

Interpretation of Achille Costa's data on Neuropterida

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Abstract

Achille Costa was one of the very few Italian entomologists to study Neuropterida in the XIX century. His data were of fundamental importance for knowledge of this group of insects in southern Italy and the Italian islands. Unfortunately, his publications are not well known and his collection remained inaccessible for a long time. I was lucky enough to have the opportunity to study the collection, which allowed me to interpret, as far as was possible, all the data Achille Costa published on Neuropterida. I was able to use three sources: his works, his collection and the publications of Navás (who had been given the Neuropterida from Achille Costa's collection to examine at the beginning of the last century). The present work presents a main list showing all the European species in the collection seen either by myself or Navás. Two minor lists contain the "dubious" reports of Achille Costa and a list of non-European species reported by Costa or Navás and the very few still in the collection. Finally, some details are given about the present state of the Achille Costa Collection and the toponymy Costa used, as well as an updated list of his publications on Neuropterida.

Key words: Raphidioptera, Megaloptera, Planipennia, Italian entomologists, entomological collections.

Introduction

Achille Costa (Alessano [Lecce] 10 August 1823 - Rome 17 November 1898) was the zoologist who made the greatest contribution to entomological exploration of southern Italy and the Italian islands in the second half of the XIX century. Unfortunately, he died without leaving disciples to honour his work and preserve the valuable collection he had built up. His work did not get the recognition it deserved and his Collection was abandoned to the neglect of time. Up to now, many of his data have been interpreted with difficulty and only recently has his entomological material been recovered and become temporarily accessible.

Achille Costa was one of the few Italian entomologists to study Neuropterida. He devoted a volume of the Fauna del Regno di Napoli (A. Costa, 1860-70) to this taxonomic group and wrote some important papers on these insects which he had collected in Calabria, particularly Aspromonte (A. Costa, 1863) and Sila (A. Costa, 1881), and Sardinia (A. Costa, 1882a, 1883, 1884b, c, 1885a, 1886b).

Despite a study of Achille Costa's collection by the Jesuit priest Father Longinos Navás (1910, 1913), however, his neuropterological work remains largely misunderstood. Personally, it is only recently that I have had the good fortune to be able to study his Neuropterida and fix the types of species he described (Pantaleoni, 1999).

The data on Neuropterida published by Achille Costa can now be reinterpreted with reasonable certainty on the basis of an examination of the Collection, the original bibliographical references and the above mentioned work by Navás.

Materials and methods

I used three sources to interpret Achille Costa's published data on Neuropterida: his papers, his Collection, and Navás's publications (1910, 1913). These three series of data were examined together in order to compare the information they contained: locality, dates, inventory numbers.

The genitalia of specimens in the Collection were cleared, and preserved in glycerine, only when it was absolutely necessary.

I found that Achille Costa was extremely accurate in identifying the species. In other words, when he recognised a taxon he no longer mistook it for others. Consequently, I decided it was possible to group together all his reports of a certain species even if they had not been confirmed by data from the Collection and Navás's publications.

An analysis of Navás's data allowed me to identify specimens seen by him that were not present in the Collection and, at the same time, to correct his determinations.

This work produced a main list showing all the European species in the Collection seen either by myself or Navás. Two minor lists contain the "dubious" reports of A. Costa and respectively a list of non-European species reported by Costa or Navás and the very few still in the Collection.

The species in the first list are arranged and interpreted according to Aspöck *et al.* (2001) apart from a very small number of cases for which more recent data are available or about which I have a different opinion.

For each species, all the reports published by A. Costa are given, indicating (when available):

cited name of the taxon: place(s) and date(s) of capture(s), number of specimens (year of publication: page(s), figure(s) and other indications); etc.

These data were recorded as faithfully as possible, taking them from Achille Costa's lists and descriptions. However, I have made much use of square brackets [] to add other information from other parts of the same works.

For each species, after the bibliographical information, data on the material in the Collection are given. The labels of each specimen have been faithfully transcribed (not using italics for scientific names) from the highest to the lowest separating them from each other by a "/". All specimens in the Collection were pinned singly. Only those specimens that were labelled exactly the same were grouped together in the list. Whenever possible, I have indicated sex, otherwise (for instance due to lack of the apex of the abdomen) I have used the notations "ex" "exx" (*exemplar/s*). Indications of sex or "ex" do not give any information about the state of preservation. When it is really bad, particularly because of carpet beetle attacks, I have used the notation "remains". When only the pin and label are left, I have used "pin".

Within the list of specimens in the Collection I have tried to provide material for a comparison with Navás's work (1913). When the information on the labels corresponds with his published data, I have added [N] in my list. If differences exist in the data I have put the different or additional information found in Navás (1913) after the "N". Finally, for specimens reported by Navás but not found in the Collection I have given Navás's complete data in square brackets.

Results and discussion

Bibliography

A study of Achille Costa's bibliographical references required a great effort and some years of research. A complete list of his works does not exist so this part of my research was extremely difficult and complex. However, I believe there is now little chance that anything has been overlooked.

Achille Costa Collection

The Achille Costa entomological Collection, kept in the *Museo Zoologico dell'Università di Napoli Federico II*, is made up of about 20,000 specimens from all over the world, but mainly from southern Italy and Sardinia. It is in three parts: the non-European collection, the European collection, the southern Italy and Italian islands collection (earlier of the Kingdom of Naples, to which Sardinia was later added) (Maio *et al.*, 1995).

After the death of its creator, the Achille Costa entomological Collection was not given the due it deserved. Despite its importance, it has not been easily accessible to researchers (and this is true for part of it today) and it was neglected and not catalogued. Only recently have some restorative measures been undertaken. This situation was certainly influenced by the total absence of entomologists on the research staff at the beginning of

the twentieth century and the disastrous circumstances of the Institute and Museum immediately after the war (the entomological Collection miraculously survived the bombing) (Maio *et al.*, 1995).

The Neuropterida suffered perhaps a worse fate than the other groups. The Catalan Jesuit priest Longinos Navás (1858-1938) obtained the entire collection from the helminthologist Francesco Saverio Monticelli, then curator of the Museum, to study. Evidently the Neuropterida were taken out of their original boxes and crammed into a few boxes for shipment. Thus Costa's original arrangement was irremediably lost besides the subdivision into collections of different geographical origin. Navás (1910, 1913) produced two works: the first was a monograph on *Dilar parthenopaeus* and the second was a study of the Collection. We leave others to judge the quality, accuracy and usefulness of the latter.

The Collection was then inaccessible for a long time, particularly the Neuropterida that could only be seen on a few occasions by Maria Matilde Principi, who studied some types (Pantaleoni, 1999).

The Neuropterida of Achille Costa's Collection had been stored in ten small-sized (about 20x30 cm) entomological boxes bearing the following inscriptions:

1. 317 [The number on the first five boxes is probably a code]
2. 318 – *Neurotteri Planipenni di tutte le collezioni, studiati da Navás, e di cui sono state fatte le schede. Sono coperti di muffa per la lunga dimora nella stanza di Costa*
3. 331 – *Nevrotteri – Museo Zoologico – Collezione Entomologica Italia meridionale – Ascalaphus Theleproctophylla*
4. 598 – *Neurotteri Planipenni di tutte le collezioni, studiati da Navás, e di cui sono state fatte le schede. Sono coperti di muffa per la lunga dimora nella stanza di Costa*
5. 607 – *Neurotteri Planipenni di tutte le collezioni, studiati da Navás, e di cui sono state fatte le schede. Sono coperti di muffa per la lunga dimora nella stanza di Costa*
6. 609 – *Nevrotteri – Museo Zoologico – Collezione Entomologica Europea – Famiglia Hemerobiidi Genere Osmylus Sialis*
7. [number illegible] *Raphidia Inocellia*
8. [red label without inscriptions]
9. [no label; red box unlike the others which are dark]
10. [no label; containing most of Navás's material]

The labels on boxes 2, 4 and 5 are interesting. The translation is: Neuroptera Planipennia of all the collections studied by Navás and of which the index cards had been made. They are covered in mould because of the long time they had been in Costa's room.

Among the specimens of Achille Costa there were also some specimens donated by Navás to the Zoological Museum of Naples.

Due to the bad conditions of the original boxes, the Collection, subdivided into families, was recently organised into seven large (about 40x30 cm) entomological boxes with a glass cover: 1) Megaloptera, Raphidioptera; 2) Coniopterygidae, Osmylidae, Nevrothidae, Sysiridae, Berothidae, Mantispidae, Dilaridae; 3) Hem-

erobiidae; 4) Chrysopidae; 5) Myrmeleontidae I; 6) Myrmeleontidae II; 7) Ascalaphidae.

The specimens donated by Navás were placed in an eighth box. The specimens were positioned in rows parallel to the largest side of the box. By following the indexing system used at the Zoological Museum of Naples, each specimen was identified in each box by row number and by a number that increased progressively from the left to the right along the row and from the top to the bottom of the box.

When I made my second visit in 1994 the remains of a collection of exotic insects that had been badly damaged by carpet beetles were shown in a small display cabinet with glass drawers. Among them were some Neuropterida (I remember one of the Ascalaphidae in particular) which had neither been studied nor restored.

Unfortunately, it was not possible to examine any documentation about the collection of Achille Costa (index cards, records, etc).

Achille Costa used both handwritten and printed labels. The latter were certainly used more frequently as time went on. The only printed label found on the older specimens (collected before the publication of the Fauna del Regno di Napoli) was: "Fauna Napoletana". Later collections bear printed labels giving the locality (for example: Capo Figari, Scandale, Vallombrosa) often followed by a number indicating the month (for instance: 4. [for April], 7. [for July]). Some of the specimens collected in Sardinia bore the label "Geofauna Sarda A. Costa 1882-1886". Labels (often present) with the inventory number (for example: M.º Zool.º n.º 36293) were also printed.

Determination labels on specimens directly collected by Costa in southern Italy and the Italian islands were handwritten by him – examples of Costa's handwriting have been published by Pantaleoni (1999). Determination labels of material from other parts of Europe or northern Italy are often handwritten but not by Costa.

The determination labels written by Navás are all the same except for those on *Dilar parthenopaeus* (which he had previously studied). The Jesuit's label is not always the lower one on the pin. The original labels were evidently removed to be copied and then put back in any order. This may have brought about some confusion. In the Collection there is at least one specimen with labels of two different places (see *Italochrysa italica*).

Toponymy

The mention of places in Costa, in his publications and particularly on the labels, is extremely brief, sometimes non-specific. Some further information is required in order to interpret the data.

We must remember that the Kingdom of Naples lasted until 1860 so all placenames of an administrative nature prior to that date refer to the boundaries and subdivisions of the regions of that kingdom (figure 1A).

Some placenames that are otherwise difficult to understand become clear by looking at the old borders. For example, the reason why the present regions of Abruzzo and Calabria were once known under a plural name: Abruzzi, Calabrie. They were divided into *citeriore*

(hither) regions and *ulteriore* (farther) regions, in turn divided into *ultra II* and *ultra I*. Even Puglia (Apulia), although less frequently, became the Puglie because it was divided into three provinces. It must also be remembered that the Terra d'Otranto, in Apulia, included more or less the present provinces of Taranto, Brindisi and Lecce.

It is more difficult to interpret correctly the place-names Napoli (Naples) and Napoletano (Neapolitan). Napoli could indicate either the city only or the entire province (slightly smaller during the reign of the Bourbons but not much different from the present one). Napoletano could also mean the province but could indicate the area which is now the region of Campania, and which included in the Kingdom: Napoli, Terra di Lavoro and the hither and father Principato.

Another consideration to be taken into account is that in Costa's day practically only dialects were spoken in the southern regions of Italy. Some small places are indicated by Costa as simple (and perhaps not always correct) transcriptions of local names that were not yet codified and established by the impressive cartographic enterprise of the Kingdom of Italy after unification. For example, the "Madonna di Popsis" on Aspromonte near San Luca is now the Popsi Shrine, and Galagone, near Oliena in Sardinia, is now the Su Gologone spring.

The Italian Neuropterida in Achille Costa's Collection are mostly from areas of the present day regions of Campania, Calabria and Sardinia. A few were collected in other regions that were part of the Kingdom of Naples (but not in Molise) and in regions of northern Italy.

N o r t h e r n I t a l y

The material can be subdivided into three lots: i) some specimens obtained from Rondani (Camillo Rondani, Parma 1808-1879, a high school teacher and dipterologist) collected in Parma (Emilia); ii) a larger group of Neuropterida from Piedmont (NW Italy) [labelled Alpi marittime (Maritime Alps), Piemonte (Piedmont), Torino (Turin), but very likely also Alpi (Alps) and Italia settentrionale (northern Italy)], probably obtained from Vittore Ghiliani (Pinerolo (Turin) 1812 – Turin 1878, Assistant at the Zoological Museum, Turin) whose name appears on some labels, and from Antonio Garbiglietti (Biella 1807 – Turin 1887, a physician and hemipterologist); iii) a small but interesting lot of Neuropterida from Vallombrosa (near Florence) on the Tuscan- Emilia Apennines, home from 1869 to 1914 of the Royal Institute of Forestry (now a detached section of the Faculty of Agricultural and Forestry Sciences of the University of Florence) which Achille Costa probably visited between 1886 and 1893.

A b r u z z o , A p u l i a , B a s i l i c a t a a n d S i c i l y

Achille Costa visited Abruzzo several times, particularly Maiella (or Majella) and the Gran Sasso of Italy (see for example A. Costa, 1846: 91; 1881: 2). However, he published only a few reports on this region (among them some types) labelled generically Abruzzo and Gran Sasso.

The number of specimens from the other three regions is very small. For Basilicata, which he probably visited in his old age, we find two classic entomological places in the province of Potenza: Monticchio [Bagni] near Monte Vulture and [Castel] Lagopesole near Avigliano. For Apulia, where Achille Costa came from and which he must have visited regularly (see for example A. Costa 1885a: 2 footnote), we have a specimen from Cerignola (Foggia) and very few from “Terra d’Otranto” (Lecce, Leuca). Probably this is due to the presence of his brother Giuseppe at Lecce. He was the author of “Fauna Salentina” (G. Costa, 1874) and Achille would not have wanted to interfere in his brother’s activity. For Sicily we have only two specimens, from Palermo and Girgenti (now Agrigento). In this case also, Achille Costa would have preferred not to engage in studies already undertaken by others (Minà Palumbo, 1858, 1871; Hagen, 1860) – and who knows what he might have done if he had known Schneider’s work (1845)! – although Costa had visited Sicily in both his youth (the first time in 1839 at 16 years old) and old age (in 1887, 48 years later) (A. Costa, 1884f: 1).

C a m p a n i a (figure 1B)

In “Fauna del Regno di Napoli” (1860-1870) Achille Costa used the name Napoli (Naples) in its strict sense (city), explaining any references to the surrounding area (neighbourhoods, nearby areas, neighbouring hills). In contrast, only the word Napoli is found on the labels. On the other hand, the term Napoletano was used only in one of the lists of material of the Museum (A. Costa, 1871b) in an absolutely non-specific way with very little significance.

As regards the area immediately north of Naples, Achille Costa mentions only the Camaldoli hill in his “Fauna”. This is one of the highest hills in the Campi Flegrei (now in Pozzuoli commune) and a Camaldoli shrine is situated on it. On the labels (and in A. Costa, 1862b) two other places in the Campi Flegrei are also named, la Solfatara and Monte Nuovo (not Montenuovo near Orgosolo in Sardinia) a mountain of volcanic origin, which appeared in 1538 (Rodolico, 1963:29).

South of the capital, the “Fauna” mentions the area around Vesuvius (called “outskirts of Vesuvius”). Of this area, Achille Costa specifically mentions Torre del Greco, but on the labels we find also “Camaldoli d. Torre”, indicating another Camaldoli shrine, not to be confused with the previous one. For the province of Naples, Achille Costa provides some data on the island of Ischia.

The interpretation of many placenames in provinces near Naples is not a problem, thanks also to information supplied directly by A. Costa (1864b, c). These include Cancellò (San Felice a Cancellò commune) in the present day province of Caserta; Monte Vergine (Mercogliano) in Monte Partenio in the province of Avellino; Persano (Serre) and Puglietta (Campagna) both in the Valle del Sele in the province of Salerno; Baselice and, in Monte Taburno, Vitulano, in the province of Benevento; finally, the Matese mountain range (on the border between Campania and Molise).

Less precise is the name “M. di Cava”, by which Achille Costa certainly meant a mountain near Cava dei Tirreni (Salerno), probably the Forcella di Cava north of the town (now inside the Decimare Regional Park). Otherwise, but this is unlikely, it could be Monte Finestra to the southwest. Finally, it can only be hypothesised that the label “Avezzano” on three specimens (in any case banal species) refers to a town in the commune of Sessa Aurunca (Caserta) rather than Avezzano of Abruzzo (L’Aquila).

Data published by Navás (1913) contain the name Alburno which must refer to the “monti dell’Alburno” (Monti Alburni) in the province of Salerno that were visited by Achille Costa (1874).

C a l a b r i a (figure 1C)

For Calabria we have a detailed description of Achille Costa’s trips (1863, 1877a, 1881) so the interpretation of the placenames in the region is easy. We will go from south to north.

Aspromonte was explored for almost two months during his 1859 trip. He left Reggio [Calabria], crossed the mountains in a NE direction reaching first the Polsi shrine (called Popsis) in the San Luca commune and then the village itself. From here, he went down to the south, going into the territory of the coastal hills of Capo Spartivento where he explored the area around Brancaleone, Bruzzano [Zefirio], Palizzi and Staiti. Finally, along the coast to the west, he returned to Reggio [Calabria], having remained the whole time in the province.

He visited the Serre mountains during the last stage of his 1876 trip. Findings of Neuropterida came only from the Serra [S. Bruno] woods in the direction of Mongiana (Vibo Valentia).

He also went to the Sile in 1876 (he had previously made a brief stop there in June 1859 and April 1876). Achille Costa reports Neuropterida in only one place in Sila Grande: Camigliati near Camigliatello Silano (Spezzano della Sila, Cosenza) and one place in Sila Piccola: Taverna (Catanzaro). He did not visit Sila Greca. He spent a lot of time also in the hills and plain to the east of the Sile (an area corresponding roughly to the present day province of Crotona) where he captured Neuropterida in Carfizzi, Cirò, Santa Severina and Scandale. Finally, he explored the Amato hills to the south of Sila Piccola and mentions collections of Miglierina and Tiriolo.

On the basis of an unpublished manuscript in Naples, Salfi (1963) says Achille Costa visited Pollino in 1892. The Collection still contains some Neuropterida captured in the two most important places on the Calabrian side of the massif: Castrovillari and Mormanno (Cosenza).

S a r d i n i a (figure 1D)

All places in Sardinia are easily identifiable and have been identified. In any case, besides the original reports (A. Costa, 1882a, b, 1883c, d, 1996 a, b) we have Crovetti’s work on these trips (1970) with a map of Sardinia showing all the places Achille Costa went to.

In NW Sardinia (Sassari) we find the well-known

places of Alghero, Sassari, Ploaghe, Porto Torres and the island of Asinara with the neighbouring Isola Piana. Scala di Giocca is an escarpment linking the city of Sassari to the valley of the Rio Mascari.

In NE Sardinia (still in the province of Sassari) Achille Costa mentions Neuropterida in Capo Figari (Golfo Aranci) and Terranova, which is now Olbia.

Continuing along the east coast of Sardinia, he mentions Posada, Siniscola and a spring on the nearby Monte Albo in the province of Nuoro, then Muravera, near the mouth of the Flumendosa, further south in the province of Cagliari.

Most of the reports, however, refer to the Gennargentu massif and surrounding area (province of Nuoro). North of the massif, in the Nuoro hills, we have Orani and

Galagone, now called Su Gologone (Oliena); to the south, in the Sarcidano hills, Laconi. [Arcu] Correboi is the mountain pass dividing the communes of Fonni and Villagrande Strisaili and therefore western and eastern Gennargentu. Fonni, Desulo and Aritzo are found on the western and the Supramonte of Orgosolo with Montenuovo (today Monte Novo San Giovanni) on the eastern Gennargentu.

For the province of Oristano only Milis, on the lower course of the Tirso, is mentioned. The town of Carloforte on the island of San Pietro (SW Sardinia) is in the province of Cagliari. Besides the city of Cagliari, Achille Costa reports Neuropterida from Molentargius, a brackish pool [now in the city] between Cagliari and Quartu S. Elena.

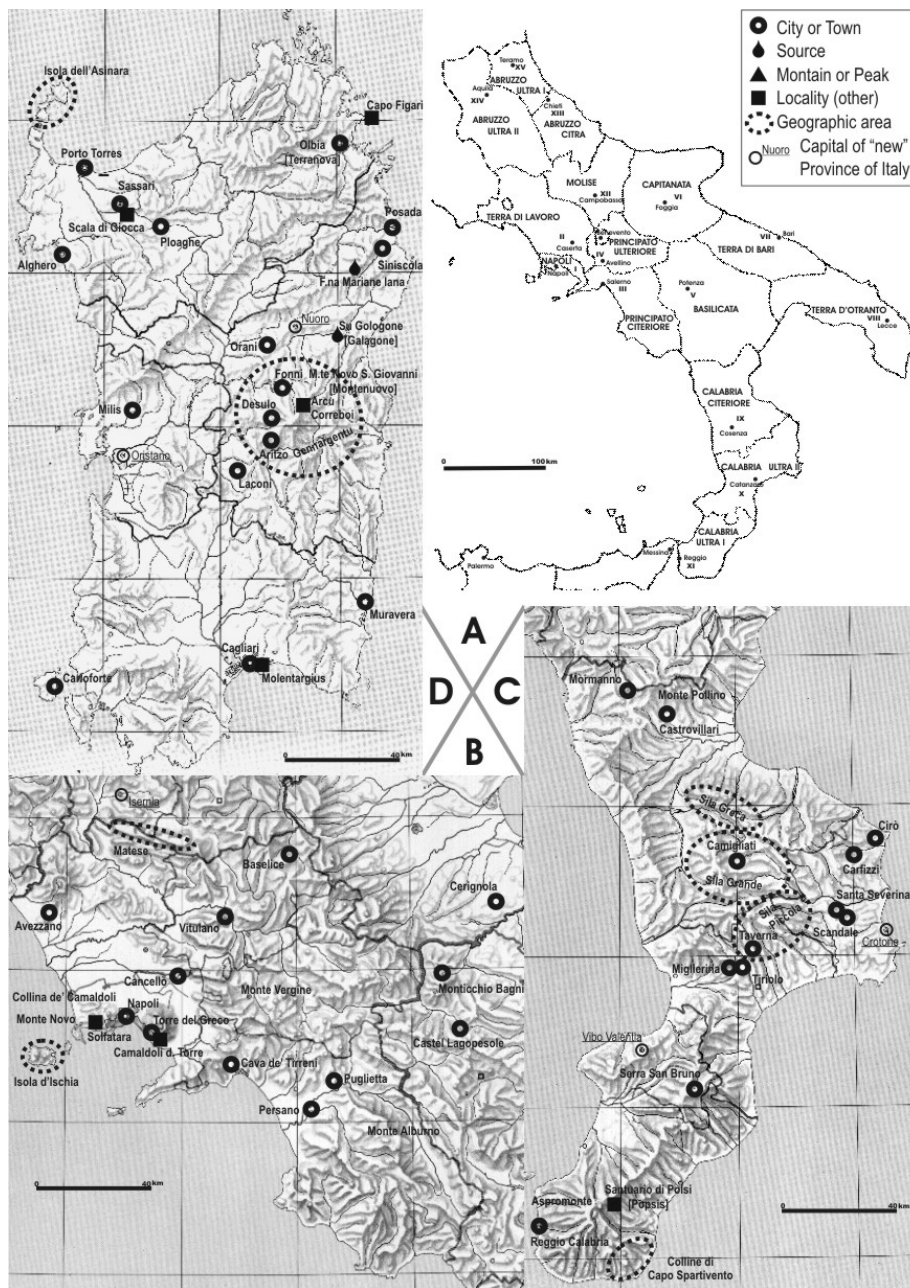


Figure 1. A) Ancient provinces of the Kingdom of Naples excluding Sicily. B) Campania, C) Calabria, D) Sardinia: present day provinces (names of the capitals of the “new” provinces: light emphasis) and places (bold) mentioned in this paper.

List of European species

Raphidiidae

Phaeostigma notata (Fabricius, 1781)

1♀ – M.° Zool.° n.° 43317 \ *Raphidia affinis*, Schd. Wallis

Subilla confinis (Stephens, 1836)

R[h]aphidia colubroides: Calabrie (1855e: 5 and 8, tav. XII, fig. 4); [*Raphidia*] *colubroides*, A. Cost.: Calabrie 1 ex (1871b: 15, n. 194)

1♀ – [square of green paper] \ *colubroides* \ *Raphidia cognata* ? Rb. Navás S.J. det \ Lectotypus *Raphidia colubroides* A. Costa, 1855 Pantaleoni des. 1993 [N]

See Pantaleoni (1999).

Ornatoraphidia flavilabris (A. Costa, 1855)

[*Rhaphidia ophiopsis*] var. *flavilabris*: Monte Vergine [luglio] (1855e: 4 and 8, tav. XII, fig. 2B); *Raphidia ophiopsis*, Schum. var. *flavilabris*: [Monti Partenii luglio 1854] (1858: 10 and 17); [*Raphidia ophiopsis*] var. *pallipes*, A. Cost.: M.[onte] Vergine 1 ex (1871b: 15, n. 192)

1♀ – *Raphidia ophiopsis* v. *pallipes*, n. M. Vergine \ *Raphidia ophiopsis* L. Navás S.J. det \ Lectotypus *Raphidia ophiopsis* v. *flavilabris* A. Costa, 1855 Pantaleoni des. 1993 [N]

See Pantaleoni (1999).

Xanthostigma xanthostigma (Schummel, 1832)

1♀ – M.° Zool.° n.° 45187 \ *Raphidia xanthostigma* Schum. Navás S.J. det \ *Raphidia xanthostigma*, Schum. Germania [N]

Xanthostigma aloysiana (A. Costa, 1855)

Rhaphidia Aloysiana: Abruzzi (1855e: 4 and 8, tav. XII, fig. 3, 3A and 3B); [*Raphidia*] *Aloysiana*, A. Cost.: Abruzzi 1 ex (1871b: 15, n. 193)

1♀ – *alloysiana* \ *Raphidia aloysiana* Costa Navás S.J. det \ *Agulla Aloysiana* Costa (Principi det.) \ Lectotypus *Raphidia aloysiana* A. Costa, 1855 Pantaleoni des. 1994 [N]

See Pantaleoni (1999).

Raphidia mediterranea H. Aspöck, U. Aspöck and Rausch, 1977

Rhaphidia ophiopsis: adiacenze di Napoli (1855e: 3 and 8, tav. XII, fig. 2 and 2A); *Raphidia ophiopsis*, Deg.: Napoletano 2 ex (1871b: 15, n. 191)

1♀ – Fauna Napoletana \ *Raphidia ophiopsis* L. Navás S.J. det \ *Raphidia ophiopsis*, s.l. [???] Camaldoli [N Lancaldoli]
remains – *Raphidia ophiopsis* L. Navás S.J. det

This species was known in Italy in some localities in Apulia (Aspöck H. *et al.*, 1991; Güsten, 1998) and one locality in Lazio (Letardi and Pantaleoni, 1996). I have also seen a ♀ labelled “Roma - Nazzano V-1986 Leg. Perego G.” The specimen in Costa’s Collection is therefore the first for Campania.

The hypothesis that the distribution of *R. mediterranea* in Italy is confined to the Apulian coasts and is probably of allochthonous origin (Aspöck H. *et al.*, 1991) is therefore much weakened.

Inocelliidae

Fibla maclachlani (Albarda, 1891)

Inocellia crassicornis, Schum.: adiacenze di Cagliari [9-11 luglio 1883] (1884d: 32)

Inocellia crassicornis, Schum.: Carloforte dal Dottor Gaetano Costa-Ramo [8 agosto 1883] (1884d: 23 and 32 footnote)

remains – Cagliari. 4. \ M.° Zool.° n.° 30530 \ *ln. crassicornis*
remains – Carlo Forte

Strangely, Achille Costa did not recognise this species which is remarkably distinct from *Parainocellia bicolor*.

The date given for Carloforte is when Dr Gaetano Costa-Ramo gave him the specimen. The date of the Cagliari specimen (July 1883) provided by Costa is also evidently inaccurate. This specimen, according to the labels (date and code) was captured in April 1882. This date matches the flying period of *F. maclachlani* in nature, which, in my experience, does not extend beyond the month of May, particularly at sea level.

Parainocellia bicolor (A. Costa, 1855)

Inocellia crassicornis: adiacenze di Napoli [primavera inoltrata fino a tutta la state] (1855e: 7 and 8, tav. XII, fig. 5); [*Inocellia crassicornis*] var. *bicolor* [adiacenze di Napoli] (1855e: 7 and 8); *Inocellia crassicornis*: (1857: 19; 1877b: 29); *Inocellia crassicornis*, Hartl.: Napoletano 4 exx (1871b: 15, n. 195).

- 1♂ – *Inocellia crassicornis* Schm. Navás S.J. det \ Fauna Napoletana \ Raphidia (*Inocellia*) *crassicornis*, Schm. Napoli [N]
 - 1♂ – Cancellò \ *Inocellia crassicornis* Schm. Navás S.J. det
 - 1♀ – ♀ \ *Inocellia crassicornis* Schm. Navás S.J. det
- See Pantaleoni (1999).

Sialidae

Sialis lutaria (Linnaeus, 1758)

Sembris lutaria, Lin.: Parma 2 exx [ex Rondani] (1864a: 97, n. 20)

- 1♀ – M.° Zool.° n.° 7813 \ *Sialis lutaria* Parma [preparation]

A species extraneous to the fauna of the Kingdom of Naples, not collected directly by Achille Costa.

Sialis sp.

- 1ex – M.° Zool.° n.° 42055 \ *Sialis lutarius*, Linn. Francia
- 1♂ – M.° Zool.° n.° 42054 \ *Sialis fuliginosa*, Francia
- remains – {no label}

I did not believe it worthwhile to make a preparation of the ♂ and it thus remains unspecified. The remains without labels may belong to the second specimen from Parma from the Rondani collection (see above).

Nevrorthidae

Nevrorthus iridipennis A. Costa, 1863

Nevrorthus iridipennis, A. Cost.: valli di Aspromonte (1863: 33, 65 and 80, n. 651, tav. III [IV in the text at pag. 80], fig. 7);

Nevrorthus iridipennis: valli dell'Aspromonte (1871a: 4, tav. XIII, fig. 4 [3 in the text]); *Nevrorthus iridipennis*, A. Cost.: Calabria 1 ex (1871b: 14, n. 182)

- 1♀ – *Nevrorthus fallax*? Ramb. Navás S.J. det \ *Nevrorthus iridipennis* n. Asprom. \ Lectotypus *Nevrorthus iridipennis* A. Costa, 1863 Pantaleoni des. 1993 [N]

See Pantaleoni (1999).

Osmylidae

Osmylus fulvicephalus (Scopoli, 1763)

Osmylus maculatus: Abruzzi, Calabrie, Sile (1855c: 3 and 21, tav. X, fig. 1); *Osmylus maculatus*, F.: valli dell'Aspromonte (1863: 64, n. 644); *Osmylus maculatus*, Fab.: monti calabri 2 exx (1871b: 14, n. 171)

[*Osmylus maculatus*] var. *vittatus*: [Abruzzi, Calabrie, Sile] (1855c: 3 and 21); [*Osmylus maculatus*] var. *rarimacula*: [Abruzzi, Calabrie, Sile] (1855c: 3 and 21, tav. X, fig. 1A); [*Osmylus maculatus*] var.: monti abruzzesi 2 exx (1871b: 14, n. 172)

- 1♀ – *Osmylus maculatus* Popsis \ *Osmylus fulvicephalus* Scop. Navás S.J. det [N Poggio]
- 1♂ – *Osmylus fulvicephalus* Sc. Navás S.J. det
- 1♂ – *Osmylus maculatus*, var. Abr. \ *Osmylus fulvicephalus* Sc. Navás S.J. det \ Lectotypus *Osmylus maculatus* v. *rarimacula* A. Costa, 1855 Pantaleoni des. 1993 [N]
- pin – Vallombrosa \ M.° Zool.° n.° 37365 \ *Osmylus maculatus* F. \ *Osmylus fulvicephalus* Scop. Navás S.J. det [N]

I agree with the hypothesis, which has not been demonstrated but is extremely likely, that the *vittatus* variety described by Achille Costa is a synonym of *O. fulvicephalus*, see Pantaleoni (1999).

Chrysopidae

Italochrysa italica (Rossi, 1790)

Hemerobius italicus: dipendenze del Vesuvio [state] (1855c: 18 and 21, Tav. XI, fig. 5); [*Hemerobius*] *italicus*, Ross.: Napoletano 2 exx (1871b: 14, n. 188)

- 1♂ – Reggio \ *Nothochrysa italica* Rossi Navás S.J. det [N]
- 1♀ – Castrovillari \ M.° Zool.° n.° 44703 \ *Nothochrysa italica* Rossi Navás S.J. det \ *Hemerobius italicus*, Ros. Camald. di Torre [N]

The ♀ has labels of two localities, Castrovillari near Monte Pollino and Camaldoli di Torre, corresponding to Achille Costa's reports (1855c) for Vesuvius and handwritten. This is evidently a mix-up, probably on the part of Navás (1913).

On the other hand, it is very strange that Achille Costa never mentioned the Reggio [Calabria] specimen (label written in his hand), probably collected during his exploration of Aspromonte in 1959.

Nineta pallida (Schneider, 1846)

Hemerobius erythrocephalus, Rmb.: boschi di Serra [in direzione di Mongiana 7 settembre 1876] (1881: 30 and 52)

1ex – Boschi di Serra \ *Chrysopa pallida* Schn. Navás S.J. det [N *Hemerobius erythrocephalus*]

Navás (1913) transcribes also the determination label, probably handwritten by Achille Costa, which, however, has been lost.

Chrysopa perla (Linnaeus, 1758)

Hemerobius chrysops: Monte Vergine [luglio] (1855c: 17 and 21, tav. XI, fig. 4); *Hemerobius chrysops*, Lin. (*Chrysopa reticulata*, Burm.): nelle vallate [Monti Partenii luglio 1854] (1858: 10 and 17); [*Hemerobius*] *chrysops*, Lin.: M.[onte] Vergine 4 exx (1871b: 14, n. 187)

Navás – [1913: p. 10, 59. *Chrysopa perla* L. – *Hemerobius chrysops* L. Montevergin.

1♀ – *Chrysopa perla* L. Navás S.J. det

remains – *Chrysopa perla* L. Navás S.J. det

remains – *Chrysopa perla* L. Navás S.J. det

1♀ – Vallombrosa \ M.° Zool.° n.° 37366 \ *Chrysopa perla* L. Navás S.J. det \ *Chrysopa reticulata* Evans [N]

1♂ – 15 juni 92 Alnus \ M.° Zool.° n.° 43583 \ *Chrysopa perla* L. Navás S.J. det \ *Chrysopa ventralis*, Ct. Germania [N]

A specimen with the label “Monte Vergine” reported by Navás (1913) has been lost. The three specimens with no labels could belong to the same series of four collected in the same locality (A. Costa, 1871b).

Chrysopa abbreviata Curtis, 1834

1♂ – M.° Zool.° n.° 43582 \ *Chrysopa abbreviata* Curt. Navás S.J. det \ *Chrysopa dorsalis*, Burm. Wallis [N]

1♀ – M.° Zool.° n.° 45185 \ *Chrysopa abbreviata* Curt. Navás S.J. det \ *Chrysopa phyllochroma*, Wsm. Germania [N]

Chrysopa formosa Brauer, 1850

Hemerobius Beckii: adiacenze di Napoli (1855c: 16 and 21, tav. XI, fig. 3, 3A); [*Hemerobius*] *Beckii*, A. Cost.: Napoletano 2 exx (1871b: 14, n. 186)

Chrysopa Beckii, A. Cost.: presso Scala di Giocca [23 agosto 1883] (1884d: 31)

1♀ – Fauna Napoletana \ *Chrysopa formosa* Brau. Navás S.J. det \ *Hemerobius Beckii*, A. Cos. Napoli \ Lectotypus *Hemerobius Beckii* A. Costa, 1855 Pantaleoni des. 1993 [N]

1ex – Baseliçe \ *Chrysopa formosa* Brau. Navás S.J. det

1ex – Scala di Giocca. 8. \ M.° Zool.° n.° 32787 \ Geofauna Sarda A. Costa 1882-1886 \ *Chrysopa formosa* Brau. Navás S.J. det [N]

1♂ – *Chrysopa formosa* Brau. Navás S.J. det \ *Chrysopa burmeisteri* Sch. Castrovillari [N]

It is interesting to note that Achille Costa, who knew this species well, and had described it in 1855(c) as *H. Beckii*, named the Castrovillari specimen (probably collected in 1892) *Chrysopa burmeisteri* Schneider, 1851, tacitly accepting the synonymy *Chr. burmeisteri* = *H. Beckii*. See also Pantaleoni (1999).

Chrysopa pallens (Rambur, 1838)

[*Chrysopa*] ...?: Presso Scala di Giocca [23 agosto 1883] (1884d: 31); *Chrysopa septempunctata*, Wesm. = *Chrysopa* ...? mem.^a 3^a: (1885a: 5)

1♀ – Scala di Giocca. 8. \ M.° Zool.° n.° 32786 \ Geofauna Sarda A. Costa 1882-1886 \ *Chrysopa 7-punctata* Wesm. Navás S.J. det [N]

1♀ – Napoli Praus \ Fauna Napoletana \ *Chrysopa 7-punctata* Wesm. Navás S.J. det [N]

1♀ – M. di Cava \ *Chrysopa 7-punctata* Wesm. Navás S.J. det [N]

Achille Costa did not recognise this species until the publication of the IV Memoria della Geo-fauna Sarda (1885a). The two Neapolitan specimens were certainly collected before the Sardinian ones.

The name Praus on the labels of the Naples female must refer to the malacologist Carlo Praus Franceschini (Maio et al., 1995).

Dichochrysa prasina (Burmeister, 1839)

Hemerobius Ramburii: Abruzzi (1855c: 14 and 21)

[*Hemerobius*] *Ramburii*, A. Cost.: Calabria 3 exx (1871b: 14, n. 184); [*Hemerobius*] *Ramburii*, A. Cost.: adiacenze di Santa Severina [24-26 e 29-31 luglio 1876] (1881: 52)

[*Chrysopa*] *prasina*, Ramb.: boschetto attiguo a Ploaghe [24 agosto 1883] (1884d: 19 and 31)

1♀ – Ch. prasina Burm. v. striata Nav. Navás S.J. det \ *Hemerobius Ramburii*, n. prasinus, Ramb. Abruzzi \ Lectotypus *Hemerobius Ramburii* A. Costa, 1855 Pantaleoni des. 1993 [N]

1♀ – *Chrysopa 7-punctata* Wesm. Navás S.J. det

1♀ – Ch. prasina Burm. v. punctigera Sel. Navás S.J. det [N]

1♀ – Ch. prasina Burm. v. striata Nav. Navás S.J. det

1♂ – Ploaghe. 8. \ M.° Zool.° n.° 32789 \ prasinus Rmb. \ Geofauna Sarda A. Costa 1882-1886 \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]

1♂1♀1ex – Ploaghe. 8. \ Geofauna Sarda A. Costa 1882-1886 \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det

1♀ – Castrovillari \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det

1♀ – Lagopesole \ M.° Zool.° n.° 44705 \ aspersa Wsm. \ Ch. prasina Burm. v. striata Nav. Navás S.J. det [N]

1♂ – Lagopesole \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]

1♀ – Avezzano \ M.° Zool.° n.° 44926 \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]

1♀ – M.° Zool.° n.° 43311 \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det \ *Chrysopa prasina*, Brm. Wallis

Achille Costa well knew the problems relating to the taxonomy of the “*prasina*” group (Pantaleoni, 1999). The fact that he called the Ploaghe (Sardinia) specimens *Chr. prasina*, Rambur (and not Burmeister) confirms that he believed the populations of southern Italy and the Italian islands to be different from those of central Europe. It can be seen from Navás’s non-uniform determinations that this problem remains a tricky one, even today. See also *D. ventralis*.

Dichochrysa zelleri (Schneider, 1851)

[*Hemerobius*] ...?: bosco di Scandale [26-29 luglio], adiacenze di Taverna [24-25 agosto 1876] (1881: 52)

- 2♂♂2♀♀ – Scandale \ Ch. prasina Burm. v. zelleri Schn. Navás S.J. det [N]
- 1♂ – Taverna \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]
- 1♂ – Camaldoli 76[?]0 \ Fauna Napoletana \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]
- 1ex – Majella \ Chrysopa Genei Ramb. Navás S.J. det [N]
- 1♀ – Mormanno \ Ch. prasina Burm. v. zelleri Schn. Navás S.J. det [N]

Achille Costa recognised, but did not name, this species thanks to a small series collected in Calabria in 1876. A single Neapolitan specimen, certainly collected earlier, is in the Collection. In this case too, Navás’s determinations are fairly non-homogeneous.

Dichochrysa ventralis (Curtis, 1834)

- 1♀ – Vallombrosa \ M.° Zool.° n.° 37367 \ Chr. aspersa Wesm \ Ch. prasina Burm. v. adspersa Wesm. Navás S.J. det [N]

The determination label bearing the name *Chr. aspersa* Wesm. is handwritten, probably by Achille Costa. He therefore recognised that *D. ventralis* (for him *aspersa*) was different from *D. prasina* (for him *Ramburii*) and *D. zelleri* (for him *sp.?*). Within this group of species I have however found the only real error of identification made by Achille Costa. He identified as *Chr. aspersa* Wsm. also a specimen from Lagopesole (Basilicata) belonging to *D. prasina*.

Dichochrysa genei (Rambur, 1842)

[*Hemerobius*] *neglectus*, A. Cost. [*partim*]: Calabria 4 exx (1871b: 14, n. 185)

- 1ex – Calabria \ Chrysopa Genei Ramb. Navás S.J. det [N]
- remains – Fauna Napoletana \ Chrysopa Genei Ramb. Navás S.J. det \ Solfatara [N]

Achille Costa did not recognise this species which is difficult to distinguish from *D. clathrata* when decoloured individuals are examined. My own identifications are based almost exclusively on the shape of the claw.

Dichochrysa clathrata (Schneider, 1845)

Hemerobius neglectus: Calabrie (1855c: 15 and 21, tav. XI, fig. 2); [*Hemerobius*] *relictus*, A. Cost.: Aspromonte (1863: 65, n. 650); [*Hemerobius*] *neglectus*, A. Cost. [*partim*]: Calabria 4 exx (1871b: 14, n. 185)

[*Chrysopa*] *neglecta*, A. Cost.: presso Milis [15 agosto 1883] (1884d: 16 and 31); *Chrysopa Genei*, Ramb.: adiacenze di Siniscola [28 luglio] e Posada [20-21 luglio 1885] (1886b: 14 and 21)

- remains – Chrysopa genei Ramb. Navás S.J. det \ Hemerobius neglectus, A. Cos. Calabria \ Lectotypus Hemerobius neglectus A. Costa, 1855 Pantaleoni des. 1993 [N]
- 1♀ – Calabria \ Chrysopa Genei Ramb. Navás S.J. det [N]
- remains – Ploaghe. 8. \ Geofauna Sarda A. Costa 1882-1886 \ Chrysopa Genei Ramb. Navás S.J. det [N]
- 1♂ – Siniscola 7. \ M.° Zool.° n.° 36293 \ Geofauna Sarda A. Costa 1882-1886 \ Chrysopa Genei Ramb. Navás S.J. det [N]
- 1♂ – Siniscola 7. \ Geofauna Sarda A. Costa 1882-1886 \ Ch. prasina Burm. v. zelleri Schn. Navás S.J. det [N]

See what is stated about the previous species and in Pantaleoni (1999). Navás (1913) identified ♂ from Siniscola as *D. zelleri* and this is the basis for the only citation in Sardinia of this species, which seems, on the contrary, to be absent from the island.

Chrysoperla carnea s.l. [(?) *lucasina* (Lacroix, 1912)]

Hemerobius perla: contorni di Napoli [aprile 1842] (1843: 47); *Hemerobius perla*: Regno (1855c: 13 and 21, tav. XI, fig. 1);

Hemerobius perla, Lin.: [Monti Partenii luglio] (1858: 17); *Hemerobius perla*, Lin.: Napoletano 3 exx (1871b: 14, n. 183)

Hemerobius perla, L.: [Aspromonte] (1863: 65, n. 649)

Chrysopa perla, Lin.: [Sardegna] in varii luoghi (1882a: 22); *Chrysopa perla*: unica *Chrysopa* vista fino allora, [15 agosto 1883], [in Sardegna] (1884d: 16)

- 1♀ – Chrysopa vulgaris Schn. Navás S.J. det \ Fauna Napoletana \ Hemerobius perla, Lin. Napoli [N]
- Navás – [1913: p. 9, 50. *Chrysopa vulgaris* Leach – Solfatara.]
- 1♀ – Santa Severina \ Chrysopa vulgaris Schn. Navás S.J. det [N]
- 3♂♂1♀1ex – Chrysopa vulgaris Schn. Navás S.J. det
- 1ex – Capo Figari 7. \ M.° Zool.° n.° 36294 \ Geofauna Sarda A. Costa 1882-1886 \ Chrysopa vulgaris Schn. Navás S.J. det [N]
- 1♀ – Castrovillari \ M.° Zool.° n.° 44704 \ Chrysopa vulgaris Schn. Navás S.J. det [N vittata Wsm. n. 704]
- remains – Castrovillari \ Chrysopa vulgaris Schn. Navás S.J. det
- 1♂ – Mormanno \ Chrysopa vulgaris Schn. Navás S.J. det [N]
- 1♂ – Monticchio \ Chrysopa vulgaris Schn. Navás S.J. det [N]

- 1♂ – Avezzano \ M.° Zool.° n.° 44925 \ *Chrysopa vulgaris* Schn. Navás S.J. det [N]
 1♂ – Avezzano \ *Chrysopa vulgaris* Schn. Navás S.J. det
 1♂ – M.° Zool.° n.° 43313 \ *Chrysopa vulgaris* Schn. Navás S.J. det \ *Chrysopa flavifrons*, Br. Wallis [N]
 pin – Spagna \ *Chrysopa vulgaris* Schn. Navás S.J. det [N]
 Navás – [1913: p. 9, 50. *Chrysopa vulgaris* Leach. – 28. M. Zool. N. 45180.]

Given the material is not in an optimal state of preservation, it was impossible for me to go beyond a generic indication of *Chr. carnea* s.l. although I believe that most of the material from Italy belongs to *Chr. lucasina*. The Sardinian specimen from Capo Figari must have been collected on 3-4 July 1885 when Achille Costa made his last trip to the island (*teste* place and month of capture).

H e m e r o b i i d a e

(?) *Hemerobius stigma* Stephens, 1836

- remains – M.° Zool.° n.° 43593 \ *Hemerobius strigosus* Zett. Navás S.J. det \ *Hemerobius strigosus*, Zett. Wallis [N]

Hemerobius contumax Tjeder, 1932

- 1♀ – Vallombrosa \ M.° Zool.° n.° 37383 \ *Boriomyia subnebulosa* St. Navás S.J. det

A species reported several times in fir woods in the Tuscan-Emilia Apennine area not far from Vallombrosa (Pantaleoni *et al.*, 1994).

(?) *Hemerobius nitidulus* Fabricius, 1777

- 1♀ – M.° Zool.° n.° 43592 \ *Hemerobius nitidulus* F. Navás S.J. det \ *Hemerobius nitidulus*, Fab. Wallis [N]
 1♂ – M.° Zool.° n.° 45186 \ *Hemerobius nitidulus* F. Navás S.J. det \ *Hemerobius pellucidus*, Wlk. Germania [N]

Hemerobius micans Olivier, 1792

Mucropalpus irroratus: montagne del Matese, presso la Capitale [Napoli] (1855c: 11 and 21, tav. X, fig. 7); [*Mucropalpus*] *irroratus*, A. Cost.: Napoletano 4 exx (1871b: 14, n. 178)

Mucropalpus irroratus, A. Cos.: boschi di Serra [5-7 settembre 1876] (1881: 52)

- Navás – [1913: p. 7, 37. *Hemerobius micans* Oliv. – *Mucropalpus irroratus*. Matese 4790.]

- 1♀ – Cancellò \ *Hemerobius micans* Oliv. Navás S.J. det [N]
 2♂♂, pin – *Hemerobius micans* Oliv. Navás S.J. det
 1♀ – Boschi di Serra \ *Hemerobius micans* Oliv. Navás S.J. det [N]
 1♀ – Pollino \ M.° Zool.° n.° 44706 \ *Hemerobius micans* Oliv. Navás S.J. det [N]

See Pantaleoni (1999) for the synonymy with *M. irroratus* A. Costa, 1855.

(?) *Hemerobius lutescens* Fabricius, 1793

- 1ex – M.° Zool.° n.° 43594 \ *Hemerobius lutescens* F. Navás S.J. det \ *Hemerobius humulinus*, Lin. Wallis [N]

Hemerobius gilvus Stein, 1863

Mucropalpus lutescens: adiacenze di Napoli [dalla metà di primavera fino a tutta la state] (1855c: 8 and 21, tav. X, fig. 6 [5 in the text]); *Mucropalpus lutescens*, Fab.: Napoletano 1 ex (1871b: 14, n. 176)

[*Mucropalpus*] *lutescens*, Fab.: vicinanze di Aritzo [21-22 luglio 1883] (1884d: 31)

- 1♂ – Fauna Napoletana \ *Hemerobius lutescens* F. Navás S.J. det \ *Mucropalpus lutescens*, Fabr. Camaldoli [N]
 remains – Aritzo. 7. \ M.° Zool.° n.° 32781 \ *lutescens* \ Geofauna Sarda A. Costa 1882-1886 \ *Hemerobius lutescens* F. Navás S.J. det [N 32787 as *Hemerobius micans*]
 1ex – Montenuovo. 8. \ M.° Zool.° n.° 32782 \ *Hemerobius micans* Oliv. Navás S.J. det [N as *Hemerobius lutescens*]

H. gilvus has only recently been distinguished from *H. lutescens* in entomological studies on Neuropterida (Aspöck, 1963; Aspöck H. *et al.*, 1980) that Achille Costa could not know of. In this case Montenuovo is a place on the Orgosolo Supramonte. An examination of this material leads us to assert that Navás's (1913) reports of *H. micans* and *H. lutescens* in Sardinia are mistaken since as far as I know neither of these species is present on the island.

Wesmaelius quadrifasciatus (Reuter, 1894)

[*Micromus*] ? : Alpi 1 ex (1869: 12, n. 129 aut 131 aut 132 aut 133)

- 1♀ – [square of green paper] \ M.° Zool.° n.° 7805 \ *Boriomyia subnebulosa* St. Navás S.J. det [preparation]

It was not easy to match this specimen with the bibliographical indication published by Achille Costa (1869) in one of the lists of material in the Naples Museum. I believe that a coordinated “reading” of the code numbers, localities of capture and the appearance of the labels has, however, allowed me to reach a reliable result, identifying a small series of Hemerobiidae from the Alps, probably the western Alps near Turin, supplied by V. Ghiliani.

Wesmaelius malladai (Navás, 1925)

[*Micromus*]?: Alpi 1 ex (1869: 12, n. 129 aut 131 aut 132 aut 133)

- 1♂ – [square of green paper] \ M.° Zool.° n.° 7808 \ Boriomyia subnebulosa St. Navás S.J. det \ *Micromus* [??] Ghil.[iani], 6[?]5 [preparation; N Alpi]
- 1♀ – M.° Zool.° n.° 43590 \ Boriomyia subnebulosa St. Navás S.J. det \ *Hemerobius nervosus*, Fab. Germania [preparation; N]

See the previous species. Navás gives an “Alpi” for the specimen with inventory number 7808, probably the label was lost.

Wesmaelius subnebulosus (Stephens, 1836)

Mucropalpus distinctus: collina de' Camaldoli [primavera inoltrata] (1855c: 9 and 21, tav. X, fig. 5 [6 in the text]);

[*Mucropalpus*] *distinctus*, Ramb.: Napoletano 3 exx (1871b: 14, n. 177)

Mucropalpus distinctus, Ramb.: montagne di Desulo [23-31 luglio 1883] (1884d: 31)

- 1♀ – Fauna Napoletana \ Boriomyia subnebulosa St. Navás S.J. det \ *Mucropalpus distinctus*, Rb. Napoli [preparation; N 48.25]
- 1♀ – Cerignola \ M.° Zool.° n.° 28498 \ Boriomyia subnebulosa St. Navás S.J. det [preparation; N]
- 1ex – Desulo. 7. \ M.° Zool.° n.° 32780 \ Geofauna Sarda A. Costa 1882-1886 \ Boriomyia subnebulosa St. Navás S.J. det [N]

The inventory number transcribed by Navás for the Naples specimen is not correct and there is no corresponding label.

The Desulo specimen is actually indeterminable, but the only species of the genus collected in Sardinia is *W. subnebulosus* (Bernardi Iori *et al.*, 1995; unpublished data).

Wesmaelius sp.

[*Micromus*]?: Alpi 1 ex (1869: 12, n. 129 aut 131 aut 132 aut 133)

- pin – [square of green paper] \ M.° Zool.° n.° 7806 \ *Micromus* \ Boriomyia subnebulosa St. Navás S.J. det [N]

See what has been stated for *W. quadrifasciatus* and *W. malladai*.

Symphorobius pygmaeus (Rambur, 1842)

[*Mucropalpus parvulus*] var. *pallidus*: colline vicine alla capitale [Napoli primavera inoltrata, state] (1855c: 12 and 21);

[*Mucropalpus*] *parvulus*, Ramb.: Napoletano 2 exx (1871b: 14, n. 180)

Mucropalpus parvulus, Rb.: valle di Bruzzano (1863: 65, n. 647)

[*Mucropalpus*] *parvulus*, Ramb.: montagne di Desulo [23-31 luglio], bosco di Orani [7 agosto] e di Ploaghe [24-25 agosto 1883] (1884d: 31)

- 1♂ – -var. \ *Symphorobius conspersus* Nav. Navás S.J. det \ Lectotypus *Mucropalpus parvulus* var. *pallidus* A. Costa, 1855 Pantaleoni des. 1993 [N]
- 1♂ – Vitulano \ *Symphorobius conspersus* Nav. Navás S.J. det [N Vitulano]
- 1♂ – Puglietta 9 \ *Symphorobius conspersus* Nav. Navás S.J. det [N]
- 1♂ – Valle di Bruzzano \ *Symphorobius conspersus* Nav. Navás S.J. det [preparation; N Valle di Brugjano]
- 1ex – M. di Desulo. 7. \ *parvulus* var. \ Geofauna Sarda A. Costa 1882-1886 \ *Symphorobius conspersus* Nav. Navás S.J. det [N]
- 1ex – Correboi. 8. \ Geofauna Sarda A. Costa 1882-1886 \ *Symphorobius conspersus* Nav. Navás S.J. det [N]
- 1♀ – Orani. 8. \ Geofauna Sarda A. Costa 1882-1886 \ *Symphorobius conspersus* Nav. Navás S.J. det [N]
- 1ex – Ploaghe. 8. \ Geofauna Sarda A. Costa 1882-1886 \ *Symphorobius conspersus* Nav. Navás S.J. det [N]

All the specimens attributed to this species were identified by Navás as *S. conspersus*. Apart from the use of a different name, for once there is an identity of opinion with the Spanish author. Achille Costa considered the Desulo specimen to be slightly different (*teste* the indication *var.*) but the state of preservation did not allow any appreciable difference to be found. See also Pantaleoni (1999).

Symphorobius luqueti Leraut, 1991

Mucropalpus parvulus: colline vicine alla capitale [Napoli primavera inoltrata, state]. (1855c: 11 and 21, tav. X, fig. 8)

- 1♀ – Fauna Napoletana \ *Symphorobius elegans* Steph. Navás S.J. det \ *Mucropalpus parvulus*, Rb Napoli [N]
- Navás – [1913: p. 8, 42. *Symphorobius elegans* Steph. – Ploaghe. 8.]
- Navás – [1913: p. 8, 42. *Symphorobius elegans* Steph. – Correboi. 8.]

I attribute to this species, not accepted by everyone, the Naples specimen, which is well preserved, identified by Navás as *S. elegans*. *S. luqueti* is actually very dark and may be, although only very superficially, confused with *S. elegans*. I believe that the description of *M. parvulus* in the “Fauna del Regno di Napoli” corresponds also to this specimen, and thus to *S. luqueti*. The labels – the handwritten determination of Achille Costa and the “Fauna Napoletana” printed – correspond to many specimens (see *Raphidia ophiopsis*, *Inocellia crassicornis*, *Hemerobius Beckii*, *Hemerobius perla*, *Mucropalpus lutescens*, *Mucropalpus distinctus*, *Megalomus pyraloides*, *Myrmeleon innotatus*, *Myrmeleon variegatus*) used as reference for the descriptions provided in the “Fauna del Regno di Napoli”. The description of *Mucropalpus parvulus* (A. Costa, 1855c: 11-12) refers to a particularly dark specimen (which, I repeat, I believe to be the specimen of *S. luqueti* that is still in the Collection) in contrast to others (more than one) that are lighter and which were established to be of the *pallidus* variety (which I believe to be *S. pygmaeus*).

Navás (1913) attributes to *S. elegans* two Sardinian specimens labelled “Correboi. 8” and “Ploaghe. 8.” These are exactly like two *S. pygmaeus* in the Collection and determined by the Catalan author as *S. conspersus*. In this case we have only two plausible explanations: i) in consideration of the absolute incompatibility between the eco-climatic conditions of the two localities and the *S. elegans* habitat (a species extraneous to the fauna of Sardinia), there were two specimens of *S. luqueti* that have now disappeared from the Collection; ii) these specimens never existed and Navás very likely made an error in transcription and mistakenly gave the place name details of two *S. conspersus* also for *S. elegans* (both the species *sensu* Navás).

(?) *Symphorobius elegans* (Stephens, 1836)

1ex – G.[ran] Sasso \ *Symphorobius elegans* Steph. Navás S.J. det [N]

It was impossible for me to identify with certainty this specimen which has deteriorated.

(?) *Symphorobius fuscescens* (Wallengren, 1863)

1ex – M.° Zool.° n.° 43588 \ *Symphorobius elegans* Steph. Navás S.J. det \ *Hemerobius elegans*, St. Wallis [N]

1ex – M.° Zool.° n.° 43591 \ Niremberge incunspicua M.L. Navás S.J. det \ *Hemerobius inconspicuus*, M.L. Wallis [N]

pin – M.° Zool.° n.° 43314 \ Niremberge incunspicua M.L. Navás S.J. det \ *Hemerobius inconspicuus*, M.L. Wallis [N]

(?) *Megalomus tortricoides* Rambur, 1842

[*Micromus*] *hirtus* ? Lin.: Alpi Torino 2 exx (1869: 12, n. 130)

1ex – [square of grey paper] \ M.° Zool.° n.° 7809 \ *Micromus* ? *Hirtus* ? Lin. Latr. Pet. \ *Megalomus hirtus* L. Navás S.J. det [N Piemonte]

remains – M.° Zool.° n.° 43587 \ Wallis \ *Megalomus hirtus* L. Navás S.J. det [N]

The attribution of these two specimens of *M. tortricoides* is rather doubtful.

For the specimen with inventory number 7809 Navás gives also “Piemonte”, another lost label?

Megalomus hirtus (Linnaeus, 1761)

Drepan.[opteryx] tortricoides: Monte Vergine [luglio] (1855c: 6 and 21, tav. X [V in the text at pag. 6], fig. 3); *Drepanopteryx tortricoides*, Ramb.: [Monti Partenii luglio 1854] (1858: 10 and 17); *Drepanopteryx tortricoides*, Ramb.: monti napolet.[ani] 3 exx (1871b: 14, n. 174)

1♀ – *Megalomus hirtus* L. Navás S.J. det \ *Megalomus tortricoides*, Rb. M. vergine [N]

1♀ – Sila \ *Megalomus hirtus* L. Navás S.J. det [N]

I agree with Navás and attribute these two specimens to *M. hirtus*. Evidently Achille Costa mistook *M. hirtus* for *M. tortricoides* and viceversa.

Megalomus pyraloides Rambur, 1842

Drepan.[opteryx] pyraloides: tutto il regno [dalla primavera al principio d'autunno] (1855c: 7 and 21, tav. X, fig. 4); [*Drepanopteryx*] *pyraloides*, Ramb.: Napoletano 3 exx (1871b: 14, n. 175)

Megalomus pyraloides, Rb.: [Aspromonte] (1863: 65, n. 646)

1♀ – Fauna Napoletana \ *Megalomus pyraloides* Rb. Navás S.J. det \ *Megalomus pyraloides*, Rb. Napoli [N]

1♀ – Reggio \ *Megalomus pyraloides* Rb. Navás S.J. det [N]

In this case identification is certain and the species was determined correctly by Achille Costa.

(?) *Drepanopteryx phalenoides* (Linnaeus, 1758)

pin – Museo Zoologico \ M.° Zool.° n.° 43586 \ *Drepanopteryx phalenoides*, L. Germania

Micromus variegatus (Fabricius, 1793)

Micromus variegatus: Gran Sasso d'Italia, collina de' Camaldoli [colmo della state] (1855c: 4 and 21, tav. X, fig. 2); *Micromus variegatus*, Fab.: Napoletano 4 exx (1871b: 14, n. 173)

Micromus variegatus, F.: Aspromonte (1863: 64, n. 645); *Micromus variegatus*, Fab.: Sila grande [7-12 agosto] e Montagna di Tiriolo [16 e 18 agosto 1876] (1881: 52)

Micromus variegatus, Fab.: adiacenze di Fonni [17-18 settembre 1881] (1882a: 22)

1♀ – Gr.[an] Sas.[so] [illegible word(s)] \ *Micromus variegatus* F. Navás S.J. det [N]

1♀ – *Micromus variegatus* F. Navás S.J. det \ *Micromus variegatus*, Camaldoli [N]

2♀♀ – M. di Cava \ *Micromus variegatus* F. Navás S.J. det [N]

remains – Asprom.[onte] \ *Micromus variegatus* F. Navás S.J. det [N]

1ex – Sila G.[rande] \ *Micromus variegatus* F. Navás S.J. det [N]

1ex – Tiriolo \ *Micromus variegatus* F. Navás S.J. det [N]

1♀ – Majella \ M.° Zool.° n.° 16041 \ *Micromus variegatus* F. Navás S.J. det [N as *Micromus aphidivorus*]

1♀ – Majella \ *Micromus variegatus* F. Navás S.J. det [N]

1♀ – Vallombrosa \ M.° Zool.° n.° 37382 \ *Micromus variegatus* F. Navás S.J. det [N Vallambrosa]

1♂1♀ex,
pin – *Micromus variegatus* F. Navás S.J. det

Unmistakable species of which the Collection contains numerous well preserved specimens.

Micromus angulatus (Stephens, 1836)

Mucropalpus hyalinatus: Aspromonte (1863: 13); *Mucropalpus meridionalis*, A. Cost.: [Aspromonte] (1863: 31, 65 and 80, n. 648, tav. III [IV in the text at pag. 80], fig. 6); *Mucrop.[alpus] meridionalis*: valli dell'Aspromonte (1871a: 2, tav. XIII, fig. 2); [*Mucropalpus meridionalis*, A. Cost.: Calabria 2 exx (1871b: 14, n. 179)

[*Micromus tendinosus*, Ramb.: Alpi 1 ex (1869: 12, n. 128)

- 1♂ – *Micromus aphidivorus* Schr. Navás S.J. det \ *Mucropalpus meridionalis*, n. Reggio \ Lectotypus *Mucropalpus meridionalis* A. Costa, 1863 Pantaleoni des. 1993 [N]
- 1ex – M.° Zool.° n.° 7807 \ *Micromus aphidivorus* Schr. Navás S.J. det [N *Micromus R. (Hemerobius) tendinosus?* Ramb.]
- 1♀ – Solfatara \ Fauna Napoletana \ *Micromus aphidivorus* Schr. Navás S.J. det [N]
- 1♀ – Majella \ M.° Zool.° n.° 16040 \ *Micromus aphidivorus* Schr. Navás S.J. det [N]
- 1ex – *Micromus aphidivorus* Schr. Navás S.J. det

Navás is particularly confused in listing the specimens belonging to this species (sub *Micromus aphidivorus* SCHR.). In fact, he writes literally "... *Mucropalpus meridionalis*. Piemonte. COSTA. Reggio, Solfatara."

They must be three different specimens. The Piedmont one has been lost (or is the same that has the inventory number 7807) but it is also likely to be a simple error of transcription. The label with *Micromus R. (Hemerobius) tendinosus?* RAMB. which Navás attributes to the specimen with code 7807, has been lost. However, this determination was not Costa's.

See also Pantaleoni (1999).

Micromus paganus (Linnaeus, 1767)

Micromus lineosus, Ramb.: Alpi marit.[time] 2 exx (1869: 12, n. 127)

- remains – M.° Zool.° n.° 7804 \ *Micromus R.r (Hemerobius) lineosus* Ramb. Alp.[i] mar.[ittime] \ *Micromus paganus* ? Vill. Navás S.J. det [N]
- 1ex – *Micromus paganus* L. Navás S.J. det
- remains – M.° Zool.° n.° 43584 \ *Micromus paganus* L. Navás S.J. det \ *Micromus paganus*, Will. Wallis [N]

Yet another species not collected and not studied directly by Achille Costa.

S i s y r i d a e

Sisyra nigra (Retzius, 1783)

Sisyra fuscata, Fabr.: Ital.[ia] sett.[entrionale] 1 ex [ex Garbiglietti] (1864a: 103, n. 46); *Sisyra fuscata*: Ital.[ia] Sett.[entrionale] (1871a: 8, tav. XIII, fig. 1 [5 in the text])

Sisyra fuscata, Fab.: presso le sponde del fiume di Porto Torres [30 settembre 1881] (1882a: 22); *Sisyra fuscata*, Fab.: presso le sponde del fiume di Porto Torres (come nel 1881) [21 e 22 agosto 1883] (1884d: 31)

- 1♂ – M.° Zool.° n.° 7802 \ *Sisyra fuscata* F. Navás S.J. det \ *Sisyra fuscata* Fab. Torino
- 1ex – Porto Torres \ M.° Zool.° n.° 29286 \ Geofauna Sarda A. Costa 1882-1886 \ *Sisyra fuscata* F. Navás S.J. det [N]
- Navás – [1913: p. 6, 34. *Sisyra fuscata* Fr. – *Hemerobius fuscatus*, Fab. Porto Torres. M.° Zool. ... N.° 32778.]

Costa's findings are the only ones published up to now for Sardinia, apart from the incidental one of Weißmair (1999: 124). The inventory number of the second Porto Torres specimen mentioned by Navás (1913) perfectly corresponds to the numbers attributed to Neuropterida collected in the summer of 1883 and confirm this capture also.

Achille Costa reports *S. fuscata* also from Muravera, see the following species.

Sisyra iridipennis A. Costa, 1884

Sisyra fuscata: Muravera, sponde del Flumendosa [27 aprile 1882] (1883: 8); *Sisyra iridipennis*, nob.: sponde del Flumendosa vicino Muravera [27 aprile 1882] (1884b: 20; 1884d: 51); *Sisyra iridipennis*, nob.: presso il fiumicello che scorre vicino Milis [15 agosto 1883] (1884b: 20; 1884d: 16, 31 and 51); *Sisyra (S. iridipennis)*: (1884c: 81); *S.[isyra] iridipennis*: (1884e: 302); *Sisyra* {sic!} *iridipennis*, A. Costa: (1885b: 242)

- 1ex – Muravera. 4. \ M.° Zool.° n.° 30529 \ Geofauna Sarda A. Costa 1882-1886 \ *Sisyra monticellii* Nav. Navás S.J. det \ Lectotypus *Sisyra iridipennis* A. Costa, 1884 Pantaleoni des. 1993 [N]
- 1ex – Milis. 8. \ M.° Zool.° n.° 32779 \ *Sisyra monticellii* Nav. Navás S.J. det \ Geofauna Sarda A. Costa 1882-1886 \ Paralectotypus *Sisyra iridipennis* A. Costa, 1884 Pantaleoni des. 1993 [N]

See Pantaleoni (1999). The doubt remains whether Achille Costa's report of a *S. fuscata* from Muravera actually refers to a *S. iridipennis* (not recognised at the time and described later) or to the presence of both species.

Coniopterygidae

Semidalis sp.

remains – M.° Zool.° n.° 43595 \ Coniopteryx aleyrodiformis St. Wallis

Dilaridae

(?) *Dilar meridionalis* Hagen, 1866

1ex – M.° Zool.° n.° 43315 \ Dilar meridionalis, Hag. Castiglia \ Dilar meridionalis Navás S.J. det [N]

Dilar parthenopaeus A. Costa, 1855

Dilar parthenopaeus: adiacenze di Napoli (1855c: 19 and 21, tav. XI, fig. 6, 6A); *Dilar parthenopaeus*: montagne di Cava (provincia di Salerno) 2 individui (1871a: 7); *Dilar parthenopaeus*, A. Cost.: Napoletano 1 ex (1871b: 15, n. 189)

Dilar parthenopaeus: [without information] (1884b: 20); *Dilar parthenopaeus*, A. Cost.: presso Aritzo [21-22 luglio 1883] e Desulo [23-31 luglio 1883] (1884d: 7 and 31)

1♂ – Dilar parthenopaeus A. Cos. M.e Cava \ Lectotypus Dilar parthenopaeus A. Costa, 1855 Pantaleoni des. 1993

1♂ – Aritzo. 7. \ M.° Zool.° n.° 32785 \ Dilar parthenopaeus \ Lidar parthenopaeus A. Costa {written by Navás} [Navás 1910]

1♂ – Aritzo. 7.

1♂ – Lagopesole \ M.° Zool.° n.° 44707 \ Lidar parthenopaeus A. Costa {written by Navás} [preparation; Navás 1910]

See Pantaleoni (1999). A little mystery surrounds the finding of the first specimens of *D. parthenopaeus*. Achille Costa (1855c) describes the species from a single specimen collected in the “adiacenze di Napoli”. Later (A. Costa, 1871a) he said i) he did not know exactly where the first specimen was captured inside the Kingdom, ii) he had collected another two for the “montagne di Cava (provincia di Salerno)”. Immediately afterwards, however, (A. Costa, 1871b) he listed only one specimen of the species in the Collection of the museum captured in the “Napoletano”. The Collection at present contains a single specimen labelled “M.e Cava”. Various hypotheses can be forwarded to explain these contradictions but to tell the truth it is not of much importance to know which is the right one.

Mantispidae

Mantispa styriaca (Poda, 1761)

Mantispa pagana: [without information]. (1884b: 20); *Mantispa pagana*, Fab.: nel bosco di Laconi [15 luglio 1883] ed in quello di Orani [7 agosto 1883] (1884d: 5, 31 and 32)

pin – Museo Zoologico \ M.° Zool.° n.° 32772 \ M. pagana

1♂ – Orani. 8.

The inventory number 32772 is compatible with the capture in Laconi and probably belongs to the specimen collected there.

Mantispa perla Pallas, 1772 (sensu Erichson, 1839)

Mantispa perla: Terra d’Otranto, Monte Vergine [luglio] (1855d: 2, tav. XII, fig. 1); *Mantispa perla*, Pall.: Terra d’Otranto, [Monti Partenii, luglio 1854] (1858: 10 and 17); *Mantispa perla*, Pall.: M.[onte] Vergine 1 ex (1871b: 15, n. 190)

1♂ – Mantispa perla Pall. Navás S.J. det \ Mantispa perla, Pall. M.e Vergine [N]

remains – Lecce \ Mantispa perla Pall. Navás S.J. det

Navás – [1913: p. 11, 67. Mantispa perla Pall. – Leuca. 841089.]

The identification of the Monte Vergine ♂ is not certain since the front legs are missing and I did not carry out the preparation of genitalia. In this case, I accept Navás’s determination. The inventory number of the Leuca specimen mentioned by Navás must be mistaken, perhaps it was 8. [August] 41089.

Berothidae

Isoscelipteron fulvum A. Costa, 1863

Isoscelipteron fulvum, A. Cost.: colline di Staiti (1863: 13, 35, 65 and 80, n. 652, tav. III [IV in the text at pag. 80], fig. 5, 5A);

Isoscelipteron fulvum: adiacenze di Staiti (1871a: 4, Tav. XIII, fig. 3, 3A [4 in the text])

remains – Berotha fulva Costa Navás S.J. det \ Isoscelipteron fulvum, A.C. \ Lectotypus Isoscelipteron fulvum A. Costa, 1863 Pantaleoni des. 1993 [N]

See Pantaleoni (1999).

Nemopteridae

(?) *Nemoptera coa* (Linnaeus, 1758)

Navás – [1913: p. 5, 27. *Nemoptera coa* L. { quoted from memory}]

(?) *Nemoptera bipennis* (Illiger, 1812)

Navás – [1913: p. 5, 28. *Nemoptera sinuata* Oliv. { quoted from memory}]

Probably specimens of this species and the previous one are kept in the display cabinet whose contents have not been studied (see the chapter on the Achille Costa Collection).

Myrmeleontidae

Palpares libelluloides (Linnaeus, 1764)

Myrmeleon libelluloides: colline vicine alla capitale [Napoli state] (1855b: 5 and 20, tav. VIII, fig. 1); *Myrmeleon libelluloides*, Lin.: Napoletano 2 exx (1871b: 14, n. 162)

Myrmeleon libelluloides, Lin.: in varii luoghi, fin nell'Aspromonte (1863: 64, n. 639); *Myrmeleon libelluloides*, Lin.: adiacenze di Cirò [13-22 luglio 1876]. (1881: 52)

[*Myrmeleon libelluloides*] var. *nigriventris*: Calabrie (1855b: [6] and 20)

1♂ – M.° Zool.° n.° 7794 \ *Palpares libelluloides* ♂ L. Navás S.J. det \ *M. libelluloides* M. nuovo [N]

1♂ – *Palpares libelluloides* ♂ L. Navás S.J. det [N]

1ex – *Palpares libelluloides* ♀ L. Navás S.J. det [N]

The M.[onte] Nuovo locality is in the Campi Flegrei near Naples. Many specimens reported by Achille Costa are missing from the Collection.

Acanthaclisis occitanica (Villers, 1789)

Acanthaclisis occitanica: Calabrie (1855b: 7 and 20, tav. VIII, fig. 2, 2A and 2B); *Acanthaclisis occitanica*, Vill.: Calabria 1 ex (1871b: 14, n. 163)

1♂ – *Acanthaclisis occitanica* ♂ Vill. Navás S.J. det \ *Acanthaclisis occitanica*, Vill. Calabria [N]

1♀ – Lecce \ *Acanthaclisis occitanica* ♀ Vill. Navás S.J. det [N]

The Lecce specimen was not published by Achille Costa but the species was reported by his brother Giuseppe Costa (1874) in “Fauna Salentina”.

Synclisis baetica (Rambur, 1842)

1♀ – M.° Zool.° n.° 43569 \ *Acanthaclisis baetica* ♀ Ramb. Navás S.J. det \ *Acanthaclisis occitanica*, Willers Francia mer. [N]

Myrmecaelurus trigrammus (Pallas, 1771)

Myrmecaelurus flavus: Terra d'Otranto, Sicilia (1855b: 10 and 20, tav. IX, fig. 1); *Myrmecaelurus flavus*, Ramb. ♂: Sicilia 1 ex (1871b: 14, n. 165)

Myrmecaelurus flavus, Rb.: valle di S.[an] Luca (1863: 64, n. 641); *Myrmec[aelurus] flavus*, Rmb.: adiacenze di Cirò [13-22 luglio 1876] (1881: 52)

Navás – [1913: p. 4, 17. *Myrmecaelurus trigrammus* Pall. – *Myrmeleon flavus* R. ♂ Sicilia. (133)]

1♂ – Cirò \ *Myrmecaelurus trigrammus* ♂ Pall. Navás S.J. det [N]

Navás – [1913: p. 4, 17. *Myrmecaelurus trigrammus* Pall. – *Myrmeleo trigrammus* Pall. Ungheria. M. Zool. N. 43571]

Only one specimen of this species remains in the Collection and at least another two were seen by Navás (1913). Evidently, as in the case of *P. libelluloides*, most of the material has been lost.

Like all the other species of Myrmeleontidae, this was identified by Achille Costa from information given in Rambur's work (1842).

(?) *Nohoveus punctulatus* (Steven in Fischer v. Waldheim, 1822)

remains – M.° Zool.° n.° 43572 \ *Myrmecaelurus punctulatus* Stev. Navás S.J. det \ *Myrmecaelurus punctulatus*, Stv. Ungheria [N]

Myrmeleon formicarius Linnaeus, 1767

Myrmec.[aelurus] innotatus: colline vicine alla capitale [Napoli state] (1855b: 14 and 20, tav. IX, fig. 2); [*Myrmecaelurus*] *innotatus*, Ramb.: Napoletano 1 ex (1871b: 14, n. 168)

1♀ – M.° Zool.° n.° 7798 \ Napoli \ *Myrmeleon formicarius* L. Navás S.J. det \ Fauna Napoletana [N]

1ex – *Myrmeleon formicarius* L. Navás S.J. det \ Fauna Napoletana \ *Myrmeleon innotatus*, Rb. Napoli [N]

1ex – M.° Zool.° n.° 45182 \ *Myrmeleon formicarius* L. Navás S.J. det \ *Myrmeleon europaeus*, ML. Germania [N]

Navás – [1913: p. 3, 14. *Myrmeleon formicarius* L. – M. Zool. N. 48150, N. 423051]

Navás is extremely cryptic in listing the specimens of *M. formicarius*. The indication of the last on the list (*Myrmeleon innotatus* RB Napoli. M. Zool. N. 48150, N. 423051) appears in fact to relate to at least two or three specimens, but the second number of the inventory at least does not correspond to the numeration of the Naples Museum which has a maximum of five numbers.

Note how Achille Costa followed Rambur (1842) here also.

Myrmeleon hyalinus distinguendus Rambur, 1842

Myrmec.[aelurus] distinguendus: Abruzzi (1855b: 15 and 20, tav. IX, fig. 3); [*Myrmecaelurus] distinguendus*, Rmb.: Abruzzi 1 ex (1871b: 14, n. 169)

Myrmeleon distinguendus, Ramb.: adiacenze di Sassari [29-30 settembre 1881] (1882a: 22); [*Myrmeleon] distinguendus*, Ramb.: adiacenze di Cagliari [27 giugno 1882] (1883: 55)

- 1ex – *Myrmeleon cinereus* Klug Navás S.J. det \ *Myrmeleon distinguendus*, Rb. Abruzzi [N]
- remains – Sassari \ M.° Zool.° n.° 29284 \ Geofauna Sarda A. Costa 1882-1886 \ *Myrmeleon cinereus* Klug Navás S.J. det [N fragmentos]
- pin – Molentargius. 6. \ M.° Zool.° n.° 30527 \ Geofauna Sarda A. Costa 1882-1886 \ *Myrmeleon cinereus* Klug Navás S.J. det \ *distinguendus* [N Molenargius]
- remains – M.° Zool.° n.° 32777 \ Geofauna Sarda A. Costa 1882-1886 \ *Myrmeleon cinereus* Klug Navás S.J. det [N fragmentos]

The inventory number of the last specimen corresponds to material collected in July-September 1883 (A. Costa, 1884). However, Achille Costa does not mention this specimen.

Euroleon nostras (Geoffroy in Fourcroy, 1785)

Myrmeleon formicarius, Lin.: Parma 1 ex [ex Rondani] (1864a: 96, n. 16)

- 1ex – M.° Zool.° n.° 7796 \ *Formicaleo tetragrammicus* F. Navás S.J. det \ *Myrmeleon formicarius*, L. Parma [N Parona]
- remains – M.° Zool.° n.° 45183 \ *Myrmeleon formicarius*, Lin. Germania

Rambur (1842) interpreted this species badly and as usual Costa followed him.

Navás's error in determination in this case is really gross.

Dendroleon pantherinus (Fabricius, 1787)

[*Myrmeleon] nigrocinctus*, Ramb.: Parma [?] [ex Rondani] 1 ex (1864a: 96, n. 18 and footnote)

Myrmeleon nigrocinctus, Ramb.: Piemonte 1 ex (1869: 12, n. 124)

Myrm.[ecaelurus] nigrocinctus: falde del Taburno (1871a: 1, tav. XII, fig. 5 [1 in the text])

- Navás – [1913: p. 4, 21 *Dentroleon pantherinus* F. – *Myrmeleon nigrocinctus* Rmb. Parma. M. Zool. N. 7797]
- Navás – [1913: p. 4, 21 *Dentroleon pantherinus* F. – Piemonte]
- remains – *Dendroleon pantherinus* F. Navás S.J. det \ *Myrmeleon nigrocinctus*, Rb. Taburno [N]

Achille Costa again used Rambur's name (1842).

The inventory number of the Parma specimen corresponds to that of a *D. tetragrammicus* from the same place. However, in this case it is difficult to believe that Navás fell into the usual error of transcription.

Macronemurus appendiculatus (Latreille, 1807)

Macronem.[urus] appendiculatus: Abruzzi, adiacenze della capitale [Napoli] (1855b: 8 and 20, tav. IX, fig. 5); *Macronemurus appendiculatus*, Latr.: Napoletano 1 ex (1871b: 14, n. 164); *Myrmeleon appendiculatus*: Ischia dal littorale fino presso la vetta dell'Epomeo [25 luglio/14 agosto 1856] ambedue i sessi (1856: 82)

Macronemurus appendiculatus, Latr.: [Aspromonte] (1863: 64, n. 640); *Macronemurus appendiculatus*, Latr.: Cirò [13-22 luglio 1876], Miglierina [20 agosto 1876], Santa Severina [24-26 e 29-31 luglio 1876] (1881: 52)

Myrmecoelurus appendiculatus, Latr.: presso Terranova [16-17 giugno 1882] e nella valle del Galagone [21 giugno 1882] (1883: 55); [*Myrmeleon] appendiculatus*, Latr.: in diversi luoghi [della Sardegna] (1884d: 31)

- pin – *Macronemurus appendiculatus* ♂ Latr. Navás S.J. det \ *Macronemurus appendiculatus* M. di Cava [N]
- remains – M. Nuovo \ *Macronemurus appendiculatus* ♂ Latr. Navás S.J. det [N]
- remains – M.° Zool.° n.° 23900 \ M. Nuovo \ *Macronemurus appendiculatus* Latr. Navás S.J. det [N 23906]
- Navás – [1913: p. 5, 24. *Macronemurus appendiculatus* Latr. – Alburno.]
- remains – Cirò \ *Macronemurus appendiculatus* Latr. Navás S.J. det [N]
- remains – Miglierina \ *Macronemurus appendiculatus* Latr. Navás S.J. det [N]
- remains – Galagone. 6. \ M.° Zool.° n.° 30528 \ Geofauna Sarda A. Costa 1882-1886 \ *Macronemurus appendiculatus* Latr. Navás S.J. det [N Calagone]
- remains – Cagliari. 7. \ M.° Zool.° n.° 32776 \ Geofauna Sarda A. Costa 1882-1886 \ *appendiculatus* [N]
- 1♀ – Cagliari. 7. \ Geofauna Sarda A. Costa 1882-1886 \ *Macronemurus appendiculatus* ♀ Latr. Navás S.J. det [N]
- pin – Cagliari. 7. \ Geofauna Sarda A. Costa 1882-1886
- remains – Laconi. 7. \ *Macronemurus appendiculatus* Latr. Navás S.J. det
- pin – Terranova 7. \ M.° Zool.° n.° 36466 \ Geofauna Sarda A. Costa 1882-1886 \ *Macronemurus appendiculatus* Latr. Navás S.J. det [N]
- remains – Mormanno \ M.° Zool.° n.° 44702 \ *Macronemurus appendiculatus* ♂ Latr. Navás S.J. det [N]

In this case too, the locality M.[onte] Nuovo is in Campi Flegei near Naples.

The Terranova [Olbia] specimen was collected during the 1885 trip, as can be seen from the inventory number and month on the label, and not reported by Achille Costa (1886b). The one collected during the second half of June 1882 (A. Costa, 1883) was lost and was not even seen by Navás (1913).

(?) *Macronemurus bilineatus* Brauer, 1868

- 1♀ – M.° Zool.° n.° 43568 \ *Macronemurus appendiculatus* Latr. Navás S.J. det \ *Myrmeleon nemausiensis*, Bkh. Borkum [N]

Neuroleon arenarius (Navás, 1904)

Myrmec.[aelurus] variegatus: collina della Torre del Greco [luglio] (1855b: 13 and 20, tav. IX, fig. 4); [*Myrmecaelurus*] *variegatus*, Klug.: Napoletano 4 exx (1871b: 14, n. 167)

[*Myrmecaelurus*] *variegatus*, Kl.: [Aspromonte] (1863: 64, n. 642); [*Myrmec[a]elurus*] *variegatus*, Klug.: Adiac.[enze] di Cirò [13-22 luglio 1876] (1881: 52)

- 1ex - Fauna Napoletana \ *Neuroleon arenarius* Nav. Navás S.J. det \ *Myrmeleon variegatus*, Kl. Napoli [N]
- remains - *Neuroleon arenarius* Nav. Navás S.J. det [probably N as N. 48148]
- 1♀ - Cirò \ M.° Zool.° n.° 22803 \ *Neuroleon arenarius* Nav. Navás S.J. det [N]

Once again, Achille Costa identified a species basing only on Rambur (1842), making a mistake but keeping to his interpretation.

(?) *Neuroleon nemausiensis* (Borkhausen, 1791) *aut microstenus* (McLachlan, 1898)

- remains - Mormanno \ M.° Zool.° n.° 44701 \ *Nelees hellenicus* Nav. Navás S.J. det [N]

It was impossible to determine with certainty this specimen as we have only some remains and Navás's definition (1913).

Distoleon tetragrammicus (Fabricius, 1798)

Myrmec.[aelurus] tetragrammicus: adiacenze di Napoli [state] (1855b: 12 and 20, tav. VIII, fig. 3); [*Myrmecaelurus*] *tetragrammicus*, Pall.: Napoletano 2 exx (1871b: 14, n. 166)

[*Myrmeleon*] *tetragrammicus*, Pall.: Parma 1 ex [ex Rondani] (1864a: 96, n. 17)

[*Myrmec[a]elurus*] *tetragrammicus*, Pall.: Sila grande, presso Camigliati [10-12 agosto 1876] (1881: 52)

Myrmeleon tetragrammicus, Pall.: nella montagna di Laconi [17 luglio 1883] (1884d: 31)

- remains - M.° Zool.° n.° 7797 \ *Formicaleo tetragrammicus* F. Navás S.J. det
- 1ex - M.° Zool.° n.° 7795 \ *Formicaleo tetragrammicus* F. Navás S.J. det \ *Myrmeleon tetragrammicus* Pall. Parma [N]
- pin - Laconi. 7. \ M.° Zool.° n.° 32773 \ *Geofauna Sarda* A. Costa 1882-1886 \ *tetragrammicus* [N]
- Navás - [1913: p. 5, 26. *Formicaleo tetragrammicus* F. - Avezzano.]
- remains - M.° Zool.° n.° 45184 \ *Formicaleo tetragrammicus* F. Navás S.J. det \ *Myrmeleon tetragrammicus*, F. WII [N]

Very little remains of this species in the Collection!

Creoleon lugdunensis (Villers, 1789) *aut plumbeus* (Olivier, 1811)

Myrmec.[aelurus] pallidipennis: adiacenze della capitale [Napoli dalla metà primavera a tutta la state] (1855b: 16 and 20, tav. VIII, fig. 4); [*Myrmecaelurus*] *pallidipennis*, Rmb.: Napoletano 2 exx (1871b: 14, n. 170)

[*Myrmecaelurus*] *pallidipennis*, Rb.: [Aspromonte] (1863: 64, n. 643); [*Myrmec[a]elurus*] *pallidipennis*, Rmb.: adiacenze di Cirò [13-22 luglio 1876] e Santa Severina [24-26 e 29-31 luglio 1876] (1881: 52)

[*Myrmeleon*] *pallidipennis*, Rmb.: vicinanze dello stagno di Molentargius [27 giugno 1882] (1883: 55)

- 1♀ - M.° Zool.° n.° 26689 \ *Creagris plumbeus* Oliv. Navás S.J. det [N]
- Navás - [1913: p. 4, 19. *Creagris plumbea* Oliv. - S. Severino]
- 1ex - Cirò \ *Creagris plumbeus* Oliv. Navás S.J. det [N]
- Navás - [1913: p. 4, 19. *Creagris plumbea* Oliv. - *pallidipennis*. Molentargius 6. M. Zool. N. 30526]
- remains, pin - Cagliari. 7. \ *Geofauna Sarda* A. Costa 1882-1886 \ *Creagris plumbeus* Navás S.J. det [N]
- Navás - [1913: p. 4, 19. *Creagris plumbea* Oliv. - Palermo]
- 1♂ - Ungheria \ *Creagris plumbeus* Oliv. Navás S.J. det [N]

The state of preservation prevents me from determining with certainty these specimens. Considering the geographical origin the Hungarian specimen can be attributed to *Cr. plumbeus* and the Sardinian ones to *Cr. lugdunensis*.

The Cagliari specimens were certainly collected in July 1883, the only time Costa was in the city in that month (A. Costa, 1884d). Once again, Navás gives confused indications "M. Cirò, Palermo M. Zool N 26689". It is not clear whether the specimens are two or three. Here I have decided on three, but "Palermo" could also be a label lost by specimen n° 26689.

Creoleon corsicus (Hagen, 1860)

Myrmeleon falcipennis, nob.: Alghero [30 maggio] e Terranova [16-17 giugno 1882] (1883: 55 and 89); *Myrmeleon falcipennis*: (1884a: 333-334)

- remains - M.° Zool.° n.° 30525 \ *falcipennis* \ *Geofauna Sarda* A. Costa 1882-1886 \ *Creagris plumbeus* Oliv. Navás S.J. det \ *Lectotypus Myrmeleon falcipennis* A. Costa, 1883 Pantaleoni des. 1993 [N]

Navás (1913) reports this specimen with the expression "*falcipennis* ALG." The last initials do not refer to the author, as Navás probably thought, but are an abbreviation of Alghero, a town in the province of Sassari. If we presume that this is the case of a lost label, the *locus typicus* of *Myrmeleon falcipennis* would therefore be Alghero (Pantaleoni, 1999).

Gymnocnemia variegata (Schneider, 1845)

Aplectrocn.[emus] multipunctatus: colline prossime alla capitale [Napoli luglio], Calabrie (1855b: 18 and 20, tav. IX, fig. 6, 6A and 6B); *Aplectrocnemis multipunctatus*, A. Cos.: adiacenze di Santa Severina [24-26 e 29-31 luglio 1876] (1881: 52)

- 1♀ - *Gymnocnemia variegata* Schn. Navás S.J. det \ *Aplectrocnemis multipunctata* Cos. \ *Lectotypus Aplectrocnemis multipunctatus* A. Costa, 1855 Pantaleoni des. 1993 [N]
- 2exx - *Gymnocnemia variegata* Schn. Navás S.J. det
- 1ex - S. Severina \ *Gymnocnemia variegata* Schn. Navás S.J. det [N]

See also Pantaleoni (1999).

Ascalaphidae

Deleproctophylla australis (Fabricius, 1787)

Theleproctophylla australis: Terra d'Otranto, adiacenze del Vesuvio (1855a: 10 and 12, tav. VII, fig. 8, 8A); *Theleproctophylla australis*, Fab. ♂: Napoletano 3 exx (1871b: 14, n. 161)

Theleproctophylla australis, F.: colline di Palizzi (1863: 64, n. 638); *Theleproctophylla australis*, Fab.: adiacenze di Carfizzi [19-20 luglio 1876] (1881: 52)

- 1♂ – *Theleproctophylla australis*, Fab. Ad.e del Vesuvio
- Navás – [1913: p. 2, 2. *Theleproctophylla australis* F. – Lecce.]
- 1♀ – M.° Zool.° n.° 16162 \ *Theleproctophylla australis* ♀ Fab. Navás S.J. det [N]
- 1♂ – M.° Zool.° n.° 16162
- 1♂ – {unlabelled}
- 1♂ – Cirò

Yet again Navás's listing is not clear "Lecce. M.° Zool.° N.° 16162". I have interpreted it as two separate specimens of which the Lecce one has been lost.

Libelloides coccajus (Denis and Schiffermüller, 1775)

Ascalaphus italicus: varie contrade del Regno (1855a: 4 and 12, tav. VII, fig. 1, 1A); [*Ascalaphus italicus*] var. *leucocelius*: varie contrade del Regno, montagne della Cava (1855a: 5 and 12, tav. VII, fig. 2); *Ascalaphus italicus*, Fab.: Napoletano 1 ex (1871b: 14, n. 155)

Ascalaphus italicus, F.: colline di Brancaleone e di Bruzzano (1863: 64, n. 636); *Ascalaphus italicus*, Fab.: in vari luoghi [della Sila] (1881: 52)

Ascalaphus guttulatus, nob.: province più meridionali del Regno (1855a: 5 and 12, tav. VII, fig. 3, 5A [3A in the text]);

[*Ascalaphus*] *guttulatus*, A. Cost.: Napoletano 2 exx (1871b: 14, n. 159)

- 1♂ – *Ascalaphus italicus* ...? \ Lectotypus *Ascalaphus italicus* v. *leucocelius* A. Costa, 1855 Pantaleoni des. 1993
- 1♀ – *Ascalaphus guttulatus*, A.C. \ Lectotypus *Ascalaphus guttulatus* A. Costa, 1855 Pantaleoni des. 1993

On Achille Costa's interpretation of this species see the long discussion in Pantaleoni and Letardi (2002). See also Pantaleoni (1999).

Libelloides lacteus (Brullé, 1832)

Ascalaphus lacteus: Regno (1855a: 8 and 12, tav. VII, fig. 5); [*Ascalaphus*] *lacteus*, Brullé.: Napoletano 1 ex (1871b: 14, n. 158)

- 1♀ – M.° Zool.° n.° 40553 \ *Ascalaphus ottomanus* Germ. Navás S.J. det \ *Ascalaphus Ungheria* [N]

There are no specimens in the Collection from the Kingdom of Naples and given the non-specific details in the bibliography (A. Costa. 1855c, 1871b) we have no indications of the true origin of *L. lacteus* examined by Achille Costa.

(?) *Libelloides baeticus* (Rambur, 1842)

- Navás – [1913: p. 2, 7. *Ascalaphus boeticus* Ramb. – *Ascalaphus boeticus* Ramb. Granata. M.° Zool. N.° 43579]

Libelloides longicornis (Linnaeus, 1764)

Ascalaphus longicornis: Monte Vergine [luglio] (1855a: 9 and 12, tav. VII, fig. 6); *Ascalaphus longicornis*, Lin. (*C-nigrum*, Lat.): [Monti Partenii luglio 1854] (1858: 10 and 17); [*Ascalaphus*] *longicornis*, Lin.: Napoletano 2 exx (1871b: 14, n. 160)

Ascalaphus longicornis, Linn.: Ital.[ia] sett.[entrionale] 1 ex (1862a: 16, n. 98); *Ascalaphus macaronius*, Scop. (*longicornis*, Lin.): Piemonte 1 ex (1869: 12, n. 123)

- Navás – [1913: p. 2, 3. *Ascalaphus longicornis* L. – *Ascalaphus Macaronius* Scopoli (*longicornis* L. var.) Piemonte]
- 1♂ – M.° Zool.° n.° 43576 \ *Ascalaphus longicornis* ♂ L. Navás S.J. det \ *Ascalaphus coccaius*, Oliv. Wallis [N]

All specimens from Italy have been lost.

Libelloides latinus (Lefèbvre, 1842)

Ascalaphus Petagnae, nob.: varie contrade del Regno, Calabrie (1855a: 6 and 12, tav. VII, fig. 4, 4A); [*Ascalaphus*] *Petagnae*, A.

Cost.: [Aspromonte] (1863: 64, n. 637); [*Ascalaphus*] *Petagnae*, A. Cost.: monti calabri 1 ex (1871b: 14, n. 156)

[*Ascalaphus Petagnae*] var. *leucocelia*, A. C.: monti calabri 1 ex (1871b: 14, n. 157)

- 1♂ – M.° Zool.° n.° 24618 \ Persano \ *Ascalaphus Petagnae*, A.C. \ *Ascalaphus italicus* ♂ F. Navás S.J. det \ Lectotypus *Ascalaphus Petagnae* A. Costa, 1855 Pantaleoni des. 1993 [N]
- 1♀ – Sila
- 1♂ – M.° Zool.° n.° 24619 \ Persano \ *A. italicus* F. v. *leucocelia* C. Navás S.J. det \ *A. Petagnae* v. *leucocelia* [N]
- 1♂ – *Ascalaphus Petagnae*, Lecce
- pin – Museo Zoologico \ *A. Petagnae* v. *leucocelia* Lecce
- 1♂ – *A. Petagnae* v. *decolor* Lecce

See what was said about *L. coccajus*. The Lecce ♂ labelled *A. Petagnae* v. *decolor* (a new variety never described by Achille Costa) it is simply a specimen newly emerged from the cocoon.

Libelloides ictericus (Charpentier, 1825)

Ascalaphus ictericus, Charp.: non nel Regno (1855a: 10, tav. VII, fig. 7)

- 1♀ – M.° Zool.° n.° 43580 \ *Ascalaphus ictericus* ♀ F. Navás S.J. det \ *Ascalaphus ictericus*, Charp. Granata [N]

Libelloides siculus (Angelini, 1827)

Ascalaphus siculus, Ang. Ramb.: non lo conosciamo in natura (1855a: 10)

1♂ – Girgenti \ M.° Zool.° n.° 38124 \ A. ictericus Ch. v. corsicus Ramb. Navás S.J. det \ *Ascalaph. corsicus*, Rb. [N]

The specimen in the Collection was evidently acquired after the publication of “Fauna del Regno di Napoli”.

Libelloides corsicus (Rambur, 1842)

Ascalaphus corsicus, Ramb.: Corsica 1 ex [ex Ghiliani] (1864a: 105, n. 5)

Ascalaphus corsicus, Ramb.: tutta l’isola [Sardegna] e nelle piccole isole attigue dell’Asinara e Piana [23-25 maggio 1882] (1882b: 8; 1883: 17, 54 and 55)

1♀ – M.° Zool.° n.° 7788 \ A. ictericus Ch. v. corsicus Ramb. Navás S.J. det \ *Ascalaphus corsicus*, Ramb. Corsica [N]

1♀ – M.° Zool.° n.° 30524 \ Geofauna Sarda A. Costa 1882-1886 \ A. ictericus Ch. v. corsica Ramb. Navás S.J. det [N]

pin – Geofauna Sarda A. Costa 1882-1886 \ A. ictericus Ch. v. corsicus Ramb. Navás S.J. det

Specimen n° 7788 is certainly Ghiliani’s (A. Costa, 1864a).

Uninterpretable reports

[*Rhaphidia ophiopsis*] var. *fusciventris*: [without information] (1855e: 4)

See Pantaleoni (1999) for a discussion of this taxon which is probably a *nomen nudum*.

Chrysopa ypsilon, nob.: [without information] (1884b: 20-21)

Chrysopa bifidilinea, nob. (*ypsilon*, ol.): valle canonica delle vicinanze di Iglesias [2 settembre 1883] (1884d: 32 and 52); *Chrysopa (bifidilinea)*: (1884c: 81; 1884e: 302); *Chrysopa bifidilinea*, nob.: (1885b: 242)

In this case too, see Pantaleoni (1999) for a discussion on this *nomen nudum* (*Chr. bifidilinea* is a name that substitutes *Chr. ypsilon*, homonymous of *Chr. ypsilon* Fitch, 1855). I can only specify that “canonica” [= canonical] is not an adjective (one could be deceived by Achille Costa’s use of the lower case letter) but the river running near the town of Iglesias.

Chrysopa, due specie: Boscu Maria de Janu [26 luglio 1885] (1886b: 13)

As a matter of simple curiosity, seeing that this mention is so non-specific it is absolutely unusable, it can be noted that the place given by Achille Costa, or rather the “sorgiva di freddissima acqua che è nel bosco stesso poco al disotto della strada, la fonte de Maria de gianu” [spring of ice-cold water in the wood a little below the road, the spring of *Maria de gianu*], is today shown on the map as Fontana Mariane Iana and is situated in the Lodè commune (province of Nuoro) between Punta Su Mutucrone and the Cantoniera Guzzurra (these names can also be found in road maps).

[*Mucropalpus*]?: Calabria 5 exx (1871b: 14, n. 181)

I have not the slightest idea what species these specimens can belong to.

[*Coniopteryx*] *aphidiformis*, Curt.: Napoletano 3 exx (1871b: 16, n. 233)

Coniopteryx tineiformis, Curt.: Napoletano 4 exx (1871b: 16, n. 232)

Coniopteryx tineiformis, Curt.: presso lo sbocco del Galagone [21 giugno 1882] (1883: 29 and 55)

[*Coniopteryx*] *psociformis*, Curt.: presso le sponde del Coghinas in vicinanza di Perfugas [10 giugno 1882] (1883: 55)

We have nothing to interpret Achille Costa’s mentions of Coniopterygidae. I doubt that he was really able to identify the various species, given the limited taxonomic knowledge at the time. My opinion is based on the description given of the behaviour of *C. tineiformis* in Sardinia (A. Costa, 1883: 29): “Notevole era l’abbondanza della piccola *C.t.*, che vivendo sopra il mentastro ne ricopriva talmente la superficie delle foglie e de’ fusticini, da sembrare questa coperta da uno strato di calce; e lor quando queste piante venivano urtate, elevandosi tutti gli individui in un istante a volo formavano una vera nuvola.” [There was a remarkable abundance of small *C.t.* living on the horehound, covering the surface of the leaves and branches so thickly that it seemed like a layer of limewash; and when the plants were shaken all the insects rose together in flight forming a cloud.] Reading these lines, we seem to be able to recognise a white fly in Achille Costa’s *C. tineiformis*. On the other hand, the Neapolitan author, although an agricultural entomologist, does not deal with these insects even in the second edition of his famous manual on harmful insects (A. Costa, 1877b).

[*Myrmeleon*]?: bosco presso Ploaghe [24 agosto 1883]. (1884d: 31)

Keeping in mind the species of Myrmeleontidae known by Achille Costa (which must be excluded) and those found in northern Sardinia in the second half of August, I think the only plausible hypothesis is that this report refers to *Neuroleon egenus* (Navás, 1915).

Non-European material

Achille Costa mentions in a volume of the *Annuari* (1864a) 11 specimens of exotic Neuropterida listed below.

Bubo flavipes, Leach: Australia 1 ex (1864a: 59, n. 1703)
? {probably an Ascalaphidae}: Brasile 1 ex (1864a: 59, n. 1704)
? {probably an Ascalaphidae}: Por. Natale 1 ex (1864a: 59, n. 1705)
Haploglenius?: Brasile 1 ex (1864a: 59, n. 1706)
Myrmeleon speciosus, Linn.: C. B. Sp. 1 ex (1864a: 59, n. 1707)
[*Myrmeleon*]?: C. B. Sp. 1 ex (1864a: 59, n. 1708)
[*Myrmeleon*] *pulchellus*, Ramb.: Nuova Olanda 1 ex (1864a: 59, n. 1709)
Nymphes myrmeleonides, Leach: Nuova Olanda 1 ex (1864a: 59, n. 1710)
Hemerobius mimicus: ? 1 ex (1864a: 59, n. 1711)
Osmylus strigatus, Burm.: Nuova Olanda 1 ex (1864a: 59, n. 1712)
Corydalis cephalotes, Ramb. ♀: Brasile 1 ex (1864a: 59, n. 1713)

In the material examined by Navás (1913) only 3 non-European specimens are listed. The Collection certainly contains two of the specimens mentioned by Navás.

1ex	-	Kallinia yumia ♂ \ Osmylus multipunctatus ML. Navás S.J. det [N Kallimarurnia]
1ex	-	M.° Zool.° n.° 43573 \ Palpares papilionoides ♀ Kl. ? Navás S.J. det \ Palpares papilionoides, Klg. Taurus [N]
Navás	-	[1913: 4, n. 19. Creagris plumbea Oliv. - Creagris plumbeus Oliv. Siria. M. Zool. N. 43570]

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