

Private Seashells Collection in Istanbul

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Introduction

Seashells have drawn the attention of human beings since the earliest times. The variability of their shapes and the esthetics of their colors have led to them being used for different purposes besides consumption as food. They are used as money, personal adornment, pots & pans, tools like oil lamps, storage containers, blades and scrapers, as a status symbol, as musical instruments, for communication, and as a calcium carbonate source in earlier industries to dye the fabrics to purple color signifying the royalty etc. (Stix *et al.* 1973).

In ancient times, collecting seashells was only for specific uses. It was not until the 4th century BC that the Greek philosopher and natural historian Aristotle began to collect seashells for scientific purposes and has mentioned some mollusks and their shells in his work “*The History of Animals*”. With the discoveries of new

Abstract

Besides National and University collections, private collections are very important for scientists. This paper deals with the seashells collection of the “CAN GEYRAN Seashells Center”. The “CAN GEYRAN Seashells Center” houses more than 10,000 seashells, complete with data, collected by self-collection, trade, exchange or donations over approximately 50 years. The Center has a 450 m² exhibition area where approximately 320 seashells are exhibited along with some handcrafts, objects indicating the relationship between humans and shells. The center has also a library with more than 1800 publications mainly about the seashells of Turkish seas.

Keywords: Seashell, Seashells Center, Natural History Collection, İstanbul

lands, a growing interest in natural objects in the 15th and 16th centuries led to the rich seashell collections of wealthy Europeans (Thomas, I., 2007). Most of these collections are, now, in different natural history museums. The science dealing with seashells is “Malacology”. However, starting from the second half of the 17th century, the term “Conchology” began to be used for the science which exams shells. By then, it has been recognised that the shell cannot be examined without considering the animal. So “Malacology” became the only science which examines all the mollusks with or without shells (Fig. 1)

There are numerous seashells collectors, in Turkey some of whom are recognized throughout the world. In fact, the Hydrobiology Museum (IUSHM) in the Science Faculty at Istanbul University houses a collection by the keen collector İsmet Tümtürk who passed away in 1988. This collection is world famous for its “Pectinidae” species.



Figure 1. A drawer from the family Fascioliariidae

In Turkey, the first book mentioning seashells is “Boğaz ve Adalar Sahillerinin Omurgasız Dip Hayvanları” (The mollusks of the deep waters of the Bosphorous and the Prince Islands) written by Prof. Muzaffer Demir (Demir, 1952). A recent study published by Öztürk *et al.* (2014) states that, in Turkish seas, there are 1057 species of mollusks bearing a seashell. However, this number increases every year because of new discoveries and Lessepsian species.

The aim of this paper is to highlight the existence of a seashell collection and give some preliminary information about its contents for scientists or enthusiasts who are carrying out study in this field.

Material and Methods

A seashell is a mollusk which lives in seas or brackish waters and bears an inner or outer shell. In the nomenclature of seashells, Linnaeus’s binominal system is used like the other living creatures. The data regarding the shells includes the seashell’s name, author’s name, locality, sampling date and information about the habitat. The data (species and author names) is checked periodically for update using WORMS (World Register of Marine Species).



Figure 2. The outside view of the Center

There are six main classes of seashells: Bivalvia, Cephalopoda, Gastropoda, Monoplacophora, Polyplacophora, Scaphopoda. The collection contains seashells from all the classes except *Monoplacophora*. This class contains about 25 species which live in deep water and are rarely seen in personal collections. All seashell materials can be found in the “CAN GEYRAN Seashells Center” (Figs. 2-3).



Figure 3. An inner view from the Center

Results

In the Center the specimens are arranged from the most numerous classes to the less numerous ones. In a class, they are arranged in subclasses, superfamilies and families. The results are given in this paper mainly on superfamilies, if they exist, otherwise on families.

Class Gastropoda

This single shelled class is the largest one known generally as sea snails. The name comes from their movement. They move by sliding with a ventral muscle. This class includes about 70,000 living species. (Fig. 4)



Figure 4. *Aptyxis syracusana* (Linnaeus, 1758)
A Gastropoda sample from the “FASCIOLARIIDAE” family

They may be carnivorous or herbivorous. Some of the carnivorous species are poisonous and attacks on humans may require medical intervention (Fig. 5)

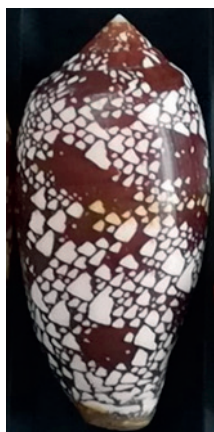


Figure 5. *Conus aulicus* Linnaeus, 1758
A Gastropoda sample from the “CONIDAE” family

Subclass Caenogastropoda

Superfamily Calyptraeidea Lamarck, 1809

- Capuloidea J. Fleming, 1822
- Cingulopsoidea Fretter & Patil, 1958
- Cypraeoidea Rafinesque, 1815
- Ficoidea Meek, 1864
- Littorinoidea Children, 1834
- Naticoidea Guilding, 1834
- Pterotracheoidea Rafinesque, 1814
- Rissooidea Gray, 1847
- Stromboidea Rafinesque, 1815
- Tonnoidea Suter, 1913
- Truncatelloidea Gray, 1840
- Vermetoidea Rafinesque, 1815
- Xenophoroidea Troschel, 1852 (1840)
- Buccinoidea Rafinesque, 1815
- Conoidea J. Fleming, 1822
- Mitroidea Swainson, 1831
- Muricoidea Rafinesque, 1815
- Olivoidea Latreille, 1825
- Turbinelloidea Rafinesque, 1815
- Volutoidea Rafinesque, 1815

Subclass Heterobranchia

Superfamily Architectonicoidea Gray, 1850

- Cimoidea Warén, 1993
- Mathildoidea Dall, 1889
- Murchisonelloidea T. L. Casey, 1904
- Omalogyroidea G.O. Sars, 1878
- Acteonoidea d’Orbigny, 1842
- Rissoelloidea Gray, 1850
- Ringiculoidea Philippi, 1853
- Akerioidea Mazzarelli, 1891
- Aplysioidea Lamarck, 1809

- Bulloidea Gray, 1827
- Cylichnoidea H. Adams & A. Adams, 1854
- Haminoeidea Pilsbry, 1895
- Philinoidea Gray, 1850 (1815)
- Cavolinioidea Gray, 1850 (1815)
- Siphonarioidea Gray, 1827
- Umbraculoidea Dall, 1889 (1827)

Subclass Neritimorpha

Superfamily Neritoidea Rafinesque, 1815

Subclass Patellogastropoda

Superfamily Lottioidea Gray, 1840

Patelloidea Rafinesque, 1815

Subclass Vetigastropoda

Superfamily Fissurelloidea J. Fleming, 1822

- Haliotoidea Rafinesque, 1815
- Lepetelloidea Dall, 1882
- Lepetodrioloidea McLean, 1988
- Scissurelloidea Gray, 1847
- Pleurotomarioidea Swainson, 1840
- Seguenzioidea Verrill, 1884
- Trochoidea Rafinesque, 1815

Class Bivalvia

The second largest class, which was formerly called “Pelecypoda” or “Lamellibranchia” consists of the seashells having two valves mostly symmetrical and connected by a hinge (Fig. 6).



Figure 6. *Laternula anatina* (Linnaeus, 1758)
A Bivalvia sample from the LATERNULIDAE family

Most of them are sedentary filter feeders. They have mostly been consumed as a food since early times (Fig. 7). They are also the main sources of the pearls and the mother-of-pearls.



Figure 7. *Pecten maximus* (Linnaeus, 1758)
A Bivalvia sample from the PECTINIDAE family

Subclass Heterodonta

Superfamily Carditoidea Férussac, 1822

- Crassatelloidea Férussac, 1822
- Cuspidarioidea Dall, 1886
- Pandoroidea Rafinesque, 1815
- Poromyoidea Dall, 1886
- Thracioidea Stoliczka, 1870
- Hiatelloidea J.E. Gray, 1824
- Solenoidea Lamarck, 1809
- Cardioidea Lamarck, 1809
- Tellinoidea Blainville, 1814
- Galeommatoidea J.E. Gray, 1840
- Gastrochaenoidea Gray, 1840
- Lucinoidea J. Fleming, 1828
- Thyasiroidea Dall, 1900
- Dreissenoidea Gray, 1840
- Myoidea Lamarck, 1809
- Pholadoidea Lamarck, 1809
- Arcticoidea Newton, 1891
- Chamoidea Lamarck, 1809
- Glossoidae J.E. Gray, 1847
- Mactroidea Lamarck, 1809
- Ungulinoidea Gray, 1854
- Veneroidea Rafinesque, 1815

Subclass Protobranchia

Superfamily Nuculanoidea H. Adams & A. Adams, 1858

- Nuculoidea Gray, 1824

Subclass Pteriomorpha

Superfamily Arcoidea Lamarck, 1809

- Limoidea Rafinesque, 1815
- Mytiloidea Rafinesque, 1815
- Ostreoidea Rafinesque, 1815
- Pinnoidea Leach, 1819
- Pterioidea Gray, 1847 (1820)

Anomioidea Rafinesque, 1815

Pectinoidea Rafinesque, 1815

Class Scaphopoda

The seashells, in this class, are named as “Tusk Shells” because of the resemblance of the shell to an elephant’s tusk. It is a tapered, tubular, slightly curved shell, open at both ends (Fig. 8).

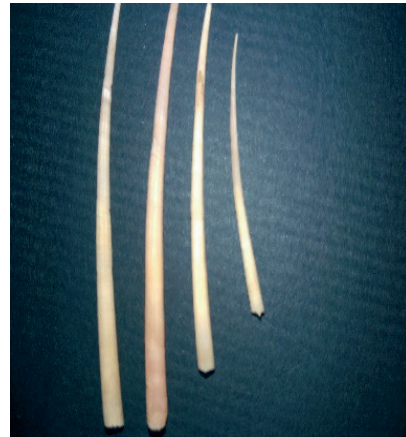


Figure 8. *Antalis dentalis* (Linnaeus, 1758)
A Scaphopoda sample from the DENTALIIDAE family

They are marine dwellers. They have been used widely for decorative purposes.

Family Dentaliidae Children, 1834

- Fustiariidae Steiner, 1991
- Gadilidae Stoliczka, 1868
- Entalinidae Chistikov, 1979

Class Polyplacophora

Otherwise named “Chitons”, these are rock-dwelling marine mollusks. They have oval shaped bodies that are flattened from back to front. Eight overlapping and separate plates form the shell (Fig. 9).



Figure 9. *Chiton olivaceus* Spengler, 1797
A Polyplacophora sample from the “CHITONIDAE” family

They live mostly in shallow water, under rocks and other shells. They feed on small algae and other tiny organisms.

Subclass Neoloricata

Superfamily Cryptoplacoidea H. Adams & A. Adams, 1858

Superfamily Mopaloidea Dall, 1889

Superfamily Chitonoidea Rafinesque, 1815

Family Hanleyidae Bergenhayn, 1955

Family Leptochitonidae Dall, 1889

Class Cephalopoda

This class includes the Chambered Nautilus, cuttlefish and squid species. Most of them have inner backbones (Fig. 10).



Figure 10. *Sepia officinalis* Linnaeus, 1758
A Cephalopoda backbone sample from the “SEPIIDAE” family

They are carnivorous. Most cephalopods are small, and they form a major component of the food sources of larger fish and whales. Both abyssal & shallow water forms are found.

The collection has samples of species belonging to the following Families:

Subclass Coleoidea

Family Loliginidae Lesueur, 1821

Family Ommastrephidae Steenstrup, 1857

Family Sepiidae Kieferstein, 1866

Family Spirulidae Owen, 1836

Subclass Nautiloidea

Family Nautilidae Blainville, 1825

Discussion

To turn a hobby into a serious collection, one should spend some time, effort and money. There is a market for collectible seashells all over the world. There are also some auctions which are interested in shells. In these

markets, sometimes the price of a seashell may reach \$ 20.000 depending on its rarity.

I always, prefer to get ten seashells worth \$10 each instead of having one \$100 seashell. However, the most precious seashell of this collection is a newly described seashell by the friends of the author of this study and named after the author’s beloved son Can Geyran: *Turbonilla cangeyrani* Ovalis & Mifsud, 2017 (Ovalis, 2017) (Fig. 11).

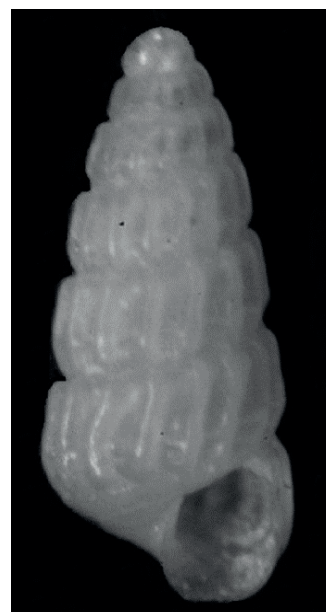


Figure 11. *Turbonilla cangeyrani* Ovalis & Mifsud, 2017

In general, exchange is the most frequently used method along with self-collection to enlarge the collections.

Seashell collections, like other Natural History collection are subject to some restrictions. When collecting seashells, one should not forget that they are living creatures. Therefore, we have to obey some ethical rules during collection.

Rules regarding this can be seen on the collection site <http://www.cangshells.com/epublication1-ethical.html>.

It is generally accepted that to protect animals we have to know them. Therefore, this center with its collection is helping to raise awareness of marine life. Moreover, these kinds of personal Natural History collections have been the basis of major Natural History Museums for around three hundred years. Thus, this collection may contribute to a Natural History Museum in Istanbul.

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