



## Aquariology: The mysteries of the submersed universe

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**Abstract.** This paper is a minireview on aquariology, the mysteries of the submersed universe: history, the present state and the future perspectives. Ornamental fishery or aquariology is the science dealing with the study of an environment isolated from the natural environment it originates from, incorporated in an aquarium. The main animals in an aquarium are the exotic fish which were initially captured from their wild environment, but after consecutive accommodations and reproduction, many species are traded, having their origin still in the aquarium. Besides fish, the aquarium may accommodate mollusks and other aquatic invertebrates, which help maintaining the balance of the aquarium by consuming food scraps and algae. Aquariology is a branch of aquaculture which may be practiced in a protected environment, dealing with description, growth, reproduction, and exploitation of some fish species and compatible plants. The psychiatrists study for a long time the profound motivations impelling people to maintain, look after, and attend to aquariology. The beneficial effect of aquariums in the therapy of psychological conditions of the sufferings has been scientifically proven, which led to installation of aquariums in some medical clinics, orphanages or retirement homes. Aquariology is an ancient occupation and its story does not end here. The future of aquariology holds many wonders for which life must be lived.

**Key Words:** aquarium, aquariology, health, well-being, education, environment.

**Introduction.** Improvement of cultivated plants and domestic animals for consumption had a significant social impact along the history and evolution of man, giving him more abundant food, better quality food, warm clothing and an easier life (Petrescu-Mag 2007). Unlike the above, the improvement of dog, horse, and cat breeds, ornamental fish varieties, flowers were meant to make a man's life more beautiful and it also had a significant social impact (Petrescu-Mag 2007). Therefore, the opinion that fish for consumption could have economic and social value and impact, while the ornamental fish would lack these values is very wrong.

Humans were interested in keeping ornamental fish in their homes from ancient times (Kaszony 1970). The history of keeping fish for either food or as pets goes back at least 4,000 years; the Chinese have a long history of keeping fish inside the home in containers (<http://www.ratemyfishtank.com>). In present times the aquarium (both fresh and saltwater) is a popular and educational activity for humans of all ages (Petrescu-Mag et al 2013).

This paper is a minireview on aquariology, the mysteries of the submersed universe.

**What is Aquariology.** Ornamental fishery or aquariology is the science dealing with the study of an environment isolated from the natural environment it originates from, incorporated in an aquarium. The main animals in an aquarium are the exotic fish which were initially captured from their wild environment, but after consecutive accommodations and reproduction, many species are traded, having their origin still in

the aquarium. Besides fish, the aquarium may accommodate mollusks and other aquatic invertebrates, which help maintaining the balance of the aquarium by consuming food scraps and algae. Aquariology is a branch of aquaculture which may be practiced in a protected environment, dealing with description, growth, reproduction, and exploitation of some fish species and compatible plants (Păsărin 2001).

Aquariology is a pleasant and relaxing occupation for many of us, but for most to afford this hobby, some had to change their simple hobby into profession and become animal breeders, aquarium plant producers, aquarium devices and accessories producers, retailers, zoo caretakers, veterinarian or researchers.

**The History of this Pleasant and Noble Occupation.** The discoveries made over the time show the fact that man's passion for beauty and nature dates back to ancient times, as man himself is a component of the natural landscape. While some cultivated plants or domestication of animals have served as food sources or have made his work and, at the same time, his life easier, others gladdened his heart, enchanted his eyes with their colors and his ears with their song or befuddled him with their perfume. The primitive man painted the walls of the caves (the so-called parietal art) with plants and animals, and some of the drawn animals were fish. Care of animals or growing of plants in pots confirms that nature has fascinated man since the beginnings. Besides the cultivation of flowers and care for birds in cages, man has also bred ornamental fish to watch them and embellish his house (Petrescu-Mag 2007).

Aquariology is not a new occupation. It can be traced back to the earliest times of human history, which was proven by the archaeological discoveries in countries such as Greece, Egypt, China, Mexico, Italy, and many others (Petrescu-Mag 2007).

In antiquity, 5,000-6,000 years ago, the Egyptians had in their homes tanks where they bred ornamental fish species still found today in our aquariums, such as: *Haplochromis* spp., *Chromis nilotica*, *Bagrus schilbeides*, *Mormyrus* spp. and others. Paintings of such fish species living in the Nile Basin, were found on some objects, on the walls of the pyramids, and in the rock carved tanks (Kászoni 1970; Păsărin 2001; Bud 2002). In ancient Egypt, the pair of fish was considered to be a holy image, symbolizing the life- and wealth-bringing waters of the Nile.

In ancient Greece, Aristotle, who was unanimously recognized as the father of ichthyology, approx. 300 years B.C.E., knew and described over 115 species of fish, many of these playing an ornamental role (Păsărin 2001). In the Greek antique mythology, the cortege of fish surrounded Aphrodite for better or for worse. The fish is also a traditional element in the mosaic religion, accompanying the holidays of the year and the holiness of the Shabbat. It also has moral and symbolic meanings in the Christian sense, thus becoming emblematic. As a sign of the zodiac, the two fish swimming in opposite directions express the duality and balance of the contraries, leaving room also for philosophical interpretations.

The ancient Romans were also very passionate about the breeding and watching of fish. There are many remains of such activities, some dating back to the era before Christ, and others to the era after Christ (Figure 1).

Archeologists have found the remnants of pools and vivaria on the Italian territory, which proved that, similar to other ancient peoples, the Romans too used to breed animals for their beauty (Petrescu-Mag 2007). Near Pompeii, surrounding the palaces, the remnants of several ornamental pools were found, that we can consider the predecessors of the present aquarium (Bud 2002; Bud et al 2005). Many works of the great Roman writers and poets make reference to the beautifully designed pools in the courtyards of the imperial palaces (Petrescu-Mag 2007).



Fig.1. Roman mosaic discovered in Israel, picturing fish (approx. 300 C.E.)  
(source: <http://acum.tv/articol/54737/>).

In the New World, the Aztecs were passionate about the breeding and watching of animals in captivity. During the 16<sup>th</sup> century, when the Spaniards have invaded Mexico, they have found at the court of the Aztec emperor Montezuma a beautifully designed zoological garden, where there were also tanks for ornamental fish and fish for consumption (Păsărin 2001; Bud 2002). These were captured from the waters of Mexico. In the palace there were certain porcelain spherical bowls where the ornamental fish were kept. The archeologist Schierig (cited by Kászoni 1970) believed that these tanks were designed long before Montezuma's rule.

In many Asian cultures the fish was sacred due to its beauty, size, and longevity. The Chinese word for fish, *yu*, also means "large fortune" which explains the material gifts and the prosperity wishes addressed to the newly married couples. Fish signify fertility and wealth for the Indians also, as fish breed very fast.

In ancient China, the breeding of fish in recipients was very common. Many Chinese legends talk about the story of the "golden fish" (Păsărin 2001; Bud 2002). The goldfish of various varieties and rare beauty were created by the Chinese by selection over thousands of years. In the ancient China, the cult of breeding the goldfish came to a climax in the province of Che-Kiang, where, in the 6<sup>th</sup> century the rich people used to breed these fish in beautifully colored porcelain spherical bowls (Kászoni 1970; Bud 2002; Bud et al 2005). In the 9<sup>th</sup> century, fish tanks began to be located also in temples, as in some provinces in China, these were assigned supernatural qualities, and the goldfish were considered "sacred animals." Several porcelain manufacturing workshops were founded by Emperor Hung Vu in King Te-Tseu to meet the increasing demands of porcelain bowls for fish. This is indicated in a document dating back to the year 1369. According to an old chronicle, the Emperor Kia-Tsing (1522-1566) has ordered to such a workshop to produce for the temples 300 porcelain bowls inwrought with lotus flowers and dragons. The guests of these bowls would be of course the goldfish (Kászoni 1970; Bud 2002; Bud et al 2005).

In the 13<sup>th</sup> century, the porcelain bowl for fish had become one of the important items of the Chinese export, bought especially by the European royal courts very fond of luxury. Together with the porcelain bowls, the commercial ships brought many goldfish to Europe. This passion for breeding goldfish expanded mainly in Portugal, Spain, and

France, due to the advanced commercial fleets of these countries which brought them from the south-eastern Asia, where the indigenous people were exporting them. Thus, in 1750, the Franco-Indian Society offered Madame de Pompadour, from the French Royal Court, goldfish brought from the Orient. At that time, also, the tsar or Russia, Alexei Mihailovici, received a few goldfish from the Royal Court of Paris. Besides China, the Europeans have discovered other ornamental fish (goldfish and Siamese fighting fish) supplying countries, such as: India, Thailand, Siam, Djawa (Jawa) islands, Kalimantan (Borneo), Japan, etc., (Kászoni 1970; Bud 2002; Bud et al 2005). The fish were kept either in tanks or in spherical bowls similar to the Chinese ones.

The life of fish in these tanks was a real ordeal. The oxygen in the water would exhaust quickly, forcing the fish to rise to the surface, where they had to swim in circles. In these dark bowls it was impossible to grow plants for the natural oxygenation of water and even if sufficient lighting would be provided during the day, the plants themselves would consume the oxygen at night. In addition, the contact surface between the two environments, relatively low compared to the volume of the bowl, would lead to hypoxia. The role and methods of water stirring were not yet known. The only solution was the permanent replacement of water. Often, hypoxia would eventually result in the death of fish by asphyxia (Petrescu-Mag 2007).

Much time would pass until the aquarium was arranged according to knowledge of hydrochemistry, hydrobiology, physiology, ecology, and physics, whose development enabled the maintenance of the correct balance between the water volume, plants, and fish. Then it was found that caring, feeding and breeding should not be made randomly, but according to the living environment conditions these species originated from (Bud 2002).

An important step in the evolution of aquariology was the development of the glass industry (around 1600) and the emergence of glass bowls, which has revolutionized this passion (Bud 2002; Bud et al 2005). Hence, due to the transparency of glass bowls, it was possible to conduct studies and observations that would considerably enhance the knowledge on aquariology.

Swammerdam, Leeuwenhoek, Réaumur, Schäfer and Trembley and many other scientists, especially naturalists, may be considered the predecessors of aquariology. They conducted experiments using aquatic plants and various small animals to study how they developed when they were kept together in the same tank. The rather opaque walls of the bowls, as well as the few data at that time, did not enable the knowledge of relationships between aquatic plants and animals kept in tanks. In the 18<sup>th</sup> century, Priestley and Scheele isolated oxygen and later Spallanzani, Humboldt and Provençal have studied the respiration process of aquatic plants and animals (Bud 2002; Bud et al 2005). They concluded that, during the vital process, the organisms consumed oxygen and produced carbon dioxide. Because the law of gas equilibrium in the water was not yet known, the animals used in experiments died quickly. At the beginning of the 19<sup>th</sup> century, the physicist Ingenhouz took a step forward, discovering that during the feeding process all plants produced oxygen by means of sunlight and fixed carbon dioxide that they used in cellular growth (Petrescu-Mag 2007).

The close connection between the aquatic plants and fish was discovered for the first time in 1841 by S. H. Ward, who kept aquatic plants and freshwater fish together in a tank for a long time. He noticed that the water in the tank remained clean for a longer time (Păsărin 2001; Bud 2002; Bud et al 2005).

In 1842, Johnston proved the existence of gas equilibrium in the water, using fish and aquatic plants in its experiments (Petrescu-Mag 2007). Its countryman, the chemist Warrington, has set up in 1850 several tanks populated with fish and aquatic plants. He proved in a practical manner the necessity of removing organic wastes on the bottom of the tank which would alter water quality (Kászoni 1970; Bud 2002; Bud et al 2005).

In 1850, Ph. H. Gosse designed the first aquarium with marine fish within the Zoological Garden in London. At that time, he also introduced the term *aquarium*. This modest *aquarium* founded by Gosse is a predecessor of the aquarium we know today (Bud 2002; Bud et al 2005).

The German Rossmässler was impressed by aquariums expositions, by the permanent aquarium in the Zoological Garden and by the trend of installing aquariums in houses in England. He believed that the aquarium could be a means of mass enlightenment and initiated an awareness campaign in the German press. He wrote many articles about the aquarium, among which the most notable was the one published in 1856 in the *Gartenlaube* magazine entitled *Der See im Glasse* namely "a lake in a glass tank." The article contained principles which are still the foundation of the scientific development of the aquarium (Kászoni 1970). In this article, the author developed the idea that the aquarium was an embellishment of the house and the most efficient way of entertainment and study, at the same time, an opinion expressed today by all aquarium hobbyists. The year this article was published (1856) is considered the birth year of the modern aquariology (Kászoni 1970). Aquariology has developed and spread very fast in the direction indicated by Rossmässler in other countries in Europe. A major contribution to this dissemination and distribution was made by the book entitled *Das Süßwasser Aquarium* (The Freshwater Aquarium), which was re-edited four times in a short period (Kászoni 1970).

Similar to England or Germany, France also started to pay special attention to the breeding of ornamental fish. In 1867, a French military ship conveyed to Bordeaux several species of tropical fish. Some of the fish got to Carbonnier's house, a great admirer of ornamental fish. The beginning of aquariology in France is connected to his name. He tried to raise these fish and breed them in his own aquariums. The fish brought from the Far East created a stir in Paris at that time, which determined many Parisians to install aquariums in their homes. A stand of ornamental fish from tropical waters was also presented at the international exposition in Paris in 1864. The exposition made a stir in several western countries (Mag-Mureşan 2004).

In 1869, the well-known zoologist A. Brehm organized the aquarium in Berlin (Kászoni 1970). Aquariums are built in some research institutes focused on ichthyology or hydrobiology in several countries. Thus, the Marine Aquarium of the Sevastopol Marine Biological Research Station was built in 1872. In Russia, N. S. Sografi propagandized intensely the expansion of aquariology by organizing the first aquarium hobbyists club in 1870. In 1889, N. F. Zolotniţkii edited the book entitled *Akvarium liubitelia* (The Amateur's Aquarium), which was sold out immediately after its publication (Kászoni 1970).

After 1900, Ö. Winge wrote a series of works based on the researches conducted within the Carlsberg laboratory on guppy fish (*Poecilia reticulata*) (Winge 1922-1937). On this occasion, many mechanisms referring to sex-linked inheritance were explained (Mag-Mureşan 2004; Mag & Bud 2005). His studies were continued by Ditlevsen, Haskins & Haskins, Nybelin, Blacher, Goodrich, Schröder, Dzwillo, Natali & Natali, Brooks, Endler, Houde, Fernando, Phang and others (Lindholm & Breden 2002).

Aquariology has undergone wide-ranging development during the last decade of the 19<sup>th</sup> century, when the development of navigation facilitated the import of fish from the Far East, Africa, and the Amazon Basin. The breeding of these fish has become very popular, especially in London, Hamburg, Bremen, Helgoland, Liege, Bordeaux, Amsterdam, port cities of the Western Europe. At the beginning of the 20<sup>th</sup> century, there were hardly any houses in these cities which did not have an aquarium. Soon, aquariology has spread to other cities in Europe, such as Vienna, Leipzig, Dresda, as well as many cities in the South-Eastern Europe. In the inter-war years, aquariums are set up in zoological gardens and public parks across Europe, but also other continents. During the same period, many awareness expositions regarding the ornamental fish were organized, more and more books and journals were published. Associations were founded, and after the Second World War these gathered under the World Federation of Aquarists, headquartered in Holland. Since 1955 the Federation has been editing its own journal entitled *The World Aquarists* (Bud 2002; Bud et al 2005).

The public aquariums today are real museums of living exhibits, where the artificial living environment is more and more similar to the natural biotope. Such examples are the Oceanopolis Centre in Brest, the Boulogne-sur-Mer National Marine

Centre, the Aquarium of the Zoology Museum in Nancy, the La Rochelle Aquarium, the Aquarium in Tourain, the Tropical Aquarium of Tours, Aquarium de Barcelona, etc.

Everyday aquariology is gaining new fans on other continents, too. Some of the most interesting and most beautiful aquariums in North America are those in Tennessee and Atlanta, with thousands of visitors every year (Bud 2002; Bud et al 2005).

Nowadays, the aquarium is not only a glass bowl where we breed a few colored fish, but has become a special universe, a universe in miniature, subjected to exact and well-known natural laws, where all the living beings interact and cohabit. The parameters of this "micro-universe" are fully controllable today, capable of ensuring conditions as similar as possible to the natural biotope (Petrescu-Mag 2007).

Aquariology, by its complexity, has contributed to the development of scientific research in the aquatic field, so that today, various scientific branches are highly applicable, of which: biology (genetics, microbiology, physiology, ethology, biochemistry, cellular and molecular biology, hydrobiology), ecology, reproduction, nutrition, improvement, genetic engineering, architecture, etc. Here are some specialty journals or magazines: *Aquarium - Bornheim (Germany)*, *Aquarium - Hilversum (Holland)*, *Aquarium - Nova Iguacu (Brazil)*, *Aquariumwereld (Belgium)*, *AAFL Bioflux (Romania)*, *Poeciliid Research (Romania)*.

**Aquariology as a Hobby.** Ornamental fishery or aquariology represents one of the increasing preoccupations of more and more amateurs, which, due to the technical progress and international trade, gains and allures thousands and thousands of fans.

The united efforts of aquariophiles, researchers and traders, promise an increasing interest for this passionate hobby in the not so distant future.

The aquariums, be they freshwater or saltwater, are a part of nature, a living and fascinating micro-universe exposed to our eyes, which transpose us to a dreamy world of poetry and fairytales. "They offer us revealing sequences from the secrets of a living world, which otherwise remain unknown, and we would be much poorer" (Bud 2002). An aesthetically and skillfully set up aquarium represents a balanced corner of life, where many other aquatic beings can be kept, starting with the small, unicellular ones, and ending with vertebrates.

Aquariology, this relaxing and beautiful activity "... provides us a pleasant and useful way of spending the leisure time, captivates and incites us, relaxing us at the same time and offering us memorable moments in the fascinating universe of the aquatic components" (Bud 2002). The diversity of beings in the underwater environment, which can only be caressed with the eye, has triggered the curiosity of man who devoted passionately to studying it and deciphering its secrets so that today there are millions of amateurs passionate about this aquatic miniature universe and by this occupation.

"Being the owner of an aquarium is not a temporary game, but it implies accepting responsibilities regarding the life and activity in this living micro-universe, directed by fundamental bioecological principles, its good functioning, and the best interest of our cohabitants." Thus "a serious aquarist will never be satisfied solely with maintaining a collection of valuable fish, but will be bound, even without realizing it, to remember some knowledge acquired throughout one's life, to fill the knowledge gaps with the new findings in biology, hydrology, biochemistry, biogeography, physics, genetics, etc. and understand the biological laws governing nature" (Bud 1996).

Aquariology is highly beneficial to children also. Besides the satisfaction this wonderful underwater world offers, "... it also develops in children the chromatics, sharpness of observations, responsibility, order, judgment and thought, curiosity and passion. Also, it makes children get informed in order to increase the possibilities to permanently create new natural biotopes, as relaxing as possible, in this minuscule aquatic universe" (Bud 1996).

Besides its ornamental role, the aquarium contributes also to fighting against breaking the connection with nature; it develops the taste for nature and offers the possibility to gain new notions about the plant and animal world, as well as about the ecological relations governing nature.

The psychiatrists study for a long time the profound motivations impelling people to maintain, look after, and attend to aquariology. The beneficial effect of aquariums in the therapy of psychological conditions of the sufferings has been scientifically proven, which led to installation of aquariums in some medical clinics, orphanages or retirement homes (Petrescu-Mag 2007).

New architectural ideas generated extremely relaxing interior designs, including aquariums in offices, walls, ceilings or even in bed structure (see Figs 2-3).



Fig.2. Aquarium bed (available at: <http://www.thisiswhyimbroke.com/aquarium-bed>).

"Now, when the urban and industrial "desert", the concrete, iron and asphalt mass, provide man with a decreasing biological quality of life, which leads to stress, agitation, sound or biological pollution, we strongly recommend aquariology. A few minutes spent in the presence of this corner of nature can give man living in isolation, a feeling of intimacy, nature-bonding, relaxation and psychological well-being" (Bud 1996; Bud et al 2005).



Fig.3. An Escape into the Reverse Aquarium – Poseidon Undersea Resort (at: <http://www.reefland.com/2014/01/21/an-escape-into-the-reverse-aquarium-poseidon-undersea-resort/> ).

**World's Large Public Aquariums.** Today, the world's public aquariums are spread all over the globe, many of these being true museums and aquatic research centers. These contain several sections and compartments, set up by geographical areas, by biotopes, etc. Here are some of the world's most important aquariums (taken from: <http://www.ifocas.fsworld.co.uk/>, as well as from personal sources):

- *Aquarium de Barcelona* (Spain)
- *Aksarben Aquarium and Nature Center*
- *Aquarium of the Americas* (New Orleans, Louisiana)
- *Belle Isle Aquarium* (Detroit, SUA)
- *Clearwater Marine Science Center Aquarium* (Pinellas, Florida)
- *Cold Spring Harbor Fish Hatchery & Aquarium* (New-York)
- *Dallas Zoo* (SUA)
- *Deep-Sea World* (Edinburgh, Scotland, with more than 400,000 visitors a year)
- *Division of Fishes*, (Smithsonian Institute, Washington)
- *Enoshima Aquarium* (Japan)
- *Fenit Sea World* (Kerry, Ireland)
- *Florida Aquarium* (USA)
- *Great Barrier Reef Aquarium* (Townsville)
- *Gulf of Maine Aquarium* (Maine, Portland)
- *Hudson River Aquarium* (USA)
- *John G. Sheed Aquarium* (Chicago, Illinois)
- *Marine Science Center* (Oregon)
- *Maritime Aquarium at Norwalk*
- *Monterey Bay Aquarium*
- *National Aquarium in Baltimore*



- *New England Aquarium* (Boston)
- *New Jersey Aquarium*
- *North Carolina Aquarium on Roanoke Island*
- *Oregon Coast Aquarium*
- *Osaka Aquarium*
- *Port of Nagoya Public Aquarium, Nagoya, Japan*
- *St. Lawrence Aquarium*
- *San Sebastian Aquarium*
- *Scripps Institute of Oceanography, Stephen Birch Aquarium*
- *Sea World* (Gold Coast, Australia)
- *Seattle Aquarium*
- *The Smithsonian Institute, Museum of Natural History*
- *Sonoran Sea Aquarium* (Tucson, Arizona)
- *South Carolina Aquarium*
- *Steinhart Aquarium* (California)
- *Stephen Birch Aquarium-Museum* (San Diego)
- *Tennessee Aquarium*
- *Toba Aquarium* (Toba, Japan)
- *Ubatuba Aquarium* (Brazil)
- *Vancouver Aquarium* (Stanley Park, Vancouver)
- *Veracruz Aquarium* (Spain)
- *Georgia Aquarium*
- *Waikiki Aquarium* (Honolulu)
- *Poseidon Undersea Resorts* (Fiji).

One of the most awaited aquariums of the world, which has already been added amongst the most amazing aquariums, will be soon open for visitors. Poseidon Undersea Resorts was a proposed chain of underwater five-star resorts. The first is to be located on a private island in Fiji. The project is to be the world's first permanent one-atmosphere seafloor structure. The good news is that they will soon be open for visitors to marvel while lying on the inside of an aquarium (<http://www.reefland.com/>).

When you are surrounded on all sides with water, corals, and invertebrates, all you could think of is being undersea on a submarine but Poseidon Undersea Resort is actually a fully accommodated resort with all the modern amenities amid the most natural location. It is located on a privately owned 225-acre (0.91 km<sup>2</sup>) South Pacific Island located in northeastern Fiji. The resort is to feature twenty-two 550-square-foot (51 m<sup>2</sup>) guest rooms, an underwater restaurant and bar, a library, conference room, wedding chapel, spa and a 1,200-square-foot (110 m<sup>2</sup>) luxury suite. Reservations at the resort are known to be priced at \$30,000 per couple per week (<http://www.reefland.com/>) (see Fig.4).

**Garden Ponds and Natural Aquariums.** Garden ponds are known for a long time and they provide comfort both to the owner and to the guests in the pond. The disadvantage of this type of aquarium is that the physicochemical and biological parameters of the pond are more difficult to control. The most frequently met species in ponds are the improved ornamental cyprinid varieties (Bud 2002; Bud et al 2005). Considering the wide range of colors of the ornamental carp (*Cyprinus carpio* var. koi) and ornamental goldfish (*Carassius auratus auratus*) and adding that they can spend the winter outside, under ice, their popularity among the amateurs of the garden ponds should not surprise us.

Special attention is given at present to the development of public aquariums in natural basins. We cannot omit mentioning here the Red Sea which, in itself, is an immense natural aquarium. The visitors of this aquarium are properly equipped, similar to divers, before entering the wonderful exotic landscape of the coral colonies (Fig.5).

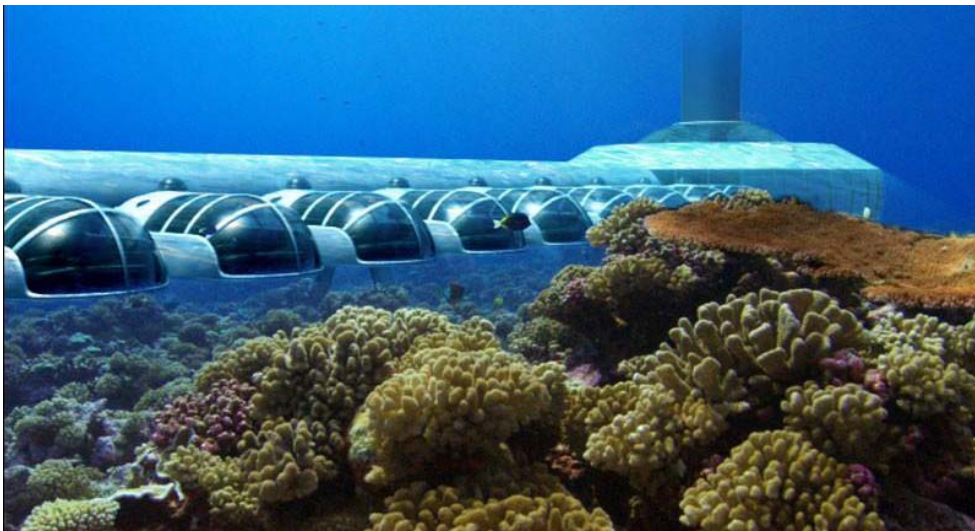


Fig.4. Poseidon Undersea Resort (from: <http://www.reefland.com>).



Fig.5. Images from the Red Sea ([www.deeplens.com/gallery/page\\_01.htm](http://www.deeplens.com/gallery/page_01.htm)).

**Conclusion.** Aquariology is an ancient occupation and its story does not end here. The future of aquariology holds many wonders for which life must be lived.

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