Collections of extant cetaceans in Italian museums and other scientific institutions.
A comparative review

Abstract - This paper summarizes more than four decades of cetacean research data collected by the Museo Civico di Storia Naturale di Milano and, between 1986 and 2003, by the Centro Studi Cetacei of the Società Italiana di Scienze Naturali. It is the result of the collaboration among scientists of several Italian museums. A detailed analysis concerning the amount and taxonomic representativeness of the extant cetacean collections in Italian naturalistic museums and analogous institutions up until and including 2007 has been carried out. Adequately preserved and anatomically most significant
specimens only have been taken into consideration. On the whole 1033 specimens representing 41 species are considered herein. They are housed in 53 institutions, of which the following ones hold the most important collections: the museums of Calci (Pisa), Genova, Firenze, Milano, Roma Zoology, Siena, Comiso and Napoli.

All the surveyed institutions are listed, with a short introduction about their material and an inventory of it. Specimens are then arranged in systematic order and some further data are provided in a table for each species. Such tables report the items of each museum with regard to quantity, preservation techniques and, whenever possible, collecting data. Finally, a comparative analysis of the results is presented under multiple profiles: historical, preservation techniques, suitability of the specimens for research, place of origin, and the importance of the Italian cetacean collections for research and education.

**Keywords:** cetacean, museum collections, Italy.

**Introduction**

Cagnolaro (1996) published a general overview of the existing Italian cetacean collections. His contribution pointed out the long-lasting involvement of the *Museo di Storia Naturale di Milano* (MSNM), since the 1970s, in cetacean research of Italian museums, as well as that by the *Centro Studi Cetacei della Società Italiana di Scienze Naturali* (CSC, based at MSNM), between 1986 and 2003, together with its affiliated museums and institutions.

After 15 years from the above mentioned publication, we think it is necessary to carry out a deeper review of the subject. Consequently, this paper is aimed to update the knowledge about the principal qualitative and quantitative composition and the enormous value of cetacean collections in Italian museums. This was also deemed opportune because of the considerable increase in numbers of specimens housed in collections since 1996 due to the efforts of the various institutions initially collaborating with CSC and, thereafter, conducting their own researches.

The present review, coordinated by MSNM, arises from the collaboration among colleagues directly involved in increasing cetacean research and collections. Their participation to this work is the evidence of the joint endeavour furthering cetology.
in Italy over the last thirty years. We hope this study will draw attention to the enormous value of Italian cetacean collections.

Cetacean research in Italy and the museums

In Italy cetaceans were not the subject of specific study programs on a national basis up until the 1980s, and, before that period, any research concerned only some stranded specimens of particular interest (Cagnolaro and Notarbartolo di Sciara, 1992). Nevertheless, these occasional findings urged some researchers to carry out even some important studies on morphology and anatomy, and to increase museum collections with some valuable specimens. The first scientists who significantly contributed to the history of Italian cetology were: E.H. Giglioli and E.F. Trois, the latter for his studies on specimens from the Adriatic Sea, G. Capellini, S. Richiardi, E. Ninni, A. Carruccio, and C. Parona, the last for his pioneering reviews of large stranded cetaceans along Italian coasts (Parona, 1897 and 1909). S. Richiardi, director of the Museo di Zoologia e di Anatomia Comparata in Pisa from 1871 to 1904, developed a plan for the acquisition of cetacean skeletons on a worldwide basis, thus forming the core of the rich and fundamental collection of his institution, now housed at the Calci museum (Braschi et al., 2007). More recently, in the 1950s and 1960s, the following cetologists have to be mentioned: A. Bolognari, studying sperm whales, and G. Tamino, who, along Tyrrhenian coasts, collected stranded cetaceans now housed at the Museo di Zoologia in Roma, and, finally, E. Tortonesi and M.L. Azzaroli.

From the 18th century to the first half of the 20th century a significant role was played by the Museo di Anatomia Comparata of the University of Roma (holding old material from the ancient Archiginnasio and Museo Kirkeriano), the Museo di Zoologia ed Anatomia Comparata in Napoli, and the museums of Torino, Genova, Padova, Trieste and “La Specola” in Firenze.

Coordinated cetacean stranding research projects started in 1979 under the ‘Progetto Cetacei’ of the WWF Italy (at that time World Wildlife Fund), with the participation of MSNM, Venezia museum, the then Istituto di Zoologia at Messina (Di Natale, 1979), and, above all, increased in 1986 with the establishment of the Centro Studi Cetacei (CSC) as a working group of the Società Italiana di Scienze Naturali, based at MSNM (Cagnolaro, 1985; Borri et al., 1997). CSC, with the collaboration of approximately 40 Italian institutions, organized a national network for monitoring stranded specimens on Italian coasts and for gathering material for research purposes and for museums’ collection. In addition, an analytical annual report of cetacean strandings on Italian coasts was published (Centro Studi Cetacei, 1987 et seq.).

Thanks to the work co-ordinated by the CSC (Cagnolaro, 2003), over a period of twenty years the size of cetacean collections in Italian museums, with regard to Mediterranean species, has more than doubled. The effort is still going on with a national project of strandings data collection managed by the MSNM and Centro Interdisciplinare di Bioacustica e Ricerche Ambientali (CIBRA, Pavia University) supported by Ministero dell’Ambiente e della Tutela del Territorio e del Mare; data are available online at http://mammiferimarini.unipv.it.

Material and Methods

Starting from the data published in 1996, MSNM surveyed the cetacean collections, excluding fossil specimens, of other Italian institutions by means of a form to be filled in with: number of specimens, preservation techniques and collecting data.
The data included the presence of:
- mounted skeletons,
- disarticulated complete skeletons,
- partial, but sufficiently representative skeletons,
- skulls,
- isolated mandibles,
- mounted specimens,
- fetuses and liquid preserved specimens.

Isolated skeletal parts (e.g. vertebrae, tympanic bullae, sterna, ribs, etc.), teeth, including numerous narwhal tusks, baleens (except those from *Balaena mysticetus*) and isolated organs were not taken into consideration. It should also be noted that skeletal and mounted specimens, which sometimes belong to the same individual, were considered as distinct items. Whenever available, the catalogues of each museum, whether specific or just including cetaceans, are cited in the presentation of each institution.

Regarding the chronology of acquisitions, the following periods have been selected:
- 1701-1800
- 1801-1900
- 1901-1985
- 1986-2007

The activities of CSC began in 1986; classification and nomenclature after Wilson and Reeder (2005); Italian cetacean names as proposed by Notarbartolo di Sciara and Cagnolaro (1987).

### Results

Tab. 1 - Number of cetacean specimens in Italian museums and number of institutions housing them.

| Taxon                  | N. specimens | N. institutions |
|------------------------|--------------|----------------|
| Cetacea                | 1033         | 53             |
| Mysticeti              | 73           |                |
| Balaenidae             | 7            |                |
| *Balaena mysticetus*   | 2            | 1              |
| *Eubalaena glacialis*  | 5            | 4              |
| Balaenopteridae        | 66           |                |
| *Balaenoptera acutorostrata* | 12 | 8          |
| *Balaenoptera borealis* | 1 | 1            |
| *Balaenoptera musculus* | 2           | 2              |
| *Balaenoptera physalus* | 48          | 25             |
| *Megaptera novaeangliae* | 3          | 3              |
| Taxon                          | N. specimens | N. institutions |
|-------------------------------|--------------|-----------------|
| Odontoceti                    | 960          |                 |
| Delphinidae                   | 830          |                 |
| *Cephalorhynchus eutropia*    | 2            | 1               |
| *Cephalorhynchus hectori*     | 1            | 1               |
| *Delphinus capensis*          | 1            | 1               |
| *Delphinus delphis*           | 114          | 35              |
| *Globicephala macrorhynchus*  | 1            | 1               |
| *Globicephala melas*          | 31           | 13              |
| *Grampus griseus*             | 79           | 22              |
| *Lagenorhynchus acutus*       | 2            | 2               |
| *Lagenorhynchus albirostris*  | 1            | 1               |
| *Lagenorhynchus obscurus*     | 2            | 1               |
| *Orcaella brevirostris*       | 2            | 2               |
| *Orcinus orca*                | 6            | 5               |
| *Pseudorca crassidens*        | 15           | 11              |
| *Sousa chinensis*             | 2            | 2               |
| *Stenella coeruleoalba*       | 348          | 25              |
| *Stenella frontalis*          | 1            | 1               |
| *Stenella longirostris*       | 2            | 1               |
| *Steno bredanensis*           | 5            | 4               |
| *Tursiops aduncus*            | 1            | 1               |
| *Tursiops truncatus*          | 214          | 33              |
| Iniidae                       | 5            |                 |
| *Pontoporia blainvillei*      | 5            | 4               |
| Monodontidae                  | 17           |                 |
| *Delphinapterus leucas*       | 8            | 4               |
| *Monodon monoceros*           | 9            | 7               |
| Phocoenidae                   | 16           |                 |
| *Neophocaena phocaenoides*    | 1            | 1               |
| *Phocoena phocoena*           | 15           | 12              |
| Physeteridae                  | 44           |                 |
| *Kogia sima*                  | 2            | 2               |
| *Physeter macrocephalus*      | 42           | 27              |
| Platanistidae                 | 3            |                 |
| *Platanista gangetica*        | 3            | 3               |
| Taxon                    | N. specimens | N. institutions |
|-------------------------|--------------|-----------------|
| Ziphiidae               | 45           |                 |
| Hyperodon ampullatus    | 2            | 2               |
| Indopacetus pacificus   | 1            | 1               |
| Mesoplodon bowdoini     | 1            | 1               |
| Mesoplodon densirostris | 1            | 1               |
| Mesoplodon europaeus    | 1            | 1               |
| Ziphius cavirostris     | 39           | 16              |

The Collections

The 53 Italian museums and other public institutions housing cetacean collections are listed below following the alphabetical order of the town to which they belong. In addition to a brief presentation of main museum collections, we list the species and number of specimens of each institution. The preservation techniques, English and Italian common names, will be reported under the systematic section.

Bari

Servizio Laboratorio Ambientale e Acquario Provinciale

*Balaenoptera physalus* 1
*Orcinus orca* 1
*Physeter macrocephalus* 1

Bari

Museo Zoologico dell’Università degli Studi di Bari

*Tursiops truncatus* 1

Bergamo

Museo Civico di Scienze Naturali “E. Caffi”

*Delphinus delphis* 1
*Monodon monoceros* 1
*Physeter macrocephalus* 1
*Phocoena phocoena* 1
*Stenella coeruleoalba* 1

Bologna

Museo di Anatomia Comparata dell’Università degli Studi di Bologna

An important collection of historical value, remarkable for the large sperm whale skeleton (a 15 m long male, which in life would have measured 17 m), the largest on display in Italy. Another interesting specimen is the skull of a juvenile common minke whale (*Balaenoptera acutorostrata*) from the Adriatic Sea (1771), depicted by Mondini, so called “Balenottera di Mondini”: it is the oldest specimen preserved in the Italian Museums (Alessandrini, 1852; Parona, 1897).

*Balaenoptera acutorostrata* 1
*Delphinus delphis* 2
*Eubalaena glacialis* 1
Grampus griseus 1
Monodon monoceros 1
Phocoena phocoena 2
Physeter macrocephalus 2
Steno bredanensis 1
Tursiops truncatus 3

Bologna
Museo di Zoologia dell’Università degli Studi di Bologna
Delphinus delphis 3
Physeter macrocephalus 1

Cagliari
Museo del Dipartimento di Biologia dell’Università degli Studi di Cagliari
Balaenoptera physalus 1
Pseudorca crassidens 1

Calci (Pisa)
Museo di Storia Naturale e del Territorio dell’Università degli Studi di Pisa alla Certosa di Calci

It is the most important collection in Italy with regard to the number of taxa represented (27), including several exotic ones. It also contains a valuable and spectacular series of large skeletons on display, including the only complete ske-

Fig. 1 - The Certosa di Calci (Pisa), cetacean hall/galleria dei Cetacei.
letons existing in Italy of blue whale and sei whale, as well as adults of humpback whale and North Atlantic right whale, and large specimens from northern seas of fin whale and minke whale. Most of this 55 specimens collection was formed between the end of the 19th and the beginning of the 20th centuries by Sebastiano Richiardi, who collected several exotic species. The collection moved from Pisa to Certosa di Calci in the 1980s, where the great cetacean specimens were displayed in the spectacular ‘Galleria dei Cetacei’ hall (Fig. 1) (Repetti, 1924; Zuffi, 1994; Braschi et al., 2007).

- **Balaenoptera acutorostrata** 2
- **Balaenoptera borealis** 1
- **Balaenoptera musculus** 1
- **Balaenoptera physalus** 9
- **Cephalorhynchus hectori** 1
- **Delphinapterus leucas** 2
- **Delphinus delphis** 3
- **Eubalaena glacialis** 1
- **Globicephala melas** 1
- **Grampus griseus** 4
- **Hyperoodon ampullatus** 1
- **Lagenorhynchus acutus** 1
- **Lagenorhynchus albirostris** 1
- **Megaptera novaeangliae** 1
- **Mesoplodon bowdoini** 1
- **Monodon monoceros** 2
- **Neophocoena phocaenoides** 1
- **Orcaella brevirostris** 1
- **Orcinus orca** 2
- **Phocoena phocoena** 1
- **Physyter macrocephalus** 2
- **Platanista gangetica** 1
- **Pontoporia blainvillei** 1
- **Pseudorca crassidens** 2
- **Stenella coeruleoalba** 3
- **Tursiops truncatus** 7
- **Ziphius cavirostris** 2

**Castell’Arquato (Piacenza)**

**Museo dei Fossili**

**Delphinus delphis** 1

**Catania**

**Museo di Zoologia del Dipartimento di Biologia Animale “M. La Greca” dell’Università degli Studi di Catania**

- **Delphinus delphis** 1
- **Globicephala melas** 1
- **Physyter macrocephalus** 1
- **Pseudorca crassidens** 1
- **Stenella coeruleoalba** 1
- **Tursiops truncatus** 1
Comiso (Ragusa)
Museo Civico di Storia Naturale

It was established in 1991 in two adjacent buildings: the ‘Vecchio Mercato Ittico’, where the section on Cetaceans and Marine Turtles is housed, and the ‘ex Scuola d’Arte’, containing the Paleontology and Zoology sections.

The museum has, among others, a cetacean collection composed of specimens gathered by G. Insacco (the present curator of the museum) and other specimens obtained thanks to the collaboration with CSC, and to the efforts of volunteers from the Centro Regionale Recupero Fauna del Fondo Siciliano per la Natura of Comiso and Catania. The whole collection contains 35 specimens, mostly complete skeletons from Sicily and Calabria, belonging to 11 species. Two skeletons of *Steno bredanensis* are noteworthy, as well as that of *Kogia sima*, extremely rare in the Mediterranean Sea, stranded at Cattolica Eraclea in 2002, of which even a cast of the animal was made. Among baleen whales, there is a large skeleton of *Balaenoptera physalus*, stranded at Secca Grande di Ribera (AG) in 1993.

| Species                        |
|-------------------------------|
| *Balaenoptera physalus* 3      |
| *Delphinus delphis* 5          |
| *Globicephala melas* 1         |
| *Grampus griseus* 4            |
| *Kogia sima* 1                 |
| *Physeter macrocephalus* 2     |
| *Pontoporia blainvillei* 1     |
| *Stenella coeruleoalba* 10     |
| *Steno bredanensis* 2          |
| *Tursiops truncatus* 2         |
| *Ziphius cavirostris* 4        |

Ferrara
Museo Civico di Storia Naturale

(Mazzotti et al., 2006-2007)

| Species                        |
|-------------------------------|
| *Delphinus delphis* 2          |
| *Globicephala melas* 1         |
| *Pontoporia blainvillei* 1     |
| *Tursiops truncatus* 1         |

Firenze
Museo di Storia Naturale, Sezione di Zoologia “La Specola” dell’Università degli Studi di Firenze

A large and important collection of both present-day and historical value, containing 84 specimens representing 25 species. Some Mediterranean and exotic material dates back to the second half of the 18th century (Giglioli, 1880 and 1882; Agnelli et al., 1999 and 2009; Barbagli, 2009), and some recent Italian one comes from CSC activity. The most noteworthy specimens are: a mounted skeleton of a juvenile humpback whale from New Zealand, the second skull described in the world of *Indopacetus pacificus* (Fig. 2) (Azzaroli, 1968), the only known specimen of killer whale from Italian seas, as well as a skull of a short-finned pilot whale, which is the only specimen of that species in an Italian museum to date.

| Species                        |
|-------------------------------|
| *Balaenoptera acutorostrata* 2 |
| *Balaenoptera physalus* 3      |
**Cephalorhynchus eutropia** 2  
**Delphinapterus leucas** 1  
**Delphinus capensis** 1  
**Delphinus delphis** 15  
**Globicephala macrorhynchus** 1  
**Globicephala melas** 3  
**Grampus griseus** 7  
**Indopacetus pacificus** 1  
**Lagenorhynchus obscurus** 2  
**Megaptera novaeangliae** 1  
**Monodon monoceros** 1  
**Orcinus orca** 1  
**Phocoena phocoena** 1  
**Physeter macrocephalus** 2  
**Platanista gangetica** 1  
**Pseudorca crassidens** 2  
**Stenella coeruleoalba** 15  
**Stenella frontalis** 1  
**Stenella longirostris** 2  
**Steno bredanensis** 1  
**Tursiops aduncus** 1  
**Tursiops truncatus** 15  
**Ziphius cavirostris** 2

**Gallipoli (Lecce)**  
**Museo del Mare. Sezione del Museo Civico di Gallipoli**

An interesting collection even of historical value, starting in 1879 with the donation of the collection of the physician and naturalist E. Barba. By the end of
the 19th century the museum also received some specimens from the Gallipoli Sea, including a peculiarly displayed partial skeleton of a 12 m long fin whale. The *Museo del Mare* was established in 2007, as a section of the civic museum, mainly thanks to Giorgio Cataldini who wished to display the recent specimens stranded along the Salento coasts and collected in collaboration with CSC.

*Balaenoptera physalus* 1  
*Delphinus delphis* 2  
*Grampus griseus* 2  
*Stenella coeruleoalba* 2  
*Tursiops truncatus* 2  
*Ziphius cavirostris* 2

**Genova**  
**Museo Civico di Storia Naturale “G. Doria”**  
The most important Italian collection with regard to the number of specimens, 196 belonging to 15 species, which are noteworthy for their collecting sites and historical context. Genova’s geographical position favoured the acquisition of Mediterranean specimens. Since Genova museum’s foundation in 1867 till 1900, Giacomo Doria and Raffaello Gestro acquired ten different cetacean species. Moreover, scientific expeditions and the collaboration with fellow captains of merchant ships quickly provided some important exotic specimens. Further increases in local cetaceans took place between 1914 and 1917 as a consequence of a program of dolphin fishing of the *Sindacato Peschereccio Ligure-Sardo* (Ligurian-Sardinian Fishing Syndicate), between 1920s and 1930s thanks to Decio Vinciguerra, and between 1950s and 1960s thanks to Enrico Tortonese and Gianna Arbocco.

Corrado Parona, a cetacean specialist and director of the *Istituto di Zoologia dell’Università di Genova* from 1883 to 1922 indirectly increased the museum’s collection when part of the material of his institute, including the large skeleton of a fin whale, was passed on to the museum in 1928. From 1980 onwards the museum began to census and recover stranded specimens along the central-eastern Ligurian coast, coordinated by Roberto Poggi and in the framework of the CSC activity, providing more than 100 new specimens to the museum collection. Among the Odontoceti the series of *Delphinus delphis* are noteworthy; while concerning the *Mysticeti*, the large mounted skeleton of *Balaenoptera physalus*, as well as the skull and the mounted specimen of *Balaenoptera acutorostrata* are the most remarkable (Tortonese, 1963a, b; Arbocco, 1969; Poggi, 1982, 1986).

*Balaenoptera acutorostrata* 3  
*Balaenoptera physalus* 3  
*Delphinus delphis* 21 (including 5 *D. d. ponticus*)  
*Globicephala melas* 8  
*Grampus griseus* 18  
*Mesoplodon densirostris* 1  
*Orcaella brevirostris* 1  
*Physeter macrocephalus* 5  
*Platanista gangetica* 1  
*Pontoporia blainvillie* 2  
*Pseudorca crassidens* 2  
*Sousa chinensis* 1
Stenella coeruleoalba 100
Tursiops truncatus 20
Ziphius cavirostris 10

Genova
Museo di Anatomia Comparata del Dipartimento di Scienze della Terra, dell’Ambiente e della Vita (DISTAV) dell’Università degli Studi di Genova
Delphinus delphis 2
Stenella coeruleoalba 3
Tursiops truncatus 9
Ziphius cavirostris 1

Grosseto
Museo di Storia Naturale della Maremma
Grampus griseus 1

Ischia (Napoli)
Museo Archeologico Lacco Ameno
Specimens on loan respectively from the Museo Zoologico dell’Università di Napoli and the town of Forio d’Ischia (Maio & Nappi, 2005).
Delphinus delphis 1
Physeter macrocephalus 1

Lecce
Gabinetto di Scienze Naturali dell’Istituto Tecnico Commerciale “O. G. Costa”
A school with an interesting exhibition of two large skulls of sperm whale and fin whale. The latter, little known to date, is from a stranding at Andrano (Lecce) in 1827 (Manni, 1827).
Balaenoptera physalus 1
Delphinus delphis 1
Physeter macrocephalus 1
Stenella coeruleoalba 1

Lecco
Museo Civico
(Poma, 1995)
Phocoena phocoena 1

Livorno
Museo di Storia Naturale del Mediterraneo
A significant collection of cetacean specimens developed together with CSC, including an almost 20 m long magnificent skeleton of a fin whale, which is on display together with other specimens in the grand hall called “Sala del Mare”. As an updated overview of the composition of the collections is not available, the data provided in the present study are reported in the systematic section, on the basis of the sea mammals catalogue published by the museum (Nicolosi and Roselli, 1994; see also Cagnolaro, 1964 and Nicolosi et al., 1997).
**Mazara del Vallo (Trapani)**  
*Istituto per l’Ambiente Marino Costiero del Consiglio Nazionale delle Ricerche, Unità operativa di Torretta Granitola*

- *Grampus griseus* 1  
- *Physseter macrocephalus* 1  
- *Stenella coeruleoalba* 5  
- *Tursiops truncatus* 5  
- *Ziphius cavirostris* 1

**Messina**  
*Acquario Comunale*

- *Pseudorca crassidens* 1  
- *Stenella coeruleoalba* 1  
- *Ziphius cavirostris* 1

**Messina**  
*Dipartimento di Biologia dell’Università degli Studi di Messina*

- *Pseudorca crassidens* 2

**Milano**  
*Museo Civico di Storia Naturale*

The cetacean collection has considerably increased during the last 25 years, especially thanks to the work of L. Cagnolaro and M. Podestà who developed the programs of CSC, which was based at the museum since its foundation up until 2003. The collection consists of 114 specimens belonging to 13 species. The most remarkable specimens are: the skeletons of *Mesoplodon europaeus*, the first and only one for the entire Mediterranean area to date (Podestà *et al.*, 2005), and of *Steno bredanensis*. The museum has a rich and detailed exhibition of cetacean skeletons: a large fin whale, stranded at Alghero in 1855 and acquired in 1865, but mounted only in 1974 (Cagnolaro, 1977); an impressive sperm whale in diving posture (Fig. 3), and a nearly complete representation of small and medium sized cetaceans from the Mediterranean.

- *Balaenoptera physalus* 4  
- *Delphinus delphis* 5  
- *Eubalaena glacialis* 2  
- *Globicephala melas* 6  
- *Grampus griseus* 4  
- *Mesoplodon europaeus* 1  
- *Phocoena phocoena* 1  
- *Physseter macrocephalus* 2  
- *Pseudorca crassidens* 1  
- *Stenella coeruleoalba* 73  
- *Steno bredanensis* 1  
- *Tursiops truncatus* 11  
- *Ziphius cavirostris* 3
Fig. 3 - *Physeter macrocephalus*, skeleton in diving posture/scheletro in postura di immersione, Museo Civico di Storia Naturale di Milano.
Modena
Museo di Zoologia del Dipartimento di Biologia dell’Università degli Studi di Modena e Reggio Emilia

Delphinus delphis 2
Orcinus orca 1
Tursiops truncatus 4

Napoli
Museo Zoologico dell’Università degli Studi “Federico II” di Napoli

A mostly old, but significant collection, whose most important specimen is a mounted skeleton of Eubalaena glacialis, the “Balena di Taranto”, a juvenile specimen caught at Taranto in 1877 (Capellini, 1877). It is the only safely identified specimen of that species from Mediterranean Sea held in a museum. Also, a skeleton of Balaenoptera acutorostrata and some exotic species are to be mentioned (Scillitani et al., 1997; Maio and Picariello, 2000; Maio et al., 2001; Maio & Nappi, 2005).

Balaenoptera acutorostrata 1
Delphinapterus leucas 4
Delphinus delphis 5
Eubalaena glacialis 1
Globicephala melas 2
Grampus griseus 1
Hyperoodon ampullatus 1
Lagenorhynchus acutus 1
Phocoena cfr. phocoena 1
Stenella coeruleoalba 8
Tursiops truncatus 6

Napoli
Stazione Zoologica “A. Dohrn”
(Maio et al., 2001)

Delphinus delphis 3
Stenella coeruleoalba 1

Nora (Cagliari)
Centro Recupero Cetacei e Tartarughe Marine “Laguna di Nora”

Delphinus delphis 1
Globicephala melas 1
Physeter macrocephalus 1
Pseudorca crassidens 1
Tursiops truncatus 1

Ozzano Emila (Bologna)
Istituto Superiore per la Protezione e Ricerca Ambientale

Physeter macrocephalus 1
Padova
Museo di Zoologia dell’Università degli Studi di Padova
A historical collection, which includes the remains of a ca. 10 m long skeleton (not complete) of a sperm whale dating from the 18th century (1767, near Zara) (Parona, 1897; Minelli, 1982).
Delphinus delphis 3
Grampus griseus 1
Physeter macrocephalus 1
Tursiops truncatus 2

Padova
Museo didattico di Medicina Veterinaria dell’Università degli Studi di Padova e Banca tessuti
The Mediterranean Marine Mammals Tissue Bank (www.mammiferimarini.sperivet.unipd.it), founded in 2002, has the mission to collect, preserve, catalogue and distribute tissue samples from marine mammals stranded along the coasts of Italy and other Mediterranean countries. The Bank operates under the ACCO-BAMS agreement and in cooperation with the Ministry for the Environment and Protection of the Territory and Seas. Since its foundation the Bank has collected some 2000 samples from over 150 marine mammals belonging to various species. In addition to tissue samples there is a large collection of marine mammals’ parasites. At present, the Bank also preserves several complete and incomplete skeletons, mainly obtained as a result of necropsies carried out in the same institution. In particular:
Balaenoptera physalus 1
Grampus griseus 3
Stenella coeruleoalba 3
Tursiops truncatus 12
Ziphius cavirostris 2

Palermo
Museo di Zoologia “P. Doderlein” Dipartimento di Biologia Animale dell’Università degli Studi di Palermo
A small collection of historical interest with partial specimens of sperm whale and skulls of a pilot and a beaked whales (Di Palma, 1979; Sarà, 2000).
Globicephala melas 1
Physeter macrocephalus 1
Ziphius cavirostris 1

Palermo
“Wilderness Studi Ambientali”
Balaenoptera physalus 2

Parma
Museo di Storia Naturale dell’Università degli Studi di Parma
A large sperm whale’s mandible is noteworthy.
Delphinus delphis 1
Physeter macrocephalus 1
Pavia
Museo di Zoologia e Museo di Anatomia Comparata dell’Università degli Studi di Pavia
A collection of great historical value currently under re-arrangement. It includes the only skeletal material existing in Italy of *Balaena mysticetus* and one complete skeleton of *Balaenoptera physalus* (Galeotti, 1988).

*Balaena mysticetus* 2
*Balaenoptera physalus* 1
*Delphinapterus leucas* 1
*Delphinus delphis* 3
*Monodon monoceros* 2
*Orcinus orca* 1
*Phocoena phocoena* 1
*Tursiops truncatus* 3

Pescara
Museo del Mare
The collection, initiated in the 1960s by Guglielmo Pepe at the Museo Ittico, located on the ground floor area of the Fish Market, was remarkably increased from 1984 onwards by Vincenzo Olivieri in collaboration with CSC. Afterwards the museum was closed to the public for several years up until April 6th, 2008 when the first thematic section dedicated to Mediterranean mammals and reptiles of the new Museo del Mare was inaugurated, giving a new opportunity to use the cetacean collection.

*Balaenoptera physalus* 1
*Grampus griseus* 2
*Physeter macrocephalus* 2
*Stenella coeruleoalba* 2
*Tursiops truncatus* 4
*Ziphius cavirostris* 1

Portici (Napoli)
Istituto Zooprofilattico Sperimentale del Mezzogiorno
(Maio *et al*., 2001)
*Stenella coeruleoalba* 1

Reggio Emilia
Museo Civico “Lazzaro Spallanzani”
An important historical collection with specimens dating from the time of Lazzaro Spallanzani (18th century) and also assignable to more recent scientists. There are two mounted dolphins from the second half of the 18th century and a mounted juvenile sperm whale dating from the stranding of 9 individuals at Chioggia in 1934 (Jona, 1888).

*Delphinus delphis* 2
*Physeter macrocephalus* 1

Riccione (Rimini)
Fondazione Cetacea onlus
The Fondazione Cetacea was part of the national strandings network (CSC) since its establishment up until 2001, subsequently continuing its work autonomou-
sly along the coasts of northern Adriatic Sea. Some specimens of great scientific importance have been collected over the years, and are now catalogued and preserved in the collection. Several specimens are on public exhibit at the Centro Adria, inaugurated in 2009.

* Balaenoptera physalus 1
* Grampus griseus 2
* Stenella coeruleoalba 2
* Tursiops truncatus 19

**Roma**

**Museo di Anatomia Comparata “Battista Grassi” dell’Università degli Studi “La Sapienza” di Roma**

An important collection of considerable historical significance, containing 11 specimens of 7 species, reorganized for educational purposes in recent years. Outstanding specimens include the large mounted skeleton of *Balaenoptera physalus*, stranded near Santa Marinella (Roma) in 1866. It was already displayed at the time of the Pope Pio IX (1846-1878) in the Botanic Gardens as part of a unique reconstruction of that period entitled “Rorqualus Pianus” in honour of the Pope (Anon., 1994). A mounted skeleton, dating from 1832, of a sub-adult specimen of *Physeter macrocephalus* is also remarkable. It belonged to the collection of the Archiginnasio, together with other material of the same species, some of which dates back to the *Museo Kirkeriano* (17th century).

* Balaenoptera acutorostrata 1
* Balaenoptera physalus 3
* Delphinus delphis 2
* Physeter macrocephalus 2
* Sousa chinensis 1
* Stenella coeruleoalba 2
* Tursiops truncatus 2

**Roma**

**Collegio Nazareno**

*Balaenoptera acutorostrata* 1

*Pseudorca crassidens* 1

**Roma**

**Museo Civico di Zoologia**

The Cetacean collection dates from the 19th century and is one of the most important collections of the Mediterranean area. Three main periods of cetacean research may be identified. In the first, A. Carruccio (1870-1932), director of the museum, a part of the university at that time, recovered a specimen of minke whale in 1899, laying the groundwork for a long cetacean research tradition. The second phase of intense activity developed thanks to the curator G. Tamino, who greatly increased the collection and, through his studies, created a scientific landmark for cetology between 1950 and 1970. The third period started in 1986 joining the stranding network created by CSC, thanks to Rossella Carlini, coordinator of the project in Latium (Carlini, 1988; 1990).

* Balaenoptera acutorostrata 1
* Balaenoptera physalus 2
Delphinus delphis 7
Globicephala melas 2
Grampus griseus 7
Phocoena phocoena 2
Physeter macrocephalus 1
Stenella coeruleoalba 31
Tursiops truncatus 13
Ziphius cavirostris 3

San Benedetto del Tronto (Ascoli Piceno)
Museo Civico “Capriotti”
Balaenoptera musculus 1
Physeter macrocephalus 1
Pseudorca crassidens 1
Stenella coeruleoalba 1
Tursiops truncatus 2

Sassari
Dipartimento di Biologia Animale, Facoltà di Medicina Veterinaria dell’Università degli Studi di Sassari
Balaenoptera physalus 1
Delphinus delphis 1
Tursiops truncatus 1

Sassari
Dipartimento di Zoologia e Genetica evoluzionistica dell’Università degli Studi di Sassari
Stenella coeruleoalba 1

Siena
Museo di Storia Naturale dell’Accademia dei Fisiocritici

The collection contains 118 almost exclusively Italian specimens belonging to 9 species. It was mainly formed during the last 20 years with specimens from the Tuscan coasts in collaboration with CSC up until the end of 2007. Since 2008 the museum forms part of the Osservatorio Toscano Cetacei (O.T.C.), founded by the Region Tuscany in order to promote the study and protection of Marine Mammal populations. As most specimens include complete skeletons with biometric data of the carcasses, the collection is mainly of interest for research purposes. The most remarkable specimens include: a ca. 15 m long mounted skeleton of Balaenoptera physalus (collected at Piombino in 1974), two skulls of Phocoena phocoena relicta from the Sea of Azov, and the exceptional skeleton of Kogia sima, the first record for the Mediterranean, stranded near Foce Chiarore, Capalbio (Grosseto, Tuscany) in 1988 (Baccetti et al., 1991). Two baleens of Balaena mysticetus also need to be mentioned (Pezzo et al., 1995).

Balaenoptera physalus 1
Delphinus delphis 2
Globicephala melas 2
Grampus griseus 9
Kogia sima 1
Phocoena phocoena relicta 2
Stenella coeruleoalba 63
Tursiops truncatus 35
Ziphius cavirostris 3

Taranto
Istituto sperimentale Talassografico “A. Cerruti”
Balaenoptera physalus 1
Delphinus delphis 1
Grampus griseus 1
Phocoena phocoena 1
Tursiops truncatus 1
Ziphius cavirostris 1

Torino
Museo Regionale di Scienze Naturali
A museum of great historical interest. Items from the Istituti di Zoologia e di Anatomia Comparata of the university are also housed therein. Two large skeletons of Balaenoptera physalus are particularly significant: one displayed in the unique style of mid-19th century, thanks to the work of Cantù in 1853, while the other is disarticulated. The collection also includes an incomplete skull and other bones of Megaptera novaeangliae, representing the second, although partial, adult specimen of that species housed in an Italian museum, and a partial skull of Physeter macrocephalus dating from the 18th century (Tortonese, 1963a).
Balaenoptera physalus 2
Delphinus delphis 2
Grampus griseus 1
Megaptera novaeangliae 1
Physeter macrocephalus 2
Tursiops truncatus 2

Treviso
Museo Zoologico “G. Scarpa”
A small collection with old material containing some Delphinidae, as well as a fetus of a rorqual from northern seas.
Balaenoptera physalus 1
Delphinus delphis 2
Grampus griseus 2
Tursiops truncatus 1

Trieste
Museo Civico di Storia Naturale
An interesting collection with regard to specimens from the Adriatic Sea. The mounted skeletons of Balaenoptera physalus, Physeter macrocephalus and Monodon monoceros are remarkable.
Balaenoptera physalus 1
Delphinus delphis 7
Grampus griseus 3
Monodon monoceros 1
**Phocoena phocoena** 1  
**Physeter macrocephalus** 1  
**Stenella coeruleoalba** 1  
**Tursiops truncatus** 9

**Udine**  
**Museo Friulano di Storia Naturale**  
(Lapini, 1988)  
**Delphinus delphis** 1  
**Tursiops truncatus** 1

**Venezia**  
**Museo Civico di Storia Naturale**  
A significant collection with 19 specimens, mostly of **Tursiops truncatus** and **Physeter macrocephalus** (Bon, 1996).  
**Balaenoptera physalus** 1  
**Delphinus delphis** 2  
**Grampus griseus** 2  
**Monodon monoceros** 1  
**Physeter macrocephalus** 4  
**Tursiops truncatus** 9

**Verona**  
**Museo Civico di Storia Naturale**  
A skeleton of **Tursiops truncatus** and a skull and an incomplete post-cranial skeleton of **Balaenoptera physalus** are on exhibit.  
**Balaenoptera physalus** 1  
**Delphinus delphis** 1  
**Tursiops truncatus** 2

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Tab. 2 - Number of items for each institution, listed by decreasing number of specimens.

| Institution                                                                 | N. specimens | N. taxa |
|----------------------------------------------------------------------------|--------------|---------|
| Museo Civico di Storia Naturale “G. Doria”, Genova                          | 196          | 15      |
| Museo di Storia Naturale dell’Accademia dei Fisiocriti, Siena               | 118          | 9       |
| Museo Civico di Storia Naturale di Milano                                    | 114          | 13      |
| Museo di Storia Naturale, Sezione di Zoologia “La Specola”                  | 84           | 25      |
| dell’Università degli Studi di Firenze                                      |              |         |
| Museo Civico di Zoologia di Roma                                             | 69           | 10      |
| Museo di Storia Naturale e del Territorio dell’Università degli Studi di Pisa alla Certosa di Calci (PI) | 55           | 27      |
| Institution                                                                 | N. specimens | N. taxa |
|----------------------------------------------------------------------------|--------------|--------|
| Museo di Storia Naturale del Mediterraneo, Livorno                         | 36           | 8      |
| Museo Civico di Storia Naturale di Comiso (RG)                              | 35           | 11     |
| Museo Zoologico dell’Università degli Studi “Federico II” di Napoli        | 31           | 11     |
| Museo Civico di Storia Naturale di Trieste                                  | 24           | 8      |
| Fondazione Cetacea onlus, Riccione (RN)                                     | 24           | 4      |
| Museo didattico di Medicina Veterinaria dell’Università degli Studi di Padova e Banca tessuti, Legnaro | 21           | 5      |
| Museo Civico di Storia Naturale di Venezia                                  | 19           | 6      |
| Museo di Anatomia Comparata del Dipartimento di Scienze della Terra, dell’Ambiente e della Vita dell’Università degli Studi di Genova | 15           | 4      |
| Museo di Anatomia Comparata dell’Università degli Studi di Bologna          | 14           | 9      |
| Museo di Zoologia e Museo di Anatomia Comparata dell’Università degli Studi di Pavia | 14           | 8      |
| Museo di Anatomia Comparata “Battista Grassi” dell’Università degli Studi “La Sapienza” di Roma | 13           | 7      |
| Istituto per l’Ambiente Marino Costiero del Consiglio Nazionale delle Ricerche, Unità operativa di Torretta Granitola, Mazara del Vallo (TP) | 13           | 5      |
| Museo del Mare, Pescara                                                    | 12           | 6      |
| Museo del Mare, Sezione del Museo Civico di Gallipoli (LE)                  | 11           | 6      |
| Museo Regionale di Scienze Naturali, Torino                                 | 10           | 6      |
| Museo di Zoologia dell’Università degli Studi di Padova                     | 7            | 4      |
| Museo di Zoologia del Dipartimento di Biologia dell’Università degli Studi di Modena e Reggio Emilia, Modena | 7            | 3      |
| Museo di Zoologia del Dipartimento di Biologia Animale “M. La Greca” dell’Università degli Studi di Catania | 6            | 6      |
| Istituto sperimentale Talassografico “A. Cerruti”, Taranto                 | 6            | 6      |
| Museo Civico “Capriotti”, San Benedetto del Tronto (AP)                     | 6            | 5      |
| Museo Zoologico “G. Scarpa”, Treviso                                       | 6            | 4      |
| Museo Civico di Scienze Naturali “E. Caffi”, Bergamo                       | 5            | 5      |
| Centro Recupero Cetacei e Tartarughe Marine “Laguna di Nora”, Nora (CA)    | 5            | 5      |
| Museo Civico di Storia Naturale di Ferrara                                 | 5            | 4      |
| Institution                                                                 | N. specimens | N. taxa |
|-----------------------------------------------------------------------------|--------------|---------|
| Gabinetto di Scienze Naturali dell’Istituto Tecnico Commerciale “O. G. Costa”, Lecce | 4            | 4       |
| Museo Civico di Storia Naturale di Verona                                   | 4            | 3       |
| Museo di Zoologia dell’Università degli Studi di Bologna                     | 4            | 2       |
| Stazione Zoologica “A. Dohrn”, Napoli                                      | 4            | 2       |
| Servizio Laboratorio Ambientale e Acquario Provinciale, Bari                 | 3            | 3       |
| Acquario Comunale di Messina                                                | 3            | 3       |
| Museo di Zoologia “P. Doderlein” Dipartimento di Biologia Animale dell’Università degli Studi di Palermo | 3            | 3       |
| Dipartimento di Biologia Animale, Facoltà di Medicina Veterinaria dell’Università degli Studi di Sassari | 3            | 3       |
| Museo Civico “Lazzaro Spallanzani”, Reggio Emilia                          | 3            | 2       |
| Museo del Dipartimento di Biologia dell’Università degli Studi di Cagliari  | 2            | 2       |
| Museo Archeologico di Lacco Ameno (Isola d’Ischia, NA)                      | 2            | 2       |
| Museo di Storia Naturale dell’Università degli Studi di Parma                | 2            | 2       |
| Collegio Nazareno, Roma                                                     | 2            | 2       |
| Museo Friulano di Storia Naturale, Udine                                    | 2            | 2       |
| Dipartimento di Biologia dell’Università degli Studi di Messina              | 2            | 1       |
| “Wilderness Studi Ambientali”, Palermo                                      | 2            | 1       |
| Museo Zoologico dell’Università degli Studi di Bari                         | 1            | 1       |
| Museo dei Fossili, Castell’Arquato (PC)                                     | 1            | 1       |
| Museo di Storia Naturale della Maremma, Grosseto                            | 1            | 1       |
| Museo Civico di Lecco                                                       | 1            | 1       |
| Istituto Superiore per la Protezione e Ricerca Ambientale, Ozzano Emilia (BO)| 1            | 1       |
| Istituto Zooprofilattico Sperimentale del Mezzogiorno, Portici (NA)          | 1            | 1       |
| Dipartimento di Zoologia e Genetica evoluzionistica dell’Università degli Studi di Sassari | 1            | 1       |
Systematic order of the specimens

Data concerning the preservation techniques and number of specimens of each collection are summarized below in systematic order. Any information about specimens’ acquisition period is also included whenever known.

Tables legend
1701-1800 Collecting period
1801-1900 Collecting period
1901-1985 Collecting period
1986-2007 Collecting period
BA1 Servizio Laboratorio Ambientale e Acquario Provinciale di Bari
BA2 Museo Zoologico dell’Università degli Studi di Bari
BG Museo Civico di Scienze Naturali “E. Caffi”, Bergamo
BO1 Museo di Anatomia Comparata dell’Università degli Studi di Bologna
BO2 Museo di Zoologia dell’Università degli Studi di Bologna
CA Museo del Dipartimento di Biologia dell’Università degli Studi di Cagliari
Cal Museo di Storia Naturale e del Territorio dell’Università degli Studi di Pisa alla Certosa di Calci (PI)
Car Museo dei Fossili di Castell’Arquato (PC)
CT Museo di Zoologia del Dipartimento di Biologia Animale “M. La Greca” dell’Università degli Studi di Catania
Cm Museo Civico di Storia Naturale di Comiso (RG)
DS Disarticulated skeleton
ES Extra Mediterranean seas
F Fetus
FE Museo Civico di Storia Naturale di Ferrara
FI Museo di Storia Naturale, Sezione di Zoologia “La Specola” dell’Università degli Studi di Firenze
Ga Museo del Mare, Sezione del Museo Civico di Gallipoli (LE)
GE1 Museo Civico di Storia Naturale “G. Doria”, Genova
GE2 Museo di Anatomia Comparata del Dipartimento di Scienze della Terra, dell’Ambiente e della Vita dell’Università degli Studi di Genova
GR Museo di Storia Naturale della Maremma, Grosseto
Is Museo Archeologico di Lacco Ameno (Isola d’Ischia, NA)
L Liquid preserved specimen
LE Gabinetto di Scienze Naturali dell’Istituto Tecnico Commerciale “O. G. Costa”, Lecce
LC Museo Civico di Lecco
LI Museo di Storia Naturale del Mediterraneo, Livorno
M Mandible
Maz Istituto per l’Ambiente Marino Costiero del Consiglio Nazionale delle Ricerche, Unità operativa di Torretta Granitola, Mazara del Vallo (TP)
ME1 Acquario Comunale di Messina
| Code | Description |
|------|-------------|
| ME2  | Dipartimento di Biologia dell’Università degli Studi di Messina |
| MED  | Mediterranean Sea |
| MI   | Museo Civico di Storia Naturale di Milano |
| MO   | Museo di Zoologia del Dipartimento di Biologia dell’Università degli Studi di Modena e Reggio Emilia |
| MS   | Mounted skeleton |
| NA1  | Museo Zoologico dell’Università degli Studi “Federico II” di Napoli |
| NA2  | Stazione Zoologica “A. Dohrn”, Napoli |
| No   | Centro Recupero Cetacei e Tartarughe Marine “Laguna di Nora”, Nora (CA) |
| Oz   | Istituto Superiore per la Protezione e Ricerca Ambientale di Ozzano Emilia (BO) |
| PD1  | Museo di Zoologia dell’Università degli Studi di Padova |
| PD2  | Museo didattico di Medicina Veterinaria dell’Università degli Studi di Padova e Banca tessuti |
| PA1  | Museo di Zoologia “P. Doderlein” Dipartimento di Biologia Animale dell’Università degli Studi di Palermo |
| PA2  | “Wilderness Studi Ambientali”, Palermo |
| PE   | Museo del Mare di Pescara |
| Po   | Istituto Zooprofilattico Sperimentale del Mezzogiorno, Portici (NA) |
| PR   | Museo di Storia Naturale dell’Università degli Studi di Parma |
| PS   | Partial skeleton |
| PV   | Museo di Zoologia e Museo di Anatomia Comparata dell’Università degli Studi di Pavia |
| RE   | Museo Civico “Lazzaro Spallanzani”, Reggio Emilia |
| Ri   | Fondazione Cetacea onlus, Riccione (RN) |
| RM1  | Museo di Anatomia Comparata “Battista Grassi” dell’Università degli Studi “La Sapienza” di Roma |
| RM2  | Museo Civico di Zoologia, Roma |
| RM3  | Collegio Nazareno, Roma |
| S    | Skull |
| Sbt  | Museo Civico “Capriotti”, San Benedetto del Tronto (AP) |
| SI   | Museo di Storia Naturale dell’Accademia dei Fisiocritici, Siena |
| SS1  | Dipartimento di Biologia Animale, Facoltà di Medicina Veterinaria dell’Università degli Studi di Sassari |
| SS2  | Dipartimento di Zoologia e Genetica evoluzionistica dell’Università degli Studi di Sassari |
| T    | Taxidermic preparation |
| TA   | Istituto sperimentale Talassografico “A. Cerruti”, Taranto |
| TO   | Museo Regionale di Scienze Naturali di Torino |
| Total| Total number of specimens |
| TS   | Museo Civico di Storia Naturale di Trieste |
| TV   | Museo Zoologico “G. Scarpa”, Treviso |
| UD   | Museo Friuliano di Storia Naturale di Udine |
| VE   | Museo Civico di Storia Naturale di Venezia |
| VR   | Museo Civico di Storia Naturale di Verona |
Order CETACEA Brisson, 1762
Suborder MYSTICETI Flower, 1864
Family Balaenidae Gray, 1821

*Balaena* Linnaeus, 1758
*Balaena mysticetus* Linnaeus, 1758
Bowhead whale - Balena della Groenlandia

FI: 3 baleen, 1843.
PV: 1 mandible, 1 scapula and 1 vertebra, 1783; 2 baleen, 1 fetus mounted prior to 1913.
SI: 2 baleen.

*Eubalaena*, Gray 1864
*Eubalaena glacialis* (Müller, 1776)
North Atlantic right whale - Balena franca nordatlantica

Fig. 4 - *Eubalaena glacialis*, skeleton/scheletro, Certosa di Calci (Pisa).
Tab. 3 - *Eubalaena glacialis*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|--------|-----|
| BO1         | 1  | 1  | 1  |   |   |   |   |   | 1     |           |           |           |           |        |     |
| Cal         | 1  | 1  | 1  |   |   |   |   |   | 2     |           |           |           |           |        |     |
| MI          |    | 2  | 2  |   |   |   |   |   |       |           |           |           | 2         |        |     |
| NA1         | 1  | 1  | 1  |   |   |   |   |   | 3     |           |           |           |           |        |     |
| Total       | 2  | 3  | 5  | 2 | 1 | 3 |   |   | 13    | 7          | 2         | 10        | 2       |        |     |

Family Balaenopteridae Gray, 1864

*Balaenoptera* Lacépède, 1804

*Balaenoptera acutorostrata* Lacépède, 1804
Common minke whale - *Balenoettera minore*

Tab. 4 - *Balaenoptera acutorostrata*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|--------|-----|
| BO1         |    | 1  | 1  |   |   |   |   |   |       |           |           |           |           |        |     |
| Cal         | 1  | 1  | 1  |   |   | 2 | 2 | 1 | 3     |           |           |           |           |        |     |
| FI          | 1  | 1  | 1  |   |   | 2 | 1 | 1 | 3     |           |           |           |           |        |     |
| GE1         | 1  | 1  | 1  |   | 3 | 2 | 1 | 3 |       |           |           |           |           |        |     |
| NA1         | 1  | 1  | 1  |   |   |   |   |   | 1     |           |           |           |           |        |     |
| RM1         |    | 1  | 1  |   |   |   |   |   | 1     |           |           |           |           |        |     |
| RM2         | 1  |    | 1  |   |   | 1 |   |   |       |           |           |           |           |        |     |
| RM3         |    | 1  | 1  |   |   |   |   |   | 1     |           |           |           |           |        |     |
| Total       | 3  | 4  | 1  | 2 | 2 | 12| 1 | 7 | 10    | 2         | 2         | 2         | 10       | 2      |     |

*Balaenoptera borealis* Lesson, 1828
Sei whale - *Balenoettera boreale*

Cal: 1 disarticulated skeleton 1897, Arctic Atlantic.
**Balaenoptera musculus** (Linnaeus, 1758)
Blue whale - Balenottera azzurra

Cal: 1 mounted skeleton, Iceland, 1899.
Sbt: 1 right mandible from Mauritania, 20th century.

**Balaenoptera physalus** (Linnaeus, 1758)
Fin whale - Balenottera comune

Tab. 5 - *Balaenoptera physalus*. (* on loan from Napoli Museum).

| Institution | MS | DS | PS | M  | S  | T  | F  | L  | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|----|----|----|----|-------|-----------|-----------|-----------|-----------|-------|-----|
| BA1         |    |    |    |    | 1  |    | 1  | 1  | 1     | 1          |           |           |           |        |     |
| CA          |    |    |    |    |    |    |    | 1  | 1     | 1          |           |           |           |        |     |
| Cal         | 1  | 4  | 1  | 3  |    | 9  | 1  | 4  | 3     | 8          | 1         |           |           |        |     |
| Cm          | 2  | 1  |    |    |    | 3  |    |    |       | 3          | 3         |           |           |        |     |
| Fl          | 1  | 2  |    |    |    |    | 3  |    | 3     | 3          |           |           |           |        |     |
| Ga          |    |    |    |    |    | 1  |    | 1  | 1     | 1          |           |           |           |        |     |
| GE1         | 1  | 1  |    |    |    | 1  | 3  | 2  | 1     | 3          |           |           |           |        |     |
| LE          |    |    |    |    |    |    | 1  |    | 1     | 1          |           |           |           |        |     |
| Li          | 1  |    |    |    |    |    |    | 2  | 2     | 2          | 2         |           |           |        |     |
| MI          | 1  | 2  |    | 1  | 4  | 1  | 2  | 1  | 4     | 11         | 10        | 14        | 2         | 8    |     |
| PD2         |    | 1  |    |    |    |    |    |    |       | 1          | 1         |           |           |        |     |
| PA2         | 1  | 1  |    |    |    |    |    | 2  | 2     | 2          |           |           |           |        |     |
| PV          | 1  |    |    |    |    |    |    | 1  | 1     | 1          |           |           |           |        |     |
| PE          |    |    |    |    |    |    | 1  |    | 1     | 1          |           |           |           |        |     |
| Ri          |    |    |    |    |    |    |    | 1  | 1     | 1          |           |           |           |        |     |
| RM1         | 1  | 1  | 1  |    |    |    |    | 3  | 2     | 2          |           |           |           |        |     |
| RM2         | 1  | 1  |    |    |    |    |    | 2  | 2     | 2          |           |           |           |        |     |
| SS1         |    |    |    |    |    |    |    | 1  |    | 1        | 1         |           |           |           |        |     |
| SI          | 1  |    |    |    |    |    |    |    | 1     | 1          |           |           |           |        |     |
| TA          |    |    |    |    |    |    |    | 1  | 1     | 1          |           |           |           |        |     |
| TO          | 1  | 1  |    |    |    |    |    | 2  | 2     | 2          |           |           |           |        |     |
| TV          |    |    |    |    |    |    | 1  | 1  | 1     | 1          |           |           |           |        |     |
| TS          |    |    |    |    |    |    | 1  |    | 1     | 1          |           |           |           |        |     |
| VE          |    |    |    |    |    |    |    | 1* | 1     | 1          |           |           |           |        |     |
| VR          |    |    |    |    |    |    | 1  |    | 1     | 1          |           |           |           |        |     |
| Total       | 11 | 10 | 14 | 2  | 8  | 3  | 48 | 15 | 14    | 16         | 45        | 2         |           |        |     |
Megaptera Gray, 1846

*Megaptera novaeangliae* (Borowski, 1781)
Humpback whale - Megattera

Cal: 1 mounted skeleton, Iceland 1895.
Fl: 1 mounted skeleton, New Zealand 1884.
To: 1 skull, Bahia 1840.

Suborder ODONTOCETI Flower, 1867
Family Delphinidae Gray, 1821

*Cephalorhynchus* Gray, 1846

*Cephalorhynchus eutropia* Gray, 1846
Chilean dolphin - Cefalorinco eutropia

Fl: 2 skulls, Chile 1873.

*Cephalorhynchus hectori* (Van Beneden, 1881)
Hector’s dolphin - Cefalorinco di Hector

Cal: 1 mounted skeleton, New Zealand 1897.

*Delphinus* Linnaeus, 1758

*Delphinus capensis* Gray, 1828
Long-beaked Common Dolphin - Delfino comune dal lungo rostro

Fl: 1 disarticulated skeleton, Somalia, 1973.

*Delphinus delphis* Linnaeus, 1758
Common dolphin - Delfino comune

Tab. 6 - *Delphinus delphis*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|-----------|-----|-----|
| BG          |    |    |    | 1 |   |   |   |   | 1     |           |           |           |           |           |     |     |
| BO1         | 1  |    |    | 1 |   |   |   |   | 2     |           |           |           |           |           |     |     |
| BO2         | 2  | 1  |    |   |   |   |   |   | 3     |           |           |           |           |           |     |     |
| Cal         | 1  | 1  | 1  |   |   |   |   |   | 3     | 2          | 1         | 1         | 3         |       |     |
| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|------------|-----------|--------|-----|
| Car         | 1  |    |    |   |   |   |   |   |       |           |           |            |           |        |     |
| CT          | 1  |    |    |   |   |   |   |   |       |           |           |            |           |        |     |
| Cm          | 1  | 3  |    | 1 |   |   |   |   | 5     |           |           |            |           |        | 5   |
| FE          | 1  |    |    |   | 1 |   |   |   |       |           |           |            |           |        | 2   |
| FI          | 1  | 1  | 4  | 6 | 3 | 15|   |   | 9     |           |           |            |           | 6     | 8   |
| Ga          | 1  |    |    |   | 1 | 2 |   |   |       |           |           |            |           |        | 2   |
| GE1         | 3  |    | 8  | 2 | 7 | 1 | 21|   | 8     |           |           |            |           | 8     | 16  |
| GE2         | 1  |    |    |   |   |   |   | 1 |       |           |           |            |           | 2     |     |
| Is          | 1  |    |    |   | 1 | 1 |   |   |       |           |           |            |           | 1     | 1   |
| LE          | 1  |    |    |   |   |   |   |   |       |           |           |            |           |        |     |
| Li          | 1  |    |    |   | 1 |   |   | 1 |       |           |           |            |           |        | 1   |
| MI          | 1  | 4  | 5  |   |   |   |   |   |       |           |           |            |           | 4     | 1   |
| MO          |    | 2  | 2  |   |   |   |   |   |       |           |           |            |           |        |     |
| NA1         | 1  | 1  | 3  | 5 | 4 | 1 |   |   |       |           |           |            |           | 1     | 1   |
| NA2         |    |    | 3  | 3 |   |   |   |   |       |           |           |            |           | 3     | 3   |
| No          | 1  |    |    |   |   |   |   |   |       |           |           |            |           |        |     |
| PD1         | 1  | 1  | 1  | 3 | 1 | 1 |   |   |       |           |           |            |           | 1     | 2   |
| PR          |    | 1  | 1  |   |   |   |   |   |       |           |           |            |           |        |     |
| PV          | 2  | 1  | 3  | 2 |   |   |   |   |       |           |           |            |           | 1     |     |
| RE          |    | 2  | 2  |   |   |   |   |   |       |           |           |            |           |        |     |
| RM1         | 1  |    | 2  |   | 2 | 2 |   |   |       |           |           |            |           |        |     |
| RM2         | 4  | 2  | 7  |   |   |   |   |   |       |           |           |            |           | 7     | 7   |
| SS1         | 1  |    |    |   |   |   |   |   |       |           |           |            |           |        |     |
| SI          | 1  | 1  | 2  | 1 |   |   |   |   |       |           |           |            |           | 1     | 1   |
| TA          |    |    | 1  | 1 |   |   |   |   |       |           |           |            |           | 1     |     |
| TO          | 2  |    |    |   |   |   |   |   |       |           |           |            |           |        | 2   |
| TV          |    | 1  | 1  | 2 | 1 | 2 |   |   |       |           |           |            |           |        |     |
| TS          | 1  | 2  | 1  | 3 | 7 |   |   | 1 |       |           |           |            |           |        | 2   |
| UD          |    | 1  |    |   |   |   |   |   |       |           |           |            |           |        | 1   |
| VE          |    | 1  | 1  | 2 | 1 | 1 | 2 |   |       |           |           |            |           |        |     |
| VR          |    | 1  |    |   |   |   |   |   |       |           |           |            |           |        |     |
| Total       | 15 | 11 | 4  | 4 | 41| 23| 10| 6 | 114   | 35         | 33         | 10         | 66     | 9    |
Delphinus delphis ponticus (Barabash, 1935)
GE1: 5 fetuses, Black Sea 1931 (included in table of D. delphis).

Globicephala Lesson, 1828
Globicephala macrorhynchus Gray, 1846
Short-finned pilot whale - Globicefalo di Gray

FI: 1 skull, 1977 Somalia.

Globicephala melas (Traill, 1809)
Long-finned pilot whale - Globicefalo

Tab. 7 - Globicephala melas.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|-------|-----|
| Cal         | 1  |    |    |   |   |   |   |   |       |           |           |           |           |       |     |
| CT          |    | 1  |    |   |   |   |   |   |       |           |           |           |           |       |     |
| Cm          | 1  |    |    |   |   |   |   |   |       |           |           |           |           |       |     |
| FE          |    |    | 1  |   |   |   |   |   |       |           |           |           |           |       |     |
| FI          | 1  |    | 1  |   |   | 1 |   |   |       |           |           |           |           |       |     |
| GE1         | 1  | 1  |    | 6 |   |   |   |   | 8     | 1         | 3         | 4         | 8         |       |     |
| LI          |    | 1  |    |   | 1 |   |   |   | 2     | 1         | 1         |           |           |       |     |
| MI          | 1  | 4  |    |   |   |   |   | 1 | 6     |           |           | 3         | 3         | 6     |      |
| NA1         | 1  | 1  |    |   |   |   |   |   | 2     | 2         |           | 1         | 1         |       |     |
| No          | 1  |    |    |   |   |   |   |   | 1     |           |           |           |           |       |     |
| PA1         | 1  |    |    |   |   |   |   |   |       |           |           |           |           |       |     |
| RM2         | 1  |    |    |   | 2 |   |   |   | 2     | 2         |           |           |           |       |     |
| SI          |    | 2  |    |   |   |   |   |   | 2     | 2         |           |           |           |       |     |
| Total       | 8  | 6  | 3  | 11| 2 | 1 |   |   | 31    | 8         | 9         | 11        | 27      | 1     |     |
Grampus Gray, 1828
*Grampus griseus* (G. Cuvier, 1812)
Risso’s dolphin - Grampo

Tab. 8 - *Grampus griseus*.

| Institution | MS | DS | PS | M  | S  | T  | F  | L  | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|----|----|----|----|------|-----------|-----------|-----------|-----------|-------|-----|
| BO1         | 1  |    |    |    |    |    |    | 1  | 1    | 1         |           |           |           |        |     |
| Cal         | 2  | 1  | 1  |    |    |    | 4  | 2  | 2    | 4         |           |           |           |        |     |
| Cm          | 2  | 2  |    |    |    |    | 4  | 4  | 4    |           |           |           |           |       |     |
| FI          | 2  | 1  | 3  | 1  | 7  | 4  | 2  | 1  | 5    |           |           |           |           |       |     |
| Ga          | 1  | 1j |    |    |    |    | 2  | 2  |       |           |           |           |           |       |     |
| GE1         | 3  | 8  | 4  | 2  | 1  | 18 | 2  | 6  | 10   | 18        |           |           |           |       |     |
| GR          | 1  |    |    |    |    |    | 1  | 1  | 1    |           |           |           |           |       |     |
| LI          | 1  | 2  |    |    |    |    | 3  | 1  | 1    | 2         |           |           |           |       |     |
| Maz         | 1  |    |    |    |    |    | 1  | 1  | 1    |           |           |           |           |       |     |
| MI          | 1  | 1  | 2  |    |    |    | 4  | 4  | 4    |           |           |           |           |       |     |
| NA1         | 1  |    |    |    |    |    | 1  | 1  | 1    |           |           |           |           |       |     |
| PD1         | 1  |    |    |    |    |    | 1  | 1  | 1    |           |           |           |           |       |     |
| PD2         | 1  | 2  |    |    |    |    | 3  | 3  | 3    |           |           |           |           |       |     |
| PE          | 1  |    |    |    |    | 2  |    | 1  | 1    |           |           |           |           |       |     |
| Ri          | 1  |    |    |    |    | 2  | 2  | 2    |           |           |           |           |           |       |     |
| RM2         | 2  | 2  | 3  |    |    | 7  | 2  | 5  | 7    |           |           |           |           |       |     |
| SI          | 1  | 7  |    |    |    | 9  | 2  | 7  | 9    |           |           |           |           |       |     |
| TA          | 1  |    |    |    |    | 1  | 1  | 1    |           |           |           |           |           |       |     |
| TO          | 1  |    |    |    |    |    | 1  |    |       |           |           |           |           |       |     |
| TV          | 2  |    |    | 2  | 1  |    |    | 1    |           |           |           |           |           |       |     |
| TS          | 1  |    | 1  | 1  | 3  | 2  | 1  | 3    |           |           |           |           |           |       |     |
| VE          | 1  | 1  |    |    | 2  |    | 2  | 2    |           |           |           |           |           |       |     |
| Total       | 18 | 26 | 1  | 27 | 6  | 1  | 79 | 14 | 18   | 43        | 73        |           |           |       |     |
Lagenorhynchus Gray, 1846
Lagenorhynchus acutus (Gray, 1828)
Atlantic white-sided dolphin - Lagenorinco acuto

Cal: 1 mounted skeleton, Faroe, 1894.
NA1: 1 mounted skeleton, 1876.

Lagenorhynchus albirostris (Gray, 1846)
White-beaked dolphin - Lagenorinco rostrobianco

Cal: 1 mounted skeleton, Northern Seas 1894.

Lagenorhynchus obscurus (Gray, 1828)
Dusky dolphin - Lagenorinco scuro

FI: 1 mounted specimen, 1869 Chile; 1 skull, Chile 1898.

Orcaella Gray, 1866
Orcaella brevirostris (Gray, 1866)
Irrawaddy dolphin - Orcella

Cal: 1 mounted skeleton, Borneo 1897.
GE1: 1 mounted skeleton, 1886 Myanmar.
**Orcinus** Fitzinger, 1860

*Orcinus orca* (Linnaeus, 1758)

Killer whale - Orca

Fig. 6 - *Orcinus orca*, skull/cranio, Museo “La Specola”, Firenze.

Tab. 9 - Orcinus orca.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|---------|-----|
| BA1         | 1  |    |    |   |   |   |   |   |       | 1         | 1         | 1         | 1         |        |     |
| Cal         | 1  | 1  |    |   |   |   |   |   |       | 2         | 2         | 2         |           | 2      |     |
| FI          |    |    |    | 1 |   | 1 |   |   |       |           |           |           |           | 1       |     |
| MO          |    |    |    | 1 |   |   |   |   |       |           |           |           |           |         |     |
| PV          |    |    |    | 1 |   | 1 |   |   |       |           |           |           |           |         | 1     |
| Total       | 1  | 1  | 4  |   |   | 6 | 4 | 1 |       | 1         |           |           | 1         | 4       |     |
**Pseudorca** Reinhardt, 1862  
*Pseudorca crassidens* (Owen, 1846)  
False killer whale - Pseudorca

Tab. 10 - *Pseudorca crassidens*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|----------|-----|
| CA          | 1  | 1  | 1  |   |   |   |   |   |       |           |           |           |           |          |      |
| Cal         | 2  | 2  | 2  | 2 | 2 | 2 | 2 | 2 |       |           |           |           |           |          |      |
| CT          | 1  | 1  | 1  |   |   |   |   |   |       |           |           |           |           |          |      |
| FI          | 2  | 2  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| GE1         | 1  | 1  | 2  | 2 | 2 | 2 | 2 | 2 |       |           |           |           |           |          |      |
| ME1         | 1  | 1  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| ME2         | 2  | 2  | 1  |   |   |   |   |   |       |           |           |           |           |          |      |
| MI          | 1  | 1  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| No          | 1  | 1  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| RM3         | 1  | 1  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| Sbt         | 1  | 1  | 1  | 1 | 1 | 1 | 1 | 1 |       |           |           |           |           |          |      |
| Total       | 2  | 1  | 1  | 10| 1 | 15| 5 | 3 | 2     | 10         | 11        | 3          | 5         | 8        | 2      |

**Sousa** Gray, 1866  
*Sousa chinensis* (Osbeck, 1765)  
Indo-Pacific hump-backed dolphin - Susa indo pacifica

GE1: 1 skull, Red Sea 1882.  
RM1: 1 skull.

Fig. 7 - *Sousa chinensis*, skull/cranio, Museo di Anatomia Comparata, Roma.
**Stenella Gray, 1866**  
*Stenella coeruleoalba* (Meyen, 1833)  
Striped dolphin - *Stenella striata*

Tab. 11 - *Stenella coeruleoalba*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|-------|-----|
| BG          |    |    |    |   |   |   |   |   |       |           |           |           |           |        |     |
| Cal         | 1  |    |    |   |   |   |   |   |       | 2          | 3         |           |           |        | 170 |
| CT          |    | 1  |    |   |   |   |   |   |       | 1          | 1         |           |           |        | 180 |
| Cm          |    |    | 6  | 2 | 1 |   |   |   |       | 10         | 10        |           |           |        |     |
| FI          | 10 | 1  |    | 3 | 1 | 1 | 1 | 1 |       | 15         | 1         | 13        | 15       | 1801 |
| Ga          | 1  | 1  |    |   |   |   |   |   |       | 2          | 2         |           |           |        |     |
| GE1         | 8  | 21 |    | 57| 3 | 3 | 8 | 100| 100   | 13         | 87        | 99        | 1        | 1802 |
| GE2         |    | 3  |    |   |   |   |   |   |       | 3          | 3         |           |           |        |     |
| LE          |    | 1  |    |   |   |   |   |   |       | 1          |           |           |           |        |     |
| LI          | 13 | 4  | 17 | 1 | 1 | 14| 15|   |       | 1          |           |           |           |        |     |
| Maz         | 3  | 2  | 5  |   |   |   |   |   |       | 5          | 5         |           |           |        |     |
| ME1         |    | 1  |    |   |   |   |   |   |       | 1          |           |           |           |        |     |
| MI          | 1  | 33 | 39 | 73| 4 | 69| 73|   |       | 4          | 69        | 73        |           |        |     |
| NA1         | 1  | 1  | 5  | 1 | 8 | 3 | 1 | 4 | 5     | 1          |           |           |           |        |     |
| NA2         |    | 1  |    |   |   |   |   |   |       | 1          |           |           |           |        |     |
| PD2         | 3  |    |    |   |   |   |   |   |       | 3          | 3         |           |           |        |     |
| PE          | 2  |    |    |   |   |   |   |   |       | 2          | 2         |           |           |        |     |
| Po          | 1  |    |    |   |   |   |   |   |       | 1          | 1         |           |           |        |     |
| Ri          | 1  | 1  | 2  |   |   |   |   |   |       | 2          | 2         |           |           |        |     |
| RM1         |    |    |    | 2 | 2 | 1 |   |   |       | 4          |           |           |           |        |     |
| RM2         | 1  | 8  | 3  | 18| 1 | 31|   |   |       | 4          | 27        | 31        |           |        |     |
| Sbt         | 1  |    |    |   |   |   |   |   |       | 1          |           |           |           |        |     |
| SS2         |    | 1  |    |   |   |   |   |   |       | 1          |           |           |           |        |     |
| SI          | 53 | 9  | 1  | 63 |   |   |   |   |       | 63         | 63        |           |           |        |     |
| TS          |    |    |    | 1 |   |   |   |   |       | 1          | 1         |           |           |        |     |
| **Total**   | 17 | 146| 15 | 1 | 148| 7 | 6 | 8 | 348   | 5          | 25        | 309       | 337     | 1    |     |

LUIGI CAGNOLARO ET ALII
**Stenella frontalis** (G. Cuvier, 1829)
Atlantic spotted dolphin - Stenella maculata atlantica

FI: 1 skull, 1884 purchased in Palermo, but probably from exotic site.

**Stenella longirostris** (Gray, 1828)
Long-snouted spinner dolphin - Stenella dal lungo rostro

FI: 1 disarticulated skeleton; 1 skull, 1908 Indian Ocean.

**Steno** Gray, 1846
**Steno bredanensis** (Lesson, 1828)
Rough-toothed dolphin - Steno

Tab. 12 - *Steno bredanensis*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|---------|-----|
| BO1         | 1  |    |    |   | 1 | 1 | 1 | 1 | 5     | 2         | 2         | 1         | 1         |         |     |
| Cm          | 2  |    |    |   |   |   |   |   | 2     | 2         |           |           |           |         |     |
| FI          |    | 1  |    |   |   | 1 | 1 | 1 | 5     |           |           | 1         |           |         |     |
| MI          | 1  |    |    |   |   |   |   |   | 1     |           |           | 1         | 1         |         |     |
| Total       | 3  | 2  |    |   | 5 | 2 | 3 | 4 | 1     |           |           |           |           |         |     |

Fig. 8 - *Steno bredanensis*, skull/cranio, Museo di Storia Naturale di Comiso.
**Tursiops Gervais, 1855**

*Tursiops aduncus* (Ehrenberg, 1833)
Indo-Pacific Bottlenose Dolphin; Tursiope indo-pacifico

FI: 1 mandible, South America.

**Tursiops truncatus** (Montagu, 1821)
Bottlenose dolphin - Tursiope

Tab. 13 - *Tursiops truncatus*.

| Institution | MS | DS | PS | M  | S  | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|----|---|---|---|-------|-----------|-----------|-----------|-----------|--------|-----|
| BA2         |    |    |    | 1  |    | 1 |   |   | 1     |            |           |            |           |        |     |
| BO1         | 3  |    |    |    |    |   | 1 |   | 1     |            |           |            |           |        |     |
| Cal         | 2  | 2  | 2  |    | 1  | 7 | 2 | 1 | 6     |            |           |            |           |        |     |
| CT          |    | 1  |    |    | 1  | 1 |   |   | 1     |            |           |            |           |        |     |
| Cm          |    | 2  |    |    |    | 2 |   |   | 2     |            |           |            |           |        |     |
| FE          |    |    |    | 1  |    |   |   |   | 1     |            |           |            |           |        |     |
| FI          | 1  | 4  | 1  | 3  | 3  | 3 | 15|   | 9     | 1          | 5          | 13         |           |        |     |
| Ga          | 1  | 1  |    |    |    | 2 | 1 |   | 1     |            |           |            |           |        |     |
| GE1         | 3  | 4  | 12 | 1  | 20 |   | 4 | 4 | 12    | 20         |           |            |           |        |     |
| GE2         |    | 9  |    |    | 9  |   |   |   | 9     |            |           |            |           |        |     |
| LI          | 6  | 2  |    |    | 8  | 1 |   |   | 7     | 8          |           |            |           |        |     |
| Maz         | 3  | 1  | 1  |    |    | 5 |   |   | 5     | 5          |           |            |           |        |     |
| MI          | 1  | 4  | 6  |    | 11 |   | 4 | 7 | 11    |            |           |            |           |        |     |
| MO          | 1  | 1  | 2  |    |    |   | 4 |   |       |            |           |            |           |        |     |
| NA1         | 4  | 2  |    |    | 6  | 5 | 1 | 1 | 4     |            |           |            |           |        |     |
| No          |    | 1  |    |    | 1  |   |   |   | 1     |            |           |            |           |        |     |
| PD1         | 2  |    |    |    |    |   | 2 |   | 2     |            |           |            |           |        |     |
| PD2         | 10 | 1  | 1  | 12 | 12 | 12| 12| 12| 12    |            |           |            |           |        |     |
| PV          | 1  | 1  | 1  | 3  | 1  | 2 | 1 |   |       |            |           |            |           |        |     |
| PE          | 4  |    |    |    |    | 4 | 1 | 3 | 4     |            |           |            |           |        |     |
| Ri          | 1  |    | 18 |    | 19 | 19|    | 19| 18    |            |           |            |           |        |     |
| RM1         | 1  | 1  |    |    |    | 2 | 2 |   |       |            |           |            |           |        |     |
## Collections of Extant Cetaceans in Italian Museums and Other Scientific Institutions

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|---------|-----|
| RM2         | 4  | 1  | 8  |   |   |   |   |   | 13    | 6         | 5         | 13        |           |         |     |
| Sbt         | 1  |    |    |   |   |   |   |   |       |           |           |           |           |         |     |
| SS1         |    | 1  |    |   |   |   |   |   | 1     |           |           |           |           | 1       |     |
| SI          | 29 | 4  | 1  | 1 |   |   |   |   | 35    | 1         | 2         | 32        | 35       |         |     |
| TA          |    |    |    | 1 |   |   |   |   | 1     |           |           |           |           |         |     |
| TO          | 2  |    |    |   |   |   |   |   |       | 2         | 1         |           | 1        |         |     |
| TV          |    |    |    |   |   | 1 |   |   | 1     |           |           |           |           |         |     |
| TS          | 1  |    |    |   | 5 | 3 |   |   | 9     | 3         | 4         |           |           |         |     |
| UD          |    |    |    |   | 1 |    |   |   | 1     |           |           |           |           |         |     |
| VE          | 1  | 3  | 2  | 2 | 1 |    |   |   | 9     |           |           |           |           |         |     |
| VR          | 1  |    |    |   | 1 |    |   |   | 2     |           |           |           |           |         |     |
| Total       | 20 | 72 | 14 | 2 | 84| 16| 4 | 2 | 214   | 1         | 29        | 24        | 121      | 173     |     |

Family Monodontidae Gray, 1821

Delphinapterus Lacépède, 1804

*Delphinapterus leucas* (Pallas, 1776)

Beluga - Beluga

Tab. 14 - *Delphinapterus leucas*. 

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|---------|-----|
| Cal         | 1  | 1  |    |   |   |   |   |   | 2     | 1         | 1         | 1         | 2        |         |     |
| FI          |    | 1  |    |   |   |   |   |   | 1     |           |           |           |           | 1       |     |
| NA1         | 3  | 1  |    |   |   |   | 4 |   | 4     | 4         |           |           |           | 4       |     |
| PV          |    |    |    | 1 |   | 1 |   |   | 1     |           |           |           |           | 1       |     |
| Total       | 1  | 1  | 5  | 1 | 1 |   | 8 |   | 3     | 1         | 1         |           | 1        | 8       |     |
Monodon Linnaeus, 1758  
**Monodon monoceros** Linnaeus, 1758  
Narwhal - Narvalo

Tab. 15 - *Monodon monoceros*.

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | IT | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|-----|-----|
| BG          | 1  |    |    |   |   | 1 |   |   | 1     |           |           |           |           |     | 1  |
| BO1         |    |    |    |   |   | 1 |   |   | 1     |           |           |           |           |     | 1  |
| Cal         | 1  | 1  |    |   |   | 2 |   |   | 2     |           |           |           |           |     | 2  |
| FI          |    |    |    |   |   | 1 | 1 |   | 1     |           |           |           |           | 1  |     |
| PV          | 2  |    |    |   |   | 2 | 2 |   | 2     |           |           |           |           |     | 2  |
| TS          | 1  |    |    |   |   |   |   |   | 1     |           |           |           |           | 1  |     |
| VE          | 1  |    |    |   |   |   |   |   | 1     |           |           |           |           | 1  |     |
| Total       | 2  | 1  | 1  | 5 |   | 9 | 1 | 4 | 1     | 9         |           |           |           | 1  | 9  |

Family Phocoenidae Gray, 1825

Neophocaena Palmer, 1899  
**Neophocaena phocaenoides** (G. Cuvier, 1829)  
Finless porpoise - Neofocena

Cal: 1 mounted skeleton, Japan 1898.

Fig. 9 - *Phocoena phocoena*, fetus skeleton/scheletro di feto, Museo di Scienze Naturali di Bergamo.
Phocoena G. Cuvier, 1816
*Phocoena phocoena* (Linnaeus, 1758)
Harbor porpoise - Focena comune

Tab. 16 - *Phocoena phocoena*. (*Ph. ph. relicta*, Black Sea).

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|---|---|---|---|-------|------------|------------|------------|------------|------------|-----|-----|
| BG          |    |    |    |    |   |   |   |   |       |            |            |            |            |            |     |     |
| BO1         | 2  | 2  | 2  | 2  |   |   |   |   |       |            |            |            |            |            |     |     |
| Cal         | 1  |    |    |    |   |   |   |   |       |            |            |            |            |            |     |     |
| FI          | 1  | 1  | 1  | 1  |   |   |   |   | 1     |            |            |            |            |            |     |     |
| LC          |    | 1  |    |    |   |   |   |   |       |            |            |            |            |            |     |     |
| MI          | 1  |    |    |    |   |   |   |   | 1     |            |            |            |            |            |     |     |
| NA1         |    | 1  | 1  | 1  |   |   |   |   |       |            |            |            |            |            |     |     |
| PV          | 1  |    |    | 1  |   |   |   |   |       |            |            |            |            |            |     |     |
| RM2         |    |    |    | 2* | 2 | 2 | 2 | 2 |       |            |            |            |            |            |     |     |
| SI          |    |    |    | 2* | 2 | 2 | 2 | 2 |       |            |            |            |            |            |     |     |
| TA          |    |    |    |    | 1 |   |   |   | 1     |            |            |            |            |            |     |     |
| TS          |    |    |    |    | 1 |   |   |   | 1     |            |            |            |            |            |     |     |
| Total       | 2  | 8  | 3  | 2  | 15| 6 | 1 | 4 | 10    |            |            |            |            |            |     |     |

Family Physeteridae Gray, 1821

*Kogia* Gray, 1846
*Kogia sima* (Owen, 1866)
Dwarf sperm whale - Cogia di Owen

Cm: 1 disarticulated skeleton, Sicily 2002.
SI: 1 disarticulated skeleton, Tuscany 1988.
**Physeter** Linnaeus, 1758

*Physeter macrocephalus* Linnaeus, 1758 (= *Ph. catodon* L., 1758)

*Sperm Whale - Capodoglio*

Tab. 17 - *Physeter macrocephalus*. (* on loan from Calci (Pisa). ** on loan from Napoli Museum).

| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|-----------|-----------|-----------|-----------|---------|-----|
| BA1         |    |    |    | 1 |   |   |   |   | 1     |           |           |           |           |         |     |
| BG          | 1  |    |    |    |   |   |   |   | 1     |           |     1      |           |           |         |     |
| BO1         | 1  | 1  |    |    | 2 | 1 |   |   | 2     |           |           |           |           |         |     |
| BO2         |    |    |    | 1 |   |   |   |   | 1     |           |           |           |           |         |     |
| Cal         | 1  | 1  |    |    | 2 | 1 | 1 |   | 2     |           |           |           |           |         |     |
| CT          |    |    |    | 1 | 1 |   | 1 |   | 1     |           |           |           |           |         |     |
| Cm          |    |    |    | 2 |   |   |   | 2 | 2     |           |           |           |           |         |     |

Fig. 10 - *Kogia sima*, skull/cranio, Museo di Storia Naturale dell’Accademia dei Fisiocritici, Siena.
| Institution | MS | DS | PS | M | S | T | F | L | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|---|---|---|---|---|-------|------------|------------|------------|------------|-----------|-----|----|
| FI          | 1  | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| GE1         | lj | 4  |    |   |   |   |   |   |       |            | 4          | 1          | 1          | 4          |       |    |
| Is          |    |    |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| LE          |    | 1  |    |   |   |   |   |   |       |            |            | 1          |            |            |       |    |
| LI          | 1* |    |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| Maz         |    | 1  |    |   |   |   |   |   |       |            |            |            | 1          |            |       |    |
| MI          |    | 2  |    |   |   |   |   |   |       |            |            |            |            | 2          |       |    |
| No          |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| Oz          |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| PD1         |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| PA1         |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| PR          |    |    |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| PE          | 1+lj | 2  |    |   |   |   |   |   |       |            | 1          | 1          |            | 2          |       |    |
| RE          |    |    |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| RM1         | 1  |    |    |   |   |   |   |   |       |            |            | 2          | 1          |            | 2          |       |    |
| RM2         |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| Sbt         |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| TO          |    |    |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| TS          |    | 1  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| VE          | 1** | 2  |    |   |   |   |   |   |       |            |            |            |            |            |       |    |
| Total       | 10 | 7  | 5  | 14| 5 | 1 |   |   |       | 42          | 3          | 10         | 10         | 27         | 5          |     |

**Platanistidae** Gray, 1846

*Platanista* Wagler, 1830

*Platanista gangetica* (Roxburgh, 1801)
Gange’s susu - Platanista del Gange

Cal: 1 mounted skeleton, 1896 Ganges River.
Fl: 1 mounted specimen, 1892 Ganges River.
GE1: 1 mounted skeleton, 1878 Ganges River.
Family Iniidae Gray, 1846

Pontoporia Gray, 1846
Pontoporia blainvillei (Gervais & d’Orbigny, 1844)
Franciscana - Pontoporia

Tab. 18 - Pontoporia blainvillei.

| Institution | MS | DS | PS | M  | S  | T  | F  | L  | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|----|----|----|----|-------|-----------|-----------|-----------|-----------|-------|-----|
| Cal         | 1  |    |    |    |    | 1  | 1  | 1  | 1     | 1         |           |           |           |       |     |
| Cm          | 1  |    |    |    |    |    | 1  |    | 1     |           | 1         |           |           |       |     |
| FE          |    | 1  |    |    |    | 1  |    |    |       |           | 1         |           |           |       | 1   |
| GE1         | 1  |    | 1  |    |    | 2  | 2  |    | 2     |           |           |           |           |       | 2   |
| Total       | 3  | 1  | 1  |    |    | 5  | 3  | 1  | 5     |           |           |           |           |       |     |

Fig. 11 - *Platanista gangetica*, mounted specimen/esemplare montato, Museo “La Specola”, Firenze.

Fig. 12 - *Pontoporia blainvillei*, skull/cranio, Museo Civico di Storia Naturale di Genova.
Family Ziphiidae Gray, 1865

*Hyperoodon* Lacépède, 1804

*Hyperoodon ampullatus* (Forster, 1770)
Northern bottlenose whale - Iperodonte boreale

Cal: 1 mounted skeleton, Faroe 1895.
NA1: 1 skull, Faroe 1865.

*Indopacetus* Moore, 1968

*Indopacetus pacificus* (Longman, 1926)
Longman’s beaked whale - Mesoplodonte di Longman

FI: 1 skull, 1955 Somalia.

*Mesoplodon* Gervais, 1850

*Mesoplodon bowdoini* Andrews, 1908
Andrews’ beaked whale - Mesoplodonte di Andrews

Cal: 1 mounted skeleton, 1897 New Zealand.
Mesoplodon densirostris (de Blainville, 1817)
Blainville’s beaked whale - Mesoplodonte di Blainville
GE1: 1 skull, end 19th century New Guinea.

Mesoplodon europaeus (Gervais, 1855)
Gervais’ beaked whale - Mesoplodonte di Gervais
MI: 1 disarticulated skeleton, 2001 Castiglioncello, Tuscany (Italy).

Fig. 14 - *Mesoplodon bowdoini*, skeleton/scheletro, Certosa di Calci (Pisa).

Fig. 15 - *Mesoplodon europaeus*, skull/cranio, Museo Civico di Storia Naturale di Milano.
**Ziphius G. Cuvier, 1823**

**Ziphius cavirostris** G. Cuvier, 1823

Cuvier’s beaked whale - Zifio

Tab. 19 - *Ziphius cavirostris*.

| Institution | MS | DS | PS | M  | S  | T  | F  | L  | Total | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | MED | ES |
|-------------|----|----|----|----|----|----|----|----|-------|-----------|-----------|-----------|-----------|---------|-----|
| Cal         | 1  | 1  | 1  | 2  | 2  | 2  | 2  |    |       |           |           |           |           |          |      |
| Cm          | 1  | 2  | 1  | 4  | 4  | 4  | 4  |    |       |           |           |           |           |          |      |
| FI          | 1  | 1  |    | 2  | 1  | 1  | 2  |    |       |           |           |           |           |          |      |
| Ga          | 2  |    |    | 2  | 2  | 2  | 2  |    |       |           |           |           |           |          |      |
| GE1         | 2  | 2  | 5  | 1  | 10 | 6  | 4  | 10 |       |           |           |           |           |          |      |
| GE2         | 1  |    |    | 1  |    |    |    |    |       |           |           |           |           |          |      |
| Maz         | 1  |    |    |    |    |    |    |    |       |           |           |           |           |          |      |
| ME1         | 1  |    |    |    |    |    |    |    |       |           |           |           |           |          |      |
| LI          |    | 2  |    | 2  | 1  | 1  | 2  |    |       |           |           |           |           |          |      |
| MI          | 2  | 1  |    | 3  | 2  | 1  | 3  |    |       |           |           |           |           |          |      |
| PD2         | 2  |    |    | 2  | 2  | 2  | 2  |    |       |           |           |           |           |          |      |
| PA1         |    | 1  |    |    |    |    |    |    |       |           |           |           |           |          |      |
| PE          | 1  |    |    | 1  |    |    | 1  | 1  |       |           |           |           |           |          |      |
| RM2         | 2  | 1  |    | 3  | 1  | 1  | 2  |    |       |           |           |           |           |          |      |
| SI          | 3  |    |    |    | 3  |    |    | 3  |       |           |           |           |           |          |      |
| TA          |    | 1  |    |    |    |    |    |    |       |           |           |           |           |          |      |
| Total       | 5  | 11 | 7  | 15 | 1  | 39 | 3  | 10 | 21    | 34        |           |           |           |          |      |

Fig. 16 - *Ziphius cavirostris*, skeleton/scheletro, Museo di Storia Naturale di Comiso.
Tab. 20 - Number of specimens grouped in their respective families and suborders, and divided by preservation technique.

|                | MS | DS | PS | M | S | T | F | L | Total |
|----------------|----|----|----|---|---|---|---|---|-------|
| Balaenidae     | 2  | 4  |    | 1 |  |   |   |   | 7     |
| Balaenopteridae| 17 | 15 | 15 | 3 | 11| 2 | 3 |   | 66    |
| Mysticeti      | 19 | 15 | 15 | 7 | 11| 2 | 4 |   | 73    |
| Delphinidae    | 87 | 267| 38 | 9 | 335| 56| 21| 17| 830   |
| Iniidae        | 3  | 1  | 1  |   |   |   |   |   | 5     |
| Monodontidae   | 3  | 2  | 1  | 10|   | 1 |   |   | 17    |
| Phocoenidae    | 3  | 8  | 3  | 2 |   |   |   |   | 16    |
| Physeteridae   | 10 | 9  | 5  | 14| 5 | 1 |   |   | 44    |
| Platanistidae  | 2  | 1  | 1  |   |   |   |   |   | 3     |
| Ziphiidae      | 7  | 12 | 7  | 18| 1 |   |   |   | 45    |
| Odontoceti     | 115| 290| 51 | 23| 377| 63| 24| 17| 960   |
| Cetacea        | 134| 305| 66 | 30| 388| 65| 28| 17| 1033  |

**Chronology of specimen acquisition**

We could ascertain the collecting period of 910 specimens only, i.e. 88.1% of the total. Data for each family are given in Tab. 21, and Tab. 22 reports those of the 10 most represented species.

At least two specimens date back to the 17th century: a bottlenose dolphin skull from the old Manfredo Settala museum in Milano, now at the Museo Civico di Storia Naturale di Milano, and a sperm whale mandible from the old Museo Kircheriano, now at the Museo di Anatomia Comparata in Roma.

Tab. 21 - Number of specimens grouped in their respective families, and divided by collecting period.

|                | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | Total |
|----------------|-----------|-----------|-----------|-----------|-------|
| Balaenidae     | 1         | 3         |           |           | 4     |
| Balaenopteridae| 2         | 27        | 17        | 18        | 64    |
| Delphinidae    | 3         | 112       | 121       | 499       | 735   |
| Phocoenidae    |           |           |           |           |       |
| Physeteridae   | 3         | 10        | 10        | 12        | 35    |
| Monodontidae   | 1         | 10        | 1         | 1         | 13    |
| Platanistidae  | 3         |           |           |           | 3     |
| Iniidae        |           |           |           |           | 4     |
| Ziphiidae      | 7         | 11        | 22        |           | 40    |
| Total          | 10        | 182       | 161       | 557       | 910   |
Tab. 22 - Number of specimens of the ten most represented species divided by collecting period.

| Species                        | 1701-1800 | 1801-1900 | 1901-1985 | 1986-2007 | Sample amount |
|-------------------------------|-----------|-----------|-----------|-----------|---------------|
| *Balaenoptera physalus*       | 1 (2%)    | 15 (31%)  | 14 (29%)  | 16 (33%)  | 46 (96%)      |
| *Balaenoptera acutorostrata*  | 1 (8%)    | 7 (60%)   | 2 (16%)   | 2 (16%)   | 12 (100%)     |
| *Delphinus delphis*          | 2 (2%)    | 35 (31%)  | 33 (29%)  | 10 (9%)   | 80 (70%)      |
| *Globicephala melas*         |           | 8 (26%)   | 9 (29%)   | 11 (35.5%)| 28 (90%)      |
| *Grampus griseus*            |           | 14 (18%)  | 18 (23%)  | 43 (55%)  | 75 (96%)      |
| *Physeter macrocephalus*     | 3 (7%)    | 10 (24%)  | 10 (24%)  | 10 (24%)  | 33 (79%)      |
| *Pseudorca crassidens*       | 5 (36%)   | 3 (21%)   | 2 (16%)   |           | 10 (71%)      |
| *Stenella coeruleoalba*      | 5 (1.4%)  | 25 (7%)   | 309 (89%) | 339 (97%) |               |
| *Tursiops truncatus*         | 1 (0.5%)  | 29 (13.5%)| 24 (11%)  | 121 (56.5%)| 175 (82%)     |
| *Ziphius cavirostris*        | 3 (7%)    | 10 (26%)  | 21 (54%)  |           | 34 (87%)      |

**Specimens collecting sites**

The collecting sites, including occasional findings, have been ascertained for 837 specimens (= 81% of the total), and these data are summarized in Tab. 23.
Tab. 23 - Ascertained collecting sites. A = Ligurian Sea; B = Tyrrenian Sea and Sardinia; C = Sicilian Seas; D = Ionian Sea; E = Adriatic Sea; F = Black Sea; G = Non Mediterranean Seas.

| Species                        | A  | B  | C  | D  | E  | F  | G  | Tot. |
|--------------------------------|----|----|----|----|----|----|----|------|
| *Eubalaena glacialis*          | 1  |    |    |    |    | 2  | 3  |      |
| *Balaenoptera acutorostrata*   | 3  | 5  |    | 1  |    | 2  | 11 |      |
| *Balaenoptera physalus*        | 10 | 25 | 4  | 2  | 2  | 2  | 45 |      |
| *Delphinus delphis*            | 19 | 28 | 8  | 2  | 9  | 5  | 4  | 75   |
| *Globicephala melas*           | 13 | 12 | 2  |    |    |    | 28 |      |
| *Grampus griseus*              | 22 | 24 | 9  | 3  | 14 |    | 72 |      |
| *Orcinus Orca*                 |    |    |    |    |    |    | 5  | 6    |
| *Pseudorca crassidens*         | 2  | 1  | 5  |    |    |    | 2  | 10   |
| *Stenella coeruleoalba*        | 174| 135| 16 | 2  | 7  | 1  | 335|      |
| *Steno bredanensis*            | 1  | 3  |    |    |    |    | 1  | 5    |
| *Tursiops truncatus*           | 37 | 84 | 8  | 2  | 36 |    | 167|      |
| *Phocoena phocoena*            |    |    |    |    | 4  | 6  | 10 |      |
| *Kogia sima*                   | 1  | 1  |    |    |    |    | 2  |      |
| *Physeter macrocephalus*       | 3  | 11 | 6  | 8  | 5  |    | 33 |      |
| *Mesoplodon europaeus*         | 1  |    |    |    |    |    | 1  |      |
| *Ziphius cavirostris*          | 15 | 12 | 5  | 2  |    |    | 34 |      |
| Total                          | 298| 341| 67 | 14 | 77 | 9  | 31 | 837  |

Tab. 24 - Collecting sites of Mediterranean specimens.

| Sea                          | N. specimens | % |
|------------------------------|--------------|---|
| Ligurian sea                 | 302          | 36|
| Tyrrenian and Sardinia seas  | 340          | 40.5|
| Sicily seas                  | 66           | 8 |
| Ionian sea                   | 14           | 1.7|
| Adriatic sea                 | 77           | 9 |
| Other Mediterranean areas    | 7            | 0.9|
| Black sea                    | 9            | 1 |
| Extramediterranean seas      | 28           | 3 |
Discussion

The data reported in this paper highlight the importance of cetacean collections in Italian museums, as well as their considerable taxonomic representativeness, in particular with regard to the Mediterranean fauna. We have recorded 1033 specimens overall (according to the constraints adopted in this work), housed in 53 institutions and representing 41 species belonging to 9 families (see Tables). Since Cagnolaro’s paper (1996) there has been an increase of more than 250 specimens thanks to the activities of main museums involved, as well as to the addition of 14 collections not considered in that preliminary study.

Only 5 species are present in most institutions: *Delphinus delphis* in 35, *Tursiops truncatus* in 33, *Physeter macrocephalus* in 27, *Balaenoptera physalus* and *Stenella coeruleoalba* in 25. The high occurrence of *D. delphis* is remarkable, and dates to periods prior to the 1960s and 1970s.

Italian cetacean collections are mainly housed in few museums. In fact, 20 institutions hold about 90% and 6 (Genova, Siena, Milano, Firenze, Roma Zoology museum and Calci) have 62% of the specimens. Calci has the highest number of taxa (27), followed by Firenze (25), Genova (15) and Milano (13). Such a bias depends mostly on the history of the museums, their research and education choices and the presence of cetacean researchers. Also, a decisive factor was whether there has been an interest in exotic species, e.g. at the museum of Calci, unique of its kind (Braschi et al., 2007), or whether the collection was the result of contacts with explorers and scientists from distant regions (e.g. Firenze and Genova). The high number of specimens in a limited number of institutions can guarantee their proper arrangement and preservation as well as their availability to researchers.

The gathering of common dolphins strongly decreased since the mid-20th century on, paralleling a strong increase in acquisition of striped dolphins. As mentioned above, there has been an exceptional development in cetacean collections since 1986 in the museums affiliated with CSC. In that period those institutions more than doubled the number of their specimens from the Italian seas.

The prevalent usage of all such material is for scientific research, and complete, disarticulated or partial skeletons, and skulls account for about 73% of the total. The collections mainly include a substantial number of small and medium sized odontocetes acquired by the principal museums as part of the activities promoted by CSC, as well as numerous skulls from previous periods, including quite old ones, that often represent the only specimen preserved. Mounted skeletons are mainly used for exhibition purposes and represent the usual way of preparation, especially with regard to those from earlier periods, but are also useful for research purposes. The mounted skin preparation generally dates from earlier periods and these mounted specimens are present in some institutions only.

In order to correctly evaluate the data presented here, museum geographic position and its resources for recovery stranded carcasses from the nearby coasts must be taken into consideration. This explains why nearly 80% of the material comes from Ligurian, Tyrrenhian and Sardinia Seas, while the remaining marine basins count for 20% only of all of the items. Therefore, the data concerning the seas of origin should be regarded only tentatively as criteria for assessment of the presence of various species in Italian seas. Nevertheless, the data about *Delphinus delphis* and *Stenella coeruleoalba* are remarkable (Cagnolaro et al., 1983; Cagnolaro et al., 1993; Bearzi et al., 2003).
Specimens on exhibit and their educational utility

Many museums in Italy exhibit cetacean skeletons, mounted either with old or modern techniques. Large specimens are often displayed, however, even small and medium sized ones often form part of valuable presentations. Cetaceans eloquently express both evolution and adaptation by the radical transformation their anatomy has undergone, and their role as great creatures of the sea is a huge attraction to the public. All these aspects must be taken into consideration, also with regard to suitable exhibition supports such as captions, computer and interactive options, in order to well document even their behaviour and especially their bioacoustics.

Museums holding cetacean exhibitions are: Calci (Pisa), Milano, Bologna Anatomia Comparata, Comiso, Firenze, Genova, Livorno, Napoli, Pescara, Riccione, Roma (Anatomia Comparata and Zoologia), Siena, Torino, Trieste, Venezia and Verona.

Conclusions

The cetacean collections of Italian museums are of fundamental value for scientific research, especially with regard to the well documented specimens of both old and recent acquisition, now housed and arranged in the principal museums that collaborated within CSC. In addition to the various aspects of traditional research in this field, significant perspectives are now possible through the application of new investigative techniques. The availability of adequately recorded historical material is an essential guarantee of reliability and the Mediterranean Marine Mammals Tissue Bank of the University of Padova is remarkable for its present research support. An area of increasing interest arises from the suitability of this material for research on the Mediterranean fauna with regard to previous and on-going changes, because cetaceans play a significant role in this scenario. Therefore, it is of extreme importance that museums, especially those with large collections, publish catalogues of their cetacean specimens in order to facilitate their availability to the research community.

It should be noted that laws forbidding the killing of marine mammals are effective in Italy since many years. Therefore recovery of carcasses constitutes, together with sightings at sea, the main way to study wild cetaceans.

The eager, confident and informed participation of many colleagues (besides the authors of this contribution) made possible, in some 25 years, the gathering of a good deal of material and data, by far surpassing those from the past.

The institutions mentioned in this paper undertook the conservation of cetacean specimens and made them available to the scientists, also furthering the scientific knowledge of the general public.

We hope that, despite financial difficulties, museums and research institutions can easily continue to fulfil the enormous and exciting task of passing on to future generations the documentation of planet’s biodiversity.

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