoria chongjini Bańkowska, 1964
5M, identified as *Sphaerophoria* sp., Ivrea, box 51
3M, identified as *Sphaerophoria* sp., box 51
The distribution of this species is currently poorly known due to confusion with other *Sphaerophoria* species, a problem only recently solved (Speight, 1988; 1999). In Italy it is currently known only from the western Alps; the present records confirm this distribution.

220) Sphaerophoria infuscata Goeldlin de Tiefenau, 1974
1M, 1F, identified as *Sphaerophoria* sp., box 51
The Italian record of *S. potentillae* Claussen, 1984 (Delmastro & Sommaggio, 2003) is erroneous and should be referred to this species. It is widespread distributed in the Alps even if not common.

221) Sphaerophoria interrupta (Fabricius, 1805)
1M, identified as *S. melissae* (Meigen, 1822), Alps, box 51
1M, identified as *Sphaerophoria* sp., box 51

222) Sphaerophoria philanthus (Meigen, 1822)
1M, identified as *Sphaerophoria* sp., Ivrea, box 51
1M, identified as *Sphaerophoria* sp., Alps, box 51
Goeldlin de Tiefenau (1989) recently separated *S. boreoalpina* Goeldlin de Tiefenau, 1989 from *S. philanthus*. In the Alps they show different altitudinal distributions with *S. boreoalpina* at higher altitudes than *S. philantha*. At the moment only *S. philanthus* is known in Italy, in the Alps.

223) Sphaerophoria rueppelli Wiedemann, 1830
1M, 3F, identified as *S. menthastri* (Linné, 1758), Turin, box 51
1M, identified as *Sphaerophoria* sp., Alps, box 51

224) Sphaerophoria scripta (Linné, 1758)
8M, identified as *S. scripta*, Turin, box 51
4M, identified as *S. nigricoxa* Zetterstedt, 1843, Battigliera, box 51
2M, 2F, identified as *S. nigricoxa*, Ivrea, box 51
3M, identified as *S. nigricoxa*, Moncalieri, box 51
5M, identified as *Sphaerophoria* sp., box 51

225) Sphaerophoria taeniata (Meigen, 1822)
3M, identified as *S. taeniata*, Turin, box 51
1M, 1F, identified as *Sphaerophoria* sp., box 51

226) Sphegina clunipes (Fallén, 1816)
1M, 1F, identified as *S. clunipes*, Turin, box 52
2F, identified as *S. nigra*, Meigen, 1822, Turin, box 52

227) Sphegina cornifera Becker, 1921
1M, identified as *S. nigra*, Turin, box 52

228) Sphegina latifrons Egger, 1865
1F, identified as *S. nigra*, Turin, box 52
S. latifrons is a rare species, usually associated with humid forests. Currently known only from northern Italy, from very few localities.

229) Sphegina platychira Szilády, 1937
1M, identified as *S. nigra*, Turin, box 52
Like the previous species, *S. platychira* is also rare, usually found in deciduous humid forests. Currently not included in the checklist of Italian species (Belcari *et al.*, 1996; Daccordi & Sommaggio, 2002), it has been recently recorded from the western Alps (Delmastro & Sommaggio, 2003).

230) Sphegina verecunda Collin, 1937
1F, identified as *S. clunipes*, Turin, box 52
The biology of this species is similar to the previous two. Currently known from northern Italy, but only from a few localities.

231) Sphiximorpha subsessilis (Illiger in Rossi, 1807)
4M, identified as *S. subsessilis*, Mandria, box 58
2F, identified as *S. subsessilis*, Villastellone, box 58
This is a very rare species, strongly associated with overmature forests, mainly with *Populus*, *Alnus* and *Salix*. Speight (2004) suggested that this species can be considered as threatened in Europe. In Italy it has been recorded, but it is very rare. In Bellardi's collection it has been recorded in two areas near Turin: both are forest remnants of the Padania Plain *Quercus-carpinetum*.

232) Spilomyia digitata (Rondani, 1865)
1F, identified as *Spilomyia* sp., box 58
This is a species associated with thermophilous *Quercus* forest with overmature trees. It is rare due to strict environmental requirements, and Speight (2004) assumed that in some European countries this species may be extinct. At present recorded from the whole of Italy, except Sardinia. Recent faunistic research failed to record it.

233) Spilomyia manicata (Rondani, 1865)
1M, 1F, identifies as *S. saltuum*, Alps, box 58
Adults of this species can be found in *Fagus* forest with overmature trees. It is currencly considered to be threatened in many European countries (Speight, 2004). Like the previous

species it has been recorded from the whole of Italy except Sardinia, but recent records are very rare.

234) Spilomyia saltuum (Fabricius, 1794)
2M, 3F, identified as *Sp. saltuum*, Alps, box 58
1M, identified as *Spilomyia* sp., Alps, box 58
Another saproxylic species, associated with overmature *Quercus* forests. Like other *Spilomyia* species, its distribution is decreasing due to the habitat loss. It has been recorded from the whole of Italy, except Sardinia; but recent faunistic records are rare.

235) Syritta pipiens (Linné, 1758)
4M, 4F, identified as *S. pipiens*, Turin, box 53

236) Syrphus ribesii (Linné, 1758)
4M, 3F, identified as *S. ribesii*, Turin, box 49
1F, identified as *S. ribesii*, Moncenisio, box 49
3M, identified as *Syrphus* sp., Valdieri, box 49
2M, 1F, identified as *Syrphus* sp., box 49

237) Syrphus torvus Osten-Sacken, 1875
1M, 1F, identified as *S. torvus*, Alps, box 49
2M, 2F, identified as *S. ribesii*, Turin. box 49

238) Syrphus vitripennis Meigen, 1822
3M, 3F, identified as *S. vitripennis*, Turin, box 49
1F, identified as *S. ribesii*, Turin, box 49
2M, 1F, identified as *Syrphus* sp., box 49

239) Volucella bombylans (Linné, 1758)
4M, 4F, identified as *V. bombylans*, Alps, box 48.
9M, 5F, identified as *V. bombylans* var. *plumata* (De Geer, 1776), Turin, box 48.
5M, 2F, identified as *V. bombylans* var., Alps, box 48.
4M, 4F, identified as *V. haemorrhoidalis* Zetterstedt, 1838, Alps, box 48.

240) Volucella inanis (Linné, 1758)
3M, 5F, identified as *V. inanis*, Turin, box 48

241) Volucella inflata (Fabricius, 1794)
4M, 4F, identified as *V. inflata*, Turin. box 48

242) Volucellla pellucens (Linné, 1758)
6M, 5F, identified as *V. pellucens*, Alps, box 48

243) Volucella zonaria (Poda, 1761)
4M, 5F, identified as *V. zonaria*, Turin, box 48

244) Xanthandrus comtus (Harris, 1780)
1M, 2F, identified as *Melanostoma hyalinata* (Fallén, 1817), Turin, box 57

245) Xanthogramma citrofasciatum (De Geer, 1776)
5M, 3F, identified as *X. citrofasciata*, Turin, box 50

246) Xanthogramma laetum (Fabricius, 1794)
2F, identified as *Lasiophthicus novus* Rondani, 1857, Turin, box 49
1M, 1F, identified as *Xanthogramma* sp., Moncalieri, box 50
1M, identified as *Xanthogramma* sp., box 50
This rare European species is mainly distributed in southern Europe. It has been recorded only from a very few localities on the Italian mainland. In the north it is only known in the west; in Bellardi's collection there are several specimens, suggesting a wider distribution, at least in north-western Italy.

247) Xanthogramma pedissequum (Harris, 1776)
4M, 4F, identified as *X. ornata* (Meigen, 1822), Turin, box 50
3M, 4F, identified as *X. dives* (Rondani. 1857), Turin, box 50
1M, identified as *Xanthogramma* sp., Turin, box 50

248) Xylota florum (Fabricius, 1805)
2M, identified as *X. nemorum* (Fabricius, 1805), Alps, box 53
1F, identified as *X. abiens* Meigen, 1822, Alps, box 53
1F, identified as *Xylota* sp., box 53
Speight (2004) described this species as associated with alluvial forests, with overmature trees, specially *Populus*. The present records of *X. florum* do not seem to agree with this description. In Italy it has been recorded as present in all the mainland, but records are mainly old and it is necessary to revise them in accordance with recent taxonomy (Speight, 1999; Bartsch *et al.*, 2002)

249) Xylota ignava (Panzer, 1798)
2M, 2F, identified as *Xylota ignava*, Turin, box 53
Bellardi recorded this species in Turin or its surroundings; this is a rare species, associated with coniferous forests. At present known from peninsular Italy, but in few localities.

250) Xylota jakutorum Bagatshanova, 1980
1M, identified as *X. florum* (Fabricius, 1805), Villastellone, box 53
2M, identified as *X. nemorum*, Alps, box 53
1F, identified as *X. abiens*, Alps, box 53
This species has been separated from *X. caeruleiventris* Zetterstedt, 1838 only recently (see Doczkal, 2004 for a detailed description). The distribution of *X. jakutorum* and *X. caeruleiventris* is still largely unknown, due to the confusion between the two, and records of *X. caeruleiventris* should be reconfirmed. Currently only *X. caeruleiventris* is included in the

Italian checklist (Belcari *et al.*, 1995), but its real presence needs confirmation. On the other hand *X. jakutorum*, even if not included, is definitely present, at least in the Alps (Speight, 2004; Romig and Claussen, per. comm.). The records in Bellardi's collection are all referred to *X. jakutorum*, confirming the presence of this species in the western Alps. The records in Villastellone are interesting; this locality is near Turin, characterized by the presence of alluvial forests. This seems to confirm that this species, in the southern part of its distribution, can colonize deciduous forests as well.

251) Xylota segnis (Linné, 1758)
4M, 4F, identified as *X. segnis*, Turin, box 53

252) Xylota sylvarum (Linné, 1758)
3M, 2F, identified as *X. sylvarum*, Alps, box 53

253) Xylota tarda Meigen, 1822
1M, identified as *Xylota* sp., Alps, box 53

254) Xylota triangularis Zetterstedt, 1838
1M, 3F, identified as *X. triangularis*, Alps, box 53

255) Xylota xanthocnema Collin, 1939
1M, 1F, identified as *X. sylvarum*, Alps, box 53
1F, identified as *Xylota* sp., box 53.

CONCLUSION

In accordance with the published Italian checklist and subsequent additions (Belcari *et al.*, 1995; Daccordi & Sommaggio, 2002; unpublished data), 512 Syrphidae species have now been recorded as present in Italy. In Bellardi's collection 255 Syrphidae species are present; 252 have been collected in Italy and 251 in north-western areas (Piemonte, Liguria and Valle d'Aosta regions). Almost 50% of the Italian fauna is represented in Bellardi's collection and 55% of those recorded for northern Italy. North-western Italy has been poorly studied and only few data are currently available on its syrphid fauna. The present work represents a significant species list. Combining these data with that of Delmastro & Sommaggio (2003), 268 species have been recorded from north-western Italy.

Locality data are generally not very detailed in Bellardi's collection, but at least records from Turin and surroundings are clearly separated from those of the Alps. In a few cases more detailed information are also added; for example some records are identified as collected in Stupinigi or Moncalieri parks, not more than 20 km from Turin. Eight species have been recorded for the first time in Italy and four of them (*Brachyopa insensilis*, *Hammerschmidtia ferruginea*, *Criorhina pachymera* and *Myolepta potens*) were collected from the surroundings of Turin. These

species, together with others collected from the same area, such as *Sphiximorpha subsessilis*, *Myolepta dubia*, *Psarus abdominalis*, are typical of alluvial, wellpreserved forests. Unfortunately no recent faunistic research has tried to find these species again in the same area and no data are available on their presence. The few recent trips in plain woods in northeastern Italy (Birtele *et al.*, 2002; unpublished data) failed to collect these species suggesting that they have disappeared from the Padania Plain following habitat loss. It would be interesting to study forests remnants in the surrounding area of Turin, such as the Villastellone or Stupinigi parks, to compare the current fauna with that collected by Bellardi. More than 150 species have been recorded as present in the surroundings of Turin, in many cases species with strict environmental requirements. This is an important data about the state of environment in this area during the 19th century.

ACKNOWLEDGEMENTS

My sincerest thanks to Dr. L. Bartolozzi (Florence) for the loan of Rondani types.; Dr. C. Claussen (Flensburg), and Dr. F. Gilbert (Nottingham) for critical review of the manuscript and useful suggestions, and Dr. M. Daccordi (Turin) who kindly let me study Bellardi's collection, critically reviewed the manuscript and encouraged me in many ways.

RIASSUNTO

Revisione dei Diptera Syrphidae nella Collezione Bellardi, Torino.

La collezione Bellardi, conservata presso il Museo Regionale di Scienze Naturali a Torino, conserva molte specie di Insecta Diptera raccolti nella seconda metà del XIX secolo nella parte occidentale dell'Italia settentrionale. Complessivamente 255 specie di Syrphidae sono presenti nella collezione; di queste 8 sono prime segnalazioni per l'Italia e devono essere aggiunte alla checklist della fauna italiana. Più di 150 specie, di cui 4 nuove segnalazioni per l'Italia, sono state raccolte nei dintorni di Torino e questo fornisce un'importante indicazione sulle condizioni ambientali di quest'area nel XIX secolo.

Parole chiave: Insecta, Diptera, Syrphidae, Collezione Bellardi, Revisione.

Daniele SOMMAGGIO
Biostudio
Via Riello, 4
I-36010 Velo d'Astico (VI) (Italia)
e-mail: dsommaggio@tiscali.it

BIBLIOGRAFIA

ANDERSSON H., 1988. De svenska Xylotini-arterna (Diptera, Syrphidae). - Ent. Tidskr., 109: 129-137.

BARTSCH H.D., NIELSEN T.R., SPEIGHT M.C.D., 2002. Reappraisal of *Xylota caeruleiventris* Zetterstedt, 1838, with remarks on the distribution of this species and *X.jakutorum* Bagatshanova, 1980 in Europe. - Volucella, 6: 69-80.

BELCARI A., DACCORDI M., KOZÀNEK M., MUNARI L., RASPI A., RIVOSECCHI L., 1995. Diptera Platypezoidea, Syrphoidea. *In*: MINELLI A., RUFFO S., LA POSTA S. (eds): Check-list delle specie della fauna italiana, 70. - Calderini, Bologna.

BELLARDI L., 1859-1861. Saggio di ditterologia messicana di Luigi Bellardi. - Memorie R. Accad. Sci. Torino, serie II, t. XIX, XXI.

BEZZI M., 1891. Contribuzione alla fauna dipterologica della Provincia di Pavia. - Boll. Soc. Ent. ital., 23: 21-91

BEZZI M., 1893-4. I Ditteri del Trentino: saggio di un elenco delle specie di Ditteri finora osservate nel Trentino. - Atti Soc. Veneto-Trent. Sci. nat. Padova, 1: 209-272; 275-353.

BIRTELE D., SOMMAGGIO D., SPEIGHT M.C.D., TISATO M., 2002. Syrphidae. In MASON F., CERRETTI P., TAGLIAPIETRA A., SPEIGHT M.C.D., ZAPPAROLI M., Invertebrati di una foresta della Pianura Padana, Bosco della Fontana. - Arcari Editore, 2002, 115-118.

BIRTELE D., SOMMAGGIO D., SPEIGHT M.C.D., 2003. Syrphidae. *In* CERRETTI P., TAGLIAPIETRA A., TISATO M., VANIN S., MASON F., ZAPPAROLI M., Artropodi dell'orizzonte del faggio nell'Appennino settentrionale. - Arcari Editore, 2003, 154-163.

CLAUSSEN C., THOMPSON C., 1996. Zur Identität und Synonymie der von Camillo Rondani beschriebenen *Cheilosia*-Arten (Diptera, Syrphidae). - Studia dipterologica, 3: 275-281.

DACCORDI M., MAROGNA A., 1989. Studi sulla Palude del Busatello (Veneto-Lombardia). 25. I Ditteri Sirfidi. - Mem. Mus. Civ. Stor. Nat. Verona, sez. biologica, 7: 223-230.

DACCORDI M., SOMMAGGIO D., 2002. 070 Syrphidae. - Boll. Soc. Ent. ital., 134: 192-198.

DECLEER K., 1989. *Sphaerophoria chongjini* Bankowska, 1964 (Diptera, Syrphidae) recorded for the first time in Belgium and its distribution in Europe. - Bull. Soc. R. belge Ent., 125: 152-155.

DELMASTRO G., SOMMAGGIO D., 2003. Contributo alla conoscenza dei Sirfidi (Diptera Syrphidae) delle Alpi Piemontesi. - Boll. Mus. reg. Sci. nat., Torino, 20: 231-268.

DOCZKAL D., 1996. Schwebfliegen aus Deutschland: Erstnachweise und wenig bekannte Arten (Diptera, Syrphidae). - Volucella, 2: 36-62.

DOCZKAL D., 2000. Description of *Cheilosia ranunculi* spec. nov. from Europe, a sibling species of *C.albitarsis* Meigen (Diptera, Syrphidae). - Volucella, 5: 63-78.

DOCZKAL D., 2004. *Xylota caeruleiventris* Zetterstedt, 1838 (Diptera, Syrphidae) found in central Europe, with remarks on identification of the female. - Volucella, 7: 193-200.

DOCZKAL D., SCHMID U., 1999. Revision der mitteleuropäischen Arten der Gattung *Microdon* Meigen (Diptera, Syrphidae). - Volucella, 4: 45-68.

DOCZKAL D., STUKE J.-H., GOELDLIN DE TIEFENAU P., 2002. The species of the *Platycheirus scutatus* (Meigen) complex in central Europe, with description of *Platycheirus speighti* spec. nov. from the Alps (Diptera, Syrphidae). - Volucella, 6: 23-40.

EGGER J.G., 1860. Fortsetzung der Beschreibung neuer Zweiflügler und diagnostische Bemerkungen. - Verh. zool.-bot. Ges. Wien, 10: 663-668.

GIGLIO TOS E., 1890. Le specie europee del genere *Chrysotoxum* Meig. – Atti Accad. Sci. Torino, 26 (1891): 134-165.

GIGLIO TOS E., 1892. Un nuovo genere di Sirfidi. - Boll. Musei Zool. Anat. comp. della R. Univ. Torino, 7: 1-4.

GIGLIO TOS E., 1893. Ditteri del Messico. Parte II Syrphidae - Conopidae - Pipunculidae - Torino, 9 pp.

GOELDLIN DE TIEFENAU P., 1974. Contribution à l'étude systématique et écologique des Syrphidae (Dipt.) de la Suisse occidentale. - Mitt. Schweiz. Ent. Ges. 47: 151-252.

GOELDLIN DE TIEFENAU P., 1976. Revision du genre *Paragus* (Dipt., Syrphidae) de la région paléarctique occidentale. - Mitt. Schweiz. Ent. Ges. 49: 79-108.

GOELDLIN DE TIEFENAU P., 1989. Sur plusieurs espèces de *Sphaerophoria* (Dipt., Syrphidae) nouvelles ou méconnues des régions paléarctique et néarctique. - Mitt. Schweiz. Ent. Ges. 62: 41-66

GOELDLIN DE TIEFENAU P., MAIBACH A., SPEIGHT M.C.D., 1990. Sur quelques espèces de *Platycheirus* (Diptera, Syrphidae) nouvelles ou méconnues. - Dipterists Digest, 5: 19-44.

GORI M., 1999. Una nuova specie di *Microselia* proveniente dalle Alpi occidentali italiane (Diptera: Phoridae). - Boll. Soc. Ent. ital., 131: 239-243.

HIPPA H., NIELSEN T.R., VAN STEENIS J., 2001. The West Palaearctic species of the genus *Eristalis* Latreille (Diptera, Syrphidae). - Norw. J. Entomol., 48: 289-327.

HURKMANS W., 1993. A monograph of *Merodon* (Diptera: Syrphidae). Pt.1. - Tijdschr. Ent., 136: 147-234.

HURKMANS W., DE GOFFEAU L.J.W., 1995. Het geslacut *Merodon* in Nederland: phytosanitaire, ethologische, ecologische en systematische aspecten (Ditpera: Syrphidae). - Ent. Ber., Amst., 55: 21-29.

ICZN, 2001. Opinion 1982 (Case 3090): *Musca arcuata* Linnaeus, 1758 and *M. festiva* Linnaeus, 1758 (currently *Chrysotoxum arcuatum* and *C. festivum*) and *M. citrofasciata* De Geer, 1776 (currently *Xanthogramma citrofasciatum*) (Insecta, Diptera): specific names conserved by the designation of neotypes for *M. arcuata* and *M. festiva*. - Bull. Zool. Nom., 58: 241-242.

MARCOS-GARCIA M.A., LÁSKA P., 1983. Description of *Metasyrphus lucasi* sp.n. (Diptera, Syrphidae). - Nouv. Rev. Entom., 13(1): 113-116.

MARCOS-GARCIA M.A., MAZÁNEK L., LÁSKA P., BI IK V., ROJO S., 2000. Description of the male of *Eupeodes lucasi* (Marcos-Garcia & Láska, 1983) and biological data on the species (Diptera, Syrphidae). - Volucella, 5: 129-138.

MILANKOV V., VUJIĆA A., SIMIĆ S., 2002. Identifying the species of the *ruficornis* group of the genus *Merodon* Meigen (Diptera: Syrphidae) using morphological and genetic markers. - Studia Dipterologica, 9: 319-326.

PECK L.V., 1988. Family Syrphidae. *In* Soos A., Papp L. (eds): Catalogue of Palaearctic Diptera. 8: 11-230. Elsevier, Amsterdam, Oxford, New York, Tokio.

RADENKOVIĆ S., VUJIĆ A., SIMIĆ S., 2002. On the identity and synonymy of two species from *Merodon ruficornis* Meigen group (Diptera Syrphidae). - Acta Ent. Serbica, 7: 51-57.

RONDANI C., 1857. Dipterologiae Italicae Prodromus. 2. Species italicae ordinis Dipterorum in genera characteribus definita, ordinatim collectae, methodo analitica distinctae, et novis vel minus cognitis descriptis. Pars prima. Oestridae: Syrpfhidae: Conopidae. - Parma, 264 pp.

SOMMAGGIO D., 2000. The species of the genus Chrysotoxum Meigen, 1822 (Diptera, Syrphidae) described by Giglio Tos. - Boll. Mus. reg. Sci. nat. di Torino, 18: 115-126.

VUCIĆ & RANDENKOVIĆ, SOMMAGGIO D., 2002. *Paragus gorgus* Vujić & Radenković, 1999: a junior synonym of *P. majoranae* Rondani, 1857 and reinstatement of *P. pecchiolii* Rondani, 1857 (Diptera, Syrphidae). - Volucella, 6: 53-56.

SOMMAGGIO D., 2005. Contributo alla conoscenza dei Sirfidi (Diptera Syrphidae) del Monte Summano. Mem. Mus. Civ. Sto. nat. Verona, 2 Serie. - Monografie Naturalistiche, 2-2005: 149-157.

SPEIGHT M.C.D., 1991. *Callicera aenea, C. aurata, C. fagesii* and *C. macquartii* redefined, with a key to and notes on the European *Callicera* species (Diptera: Syrphidae). - Dipterists Digest, 10: 1-25.

SPEIGHT M.C.D., 1988. Syrphidae known from temperate Western Europe: potential additions to the fauna of Great Britain and Ireland and a provisional species list for N. France. - Dipterists Digest, 1: 2-35.

SPEIGHT M.C.D., 1999. A key to European Xylotini (Dip.: Syrphidae). - Ent. Rec., 111: 211-217.

SPEIGHT, M.C.D., 2004. Species accounts of European Syrphidae (Diptera) 2004. *In*: SPEIGHT M.C.D., CASTELLA E., SARTHOU J.-P., MONTEIL C., (eds): Syrph the Net, the database of European Syrphidae, vol. 44, 237 pp., Syrph the Net publications, Dublin.

SPEIGHT M.C.D., CLAUSSEN C., HURKMANS W., 1998. Révision des syrphes de la faune de France: III - Liste alphabétique des espèces des genres *Cheilosia*, *Eumerus* et *Merodon* et Supplément (Diptera, Syrphidae). - Bull. Soc. Ent. Fr., 103: 401-414.

STUBBS A.E., FALK S.J., 1983. British hoverflies: an illustrated identification guide. Br. Ent. Nat. Hist. Soc., London, 253pp.

THOMPSON F.C., VOCKEROTH J.R., SPEIGHT M.C.D., 1982. The Linnaean species of flower flies (Diptera: Syrphidae). - Mem. Ent. Soc. Wash., 10: 150-165.

VERLINDEN L., 1999a. A new *Pipizella* (Diptera, Syrphidae) from the French and Italian Alps, with a key to the *Pipizella* species of Central and Western Europe. - Volucella, 4: 11-27.

VERLINDEN L., 1999b. *Cheilosia hypena* Becker, 1894 (Diptera, Syrphidae) - description of the male, re-description of the female and its separation from *Cheilosia frontalis* Loew, 1857. - Volucella, 4: 85-92.

VUJIĆ A., 1994. *Cheilosia balkana* sp. nov., new species of "*proxima*" group (Diptera, Syrphidae). - Entomofauna, 15: 445-456.