



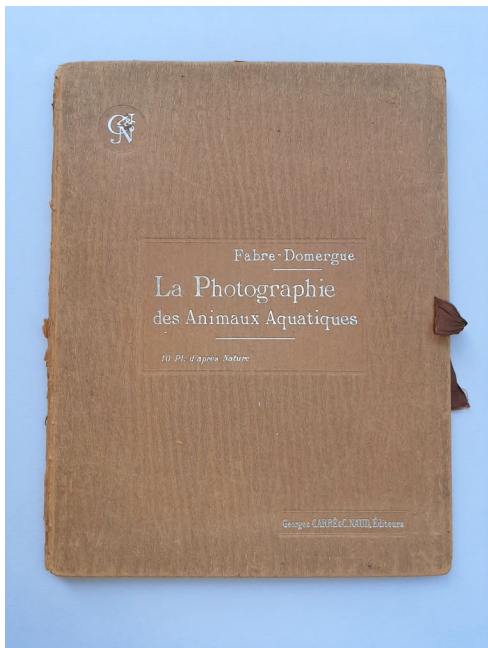
# Antique Portraits of Aquarium Life from the Zoological Station at Naples

By Emiliano Spada

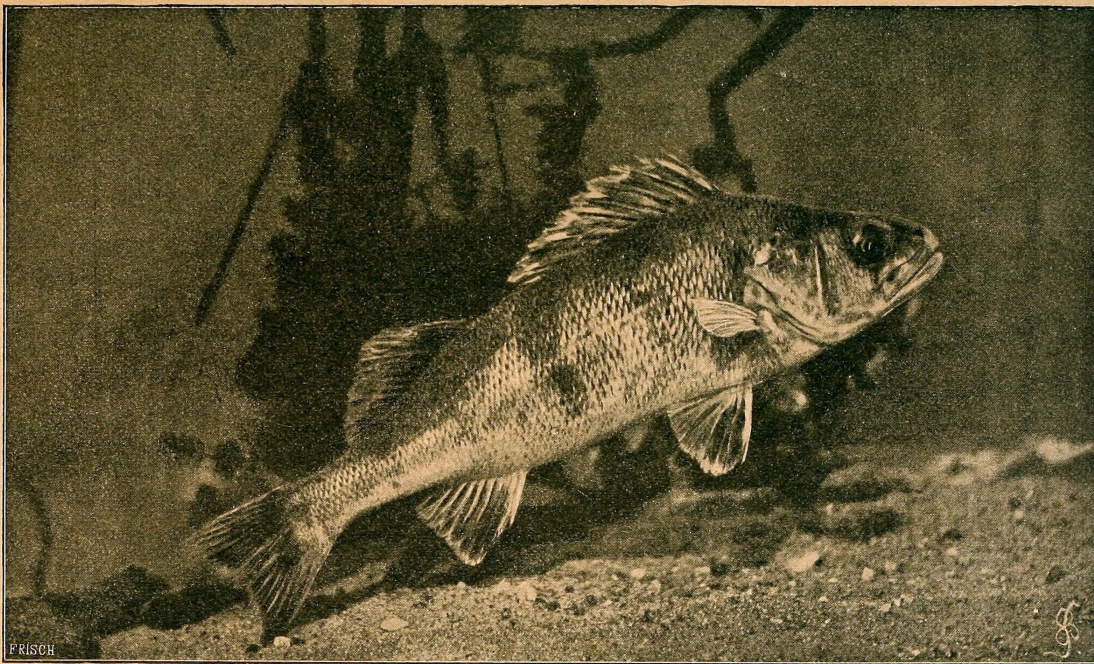
The first photograph of a living fish (a pike) was taken in 1853, at the Fish House of Regent's Park Zoological Gardens (London), by Don Juan Carlos María Isidro de Borbón y Braganza, Count of Montizon (1822-1887). Photography, however, was still in its infancy, and it would be necessary to wait until the late Victorian era to see the results of new and notable aquarium photography. In the meantime, our hobby was visually told by the authors of the time mostly through black-and-white and color illustrations.

## Early efforts in aquarium photography

One of the early pioneers to achieve decent results with aquarium photography was the French scientist Paul Louis Fabre-Domergue (1861-1940), who in 1899 published the monograph *La Photographie des animaux aquatiques* ("Photography of aquatic animals"). This work was accompanied by ten astonishing images captured in aquariums and featuring live subjects while swimming or moving on the bottom. In the same year, the German magazine *Blätter für Aquarien und Terrarienfreunde* ("Journal for aquarium and terrarium lovers") started to use a few live fish photographs for its articles.



The first monograph on aquarium photography: *La Photographie des animaux aquatiques* by Paul-Louis Fabre-Domergue, 1899. On the right, one of the photographs contained in the book.



Flußbarsch (*Perca fluviatilis* L.)  
 Nach dem Leben photographiert von Dr. C. Bode.

(Aus: Bode „Die mitteleuropäischen Süßwasserfische“, Verlag von Hermann Walther (Friedrich Vechl), Berlin).

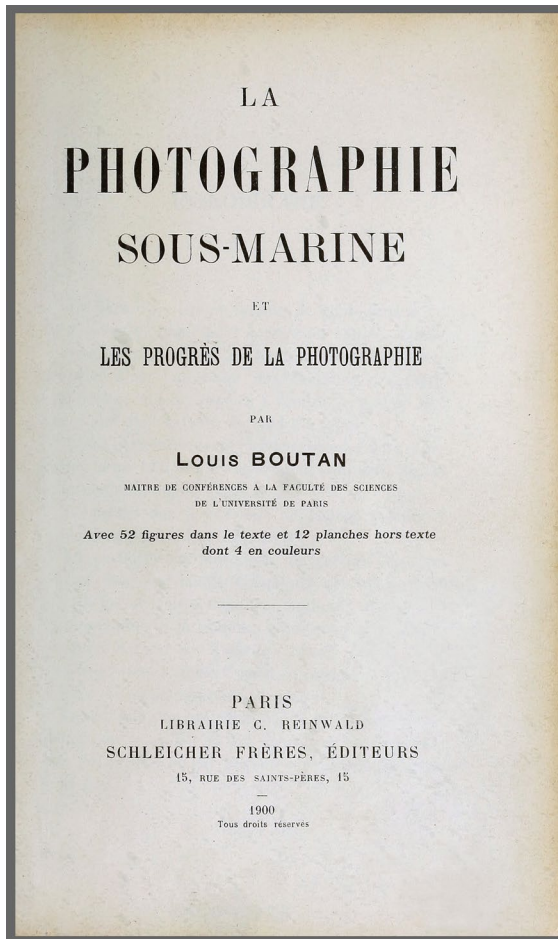
„Blätter für Aquarien- und Terrarienfrennde“,  
 10. Jahrgang, Heft 23.

Verlag der Creutz'schen Verlagsbuchhandlung  
 in Magdeburg.

Aquarium photograph showing a live fish (or purportedly live fish) published by the German magazine *Blätter für Aquarien und Terrarienfrennde* in 1899.

In 1900, another skilled French photographer, Louis Boutan (1859-1934), dedicated to aquarium photography a chapter of his book *La photographie sous-marine et les progrès de la photographie* (“Underwater photography and advances in photography”), in which he also mentioned the efforts of other photographers such as Prouho, Topsent, and Fabre-Domergue himself. Boutan nevertheless had a somewhat peculiar idea about aquarium photography. He believed, in fact, that the best images could be taken by submerging the camera, along with its underwater housing, inside the aquarium, an operation feasible obviously only in large tanks. Obsessed with underwater photography, he considered the aquarium basically as... a small sea!

Across the ocean, in the United States, the precursor of live fish photography was Robert Wilson Shufeldt (1850-1934), who left us a detailed account of his experiences and techniques in the article *Photography of live fishes* published in 1901 on the *Bulletin of the United States Fish Commission*, vol. XIX for 1899, and in the several articles on the subject he wrote in the following years. Named “the father of aquarium photography” by the aquarium historian Albert J. Klee, Shufeldt through his works certainly inspired other American pioneers of live fish photography, such as Leonard B. Spencer, Charles M. Breder, Jr., and William T. Innes.



CHAPITRE XVI

LA PHOTOGRAPHIE EN AQUARIUM

Bien avant que j'aie eu l'idée d'essayer de prendre des clichés de photographie sous-marine, les naturalistes ont cherché le moyen d'obtenir de bonnes images photographiques des animaux tenus en captivité dans les aquariums.

Des essais nombreux ont déjà été tentés dans ce sens, et quelques-uns ont même été couronnés de succès. Cependant le procédé employé n'a jamais donné qu'exceptionnellement de bons résultats, à cause des difficultés très réelles auxquelles on se heurtait.

A ma connaissance, on s'est toujours servi d'appareils ordinaires placés hors de l'eau.

L'opérateur pouvait de cette façon faire une mise au point rigoureuse, mais il était forcément gêné par le miroitement qui se produit à la surface vitreuse de la paroi des grands aquariums.

M. Prouho, professeur à la Faculté des Sciences de

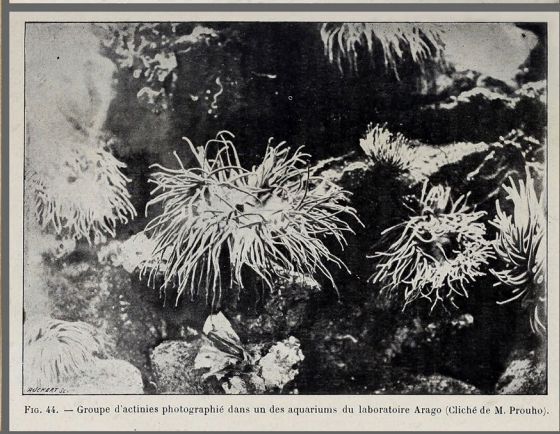
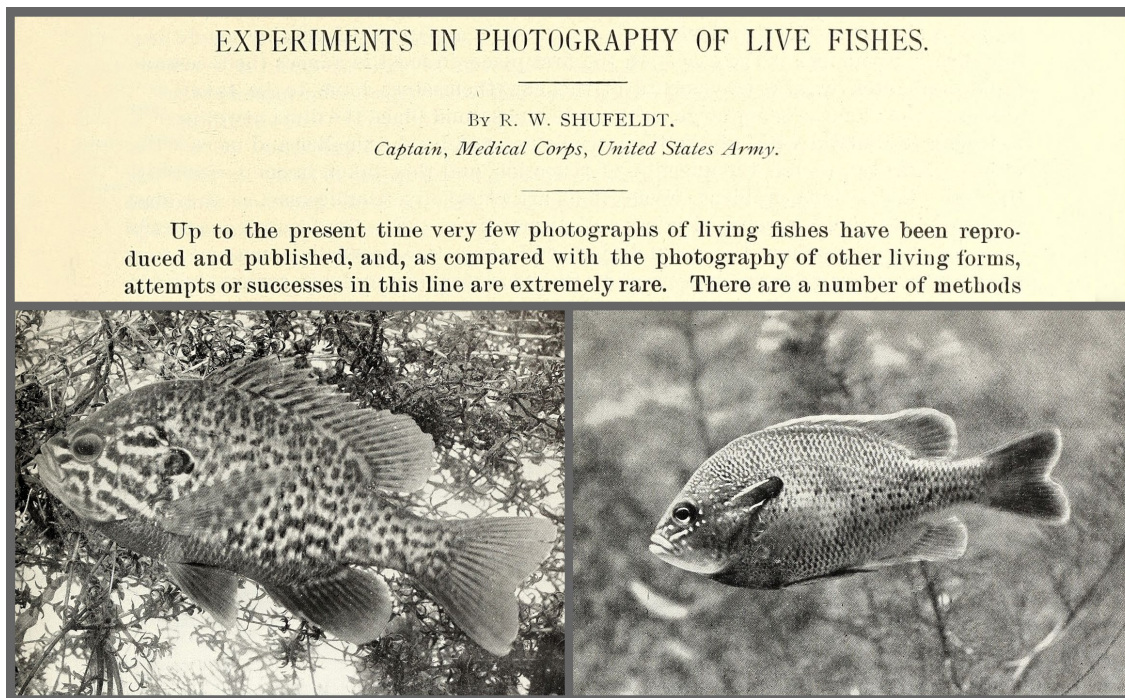


FIG. 44. — Groupe d'actinies photographié dans un des aquariums du laboratoire Arago (Cliché de M. Prouho).

Boutan's book *La photographie sous-marine et les progrès de la photographie*. Chapter XVI is focused on aquarium photography and contains two images, the one here is by M. Prouho, professor at the Faculty of Sciences at Lille (France).



The *incipit* and two images from Shufeldt's article on live fish photography.

## The Zoological Station

But let's back to Europe, and specifically to the Italian city of Naples, one of the most important and visited towns of the Continent. Here, in 1872, was founded the Zoological Station, an independent research institute on marine biology that successfully experimented with the so-called "table system" or "bench system", becoming quickly a mecca for researchers and scientists from all over the world, and a model to be replicated on an international scale. The guest investigators wishing to study marine life could essentially find in this seaside facility:

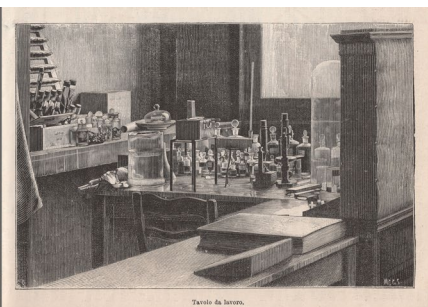
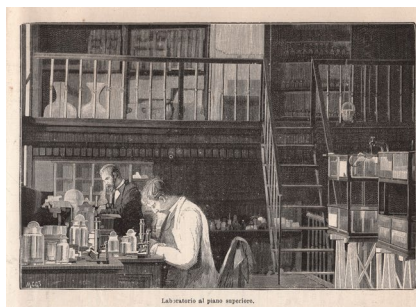
- a "hotel of science" where to stay
- an equipped study bench
- labs with aquariums and all sorts of instruments
- a public aquarium
- an up-to-date library
- a wide and constantly growing collection of preserved marine animals
- qualified technical and scientific assistance
- daily supply of fresh marine organisms
- free circulation of ideas and freedom of research
- international meetings
- the publication of vectors for long distance communication such as journals and monographs.



The Zoological Station then and now. The 1886 illustration is from the newspaper *L'Illustrazione Italiana* (vol.XIII, No.51).



The proximity to the Gulf of Naples, an area of the Tyrrhenian Sea with a stunning biodiversity back then, offered lots of advantages both to the Zoological Station and to its public aquarium.



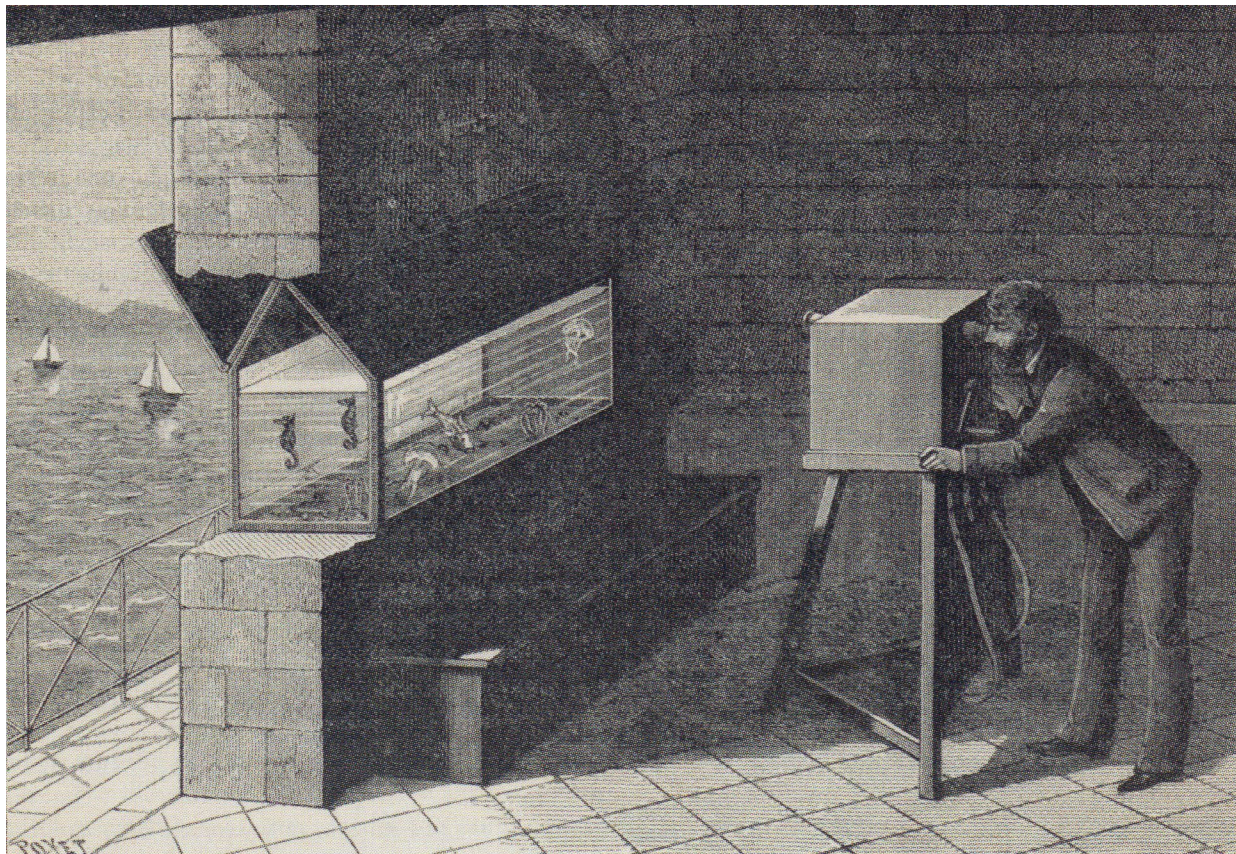
A laboratory (left) and a research table (right) at the Zoological Station. Illustrations published by the newspaper *L'Illustrazione Italiana* in 1886 (vol. XIII, No.51).

The founder and first director of the Zoological Station, the Darwinian zoologist Anton Dohrn (1840-1909), always encouraged the use of photography for promotional and educational purposes, especially to document the multiple activities, the facilities, and the equipment of the Zoological Station. An impressive collection of those images depicting the everyday life of the time is still preserved in the Historical Archive of the facility.

### **The stunning photographs of a great anatomist**

Dohrn also recognized the future potential of photography in the scientific field, likely thanks to the work of his friend Étienne-Jules Marey (1830-1904), a French physiologist who used chronophotography techniques to document the movements of various marine animals obtained from the Zoological Station, and kept inside an aquarium he set up in the caves beneath his seaside villa at Posillipo.

At the Zoological Station, guests willing to experiment with aquarium photography could find a wide array of subjects, both in the lab tanks and in the public aquarium built in 1874 on the ground floor under the remote supervision of William Alford Lloyd. It was just in the public aquarium, in 1898, that the German anatomist Johannes Sobotta (1869-1945) took a memorable series of iconic photographs, then used for years in magazines, books, scientific publications, advertising literature, and postcards. This eminent scientist, still remembered today for his masterpiece *Atlas der deskriptiven Anatomie des Menschen* (“Atlas of descriptive human anatomy”), left us some priceless time portals to see how, more than 120 years ago, the tanks of a public aquarium looked like.



An 1890 illustration from the French magazine *La Nature*, showing Marey experimenting with chronophotography at Naples. Scientist and inventor, he was an influential pioneer of the history of cinema as well. His “chronophotographic gun” was capable of taking 12 consecutive frames per second, which were recorded on the same picture.

Dr. A. Vianna de Lima zeigt sich in der Auswahl der Situationen als ein Künstler von feinem, geläutertem Geschmack; es ist Alltägliches und eben deshalb unwiderstehlich Grossartiges, was er einer Reproduktion für würdig hält. Betrachten wir einmal das „irische Mädchen“. Sie ist nicht schön, aber ein Typus. Die Augen erzählen uns eine Geschichte. Dann werden wir in eine Dorfschule geführt. Welcher Ernst lagert auf den einzelnen Gesichtern der Buben. Wir können uns keine ungezwungene Anordnung denken. Und dabei kommt jede einzelne Individualität zu einer Geltung,



*Aufnahme aus dem Aquarium der zoologischen Station zu Neapel*

*Dr. Sobotta, Würzburg*

Sobotta's aquarium photographs had a great success. Here, one of them, published by *Photographische Rundschau*, a photographic journal for amateurs printed regularly from 1887 to 1943.



One of the photographs taken by Sobotta at the public aquarium of the Zoological Station. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, G.IV.135.6.)

The grotto-style set-up was all the rage back then, and in this tank was taken to the extreme by adding stalactites and stalagmites likely to recreate a deep water environment! Besides the multiple invertebrates hidden among the rocks, this aquarium hosted *Anthias anthias* and *Capros aper*, two species still much sought-after by Italian fishkeepers specialized in Mediterranean aquarium.



Another Sobotta's photograph from his famous series of images taken in 1898.

©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, G.IV.135.5.).

## Professional artists at the service of science

Dohrn, an advocate of art in many forms, was anyhow aware of the limitations of the photography of those years. He knew that the scientific works issued by his guests and by the Zoological Station itself required detailed scientific and zoological illustrations, whether in black-and-white or color, capable of showing all the details that eluded the camera.

Although many researchers, scientists, and authors of that era, such as the well-known and talented Ernst Haeckel (1834-1919), were also skilled illustrators, this great “manager of science” wanted to provide in-house artists to his guests in order to guarantee a quick, high-quality production of drawings and watercolors, including the ones for the series of monographs *Fauna und Flora des Golfen von Neaples* (“Fauna and Flora of the Gulf of Naples”) which Dohrn intended as an inventory of the Tyrrhenian Sea (part of the Mediterranean Sea, off the western coast of Italy), and entrusted to Italian and international authors.



At the Zoological Station, art is quite everywhere!



Back then, authors of scientific works often were illustrators as well. Ernst Haeckel, a zoologist, naturalist, eugenicist, philosopher, physician, professor, and marine biologist, was one of the most sophisticated and talented.

From the mid-1880s to the outbreak of WWI, three artists were hired: Comingio Mercuriano, Vincenzo Serino, and Francesco Manzoni. Today, the Historical Archive of the Zoological Station preserves hundreds of their original drawings and watercolors, so many that putting together a selection of them was a hard task for me. You know that feeling you get when you are spoiled over choices? That weird mix of joy for what you are going to select, and regret for what you have to leave out. Well, the time I spent in the Historical Archive, working for the delight of MOAPH readers, was constantly filled with this sensation!

### Neapolitan talents

Comingio Mercuriano (1845-1915) was the first artist in Dohrn's service, and probably the most talented and prolific. Born in Naples, he studied at the Institute of Fine Arts of his hometown, specializing early on landscapes of the Gulf of Naples, and producing paintings which were (and still are) much sought-after and appreciated. Mercuriano was hired by the Zoological Station in 1885, and worked there until his death. His drawings enriched the *Guide to The Aquarium of the Zoological Station at Naples* (the first edition had no illustrations), and the monographs *Fauna und Flora des Golfen von Neaples* written by Della Valle, Bürger, and Jatta.



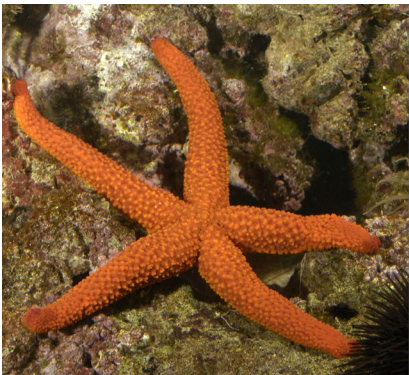
Watercolor of *Thalassoma pavo* by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.107.). Below, the same species photographed in its natural surroundings.



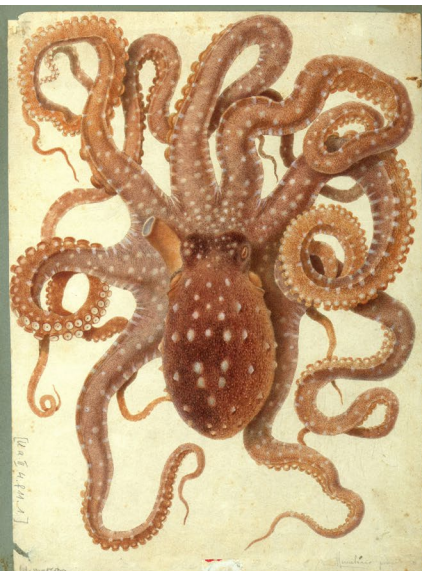
*Peltaster placenta* by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.II.3.f09.1. and Ua.II.3.f09.2.). Below, the same species photographed in its natural surroundings.



The basket starfish *Astrospartus mediterraneus* by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.II.3.f01.1.). On the right, the same species photographed in an aquarium.



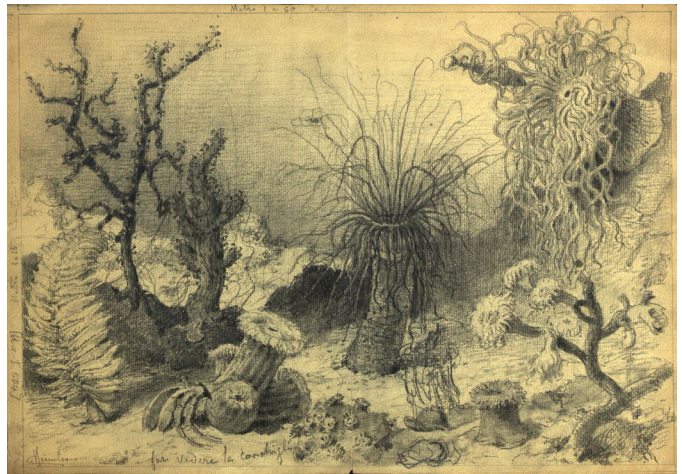
*Echinaster sepositus* by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.II.3.f08.1. and Ua.II.3.f08.2.). Left and right, the same species photographed in an aquarium.



*Callistoctopus macropus* by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.II.4.f11.1.). On the right, the same species photographed in the wild.



Some of Mercuriano's ink drawings that enriched the *Guide to the Aquarium of the Zoological Station at Naples*. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.524. and Ua.I.565.).



Mercuriano's sketch. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.504.).

Outside the strictly scientific domain, an important international acknowledgement of his work arrived with the amazing chromos, based on his drawings, published in the *Meyers Konversations-Lexikon*, a universal encyclopedia that achieved great success in those years, becoming a must-have in German speaking households.



Color plate signed by Mercuriano and published in the *Meyers Konversations-Lexikon* (6th edition, 1902-08).

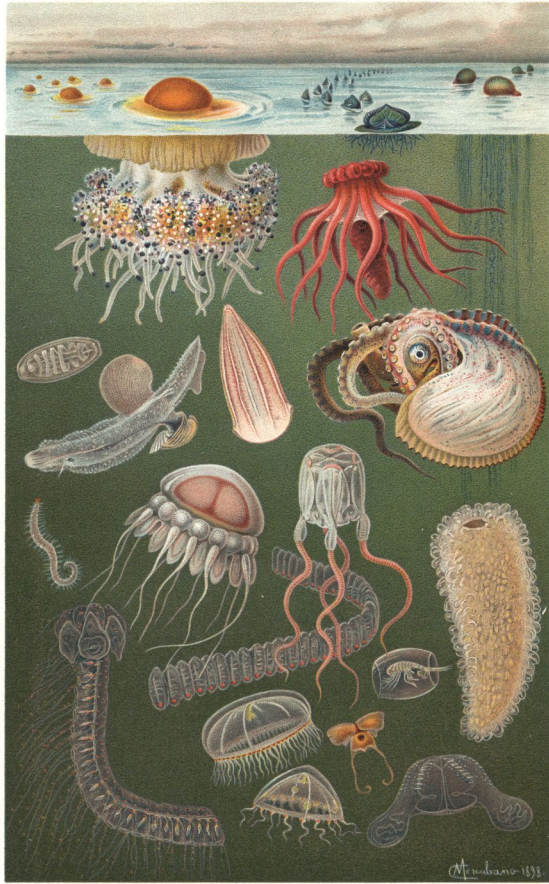


From the encyclopedia *Meyers Konversations-Lexikon* (6th edition, 1902-08, of which 240,000 sets were sold), a color plate signed by Mercuriano and depicting an imaginary marine aquarium populated by animals from the Mediterranean Sea.



Color plate signed by Mercuriano and published in the *Meyers Konversations-Lexikon* (6th edition, 1902-08).

Meeresfauna II.



Meyers Konv.-Lexikon, 6. Aufl.

Bibliogr. Institut, Leipzig

Zum Artikel 'Meeresfauna'

Color plate signed by Mercuriano and published in the *Meyers Konversations-Lexikon* (6th edition, 1902-08).

Medusen I.



Meyers Konv.-Lexikon, 6. Aufl.

Bibliogr. Institut, Leipzig

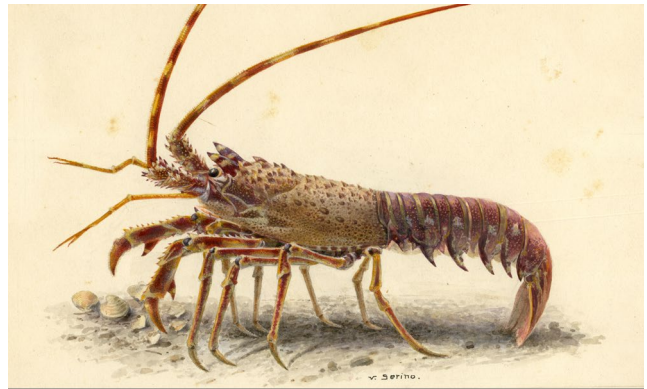
Zum Artikel 'Medusen'

Color plate signed by Mercuriano and published in the *Meyers Konversations-Lexikon* (6th edition, 1902-08).

Vincenzo Serino (1876-1945), like Mercuriano, studied at the Institute of Fine Arts at Naples. He specialized in scientific watercolors and zoological illustrations for books, publishing also various works on the didactics of art. Hired by the Zoological Station in 1898, for the series *Fauna und Flora des Golfes von Neapel* he collaborated on the monographs written by List, Selys-Longchamps, and Wilhelmi. Over the years, Serino produced multiple amazing drawings and watercolors which, when observed on a display, tempt you to zoom in more and more in search of hidden details, exactly as I did for hours while preparing the images for this article!



*Anthias anthias* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.457.). Below, the same species photographed in its natural surroundings.



*Palinurus elephas* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.29.). Below, a late 19th century aquarium photograph of lobsters by Fabre-Domergue. The comparison clearly highlights the strong limitations that photography of that time had in capturing colors, and the small details that characterized a subject.



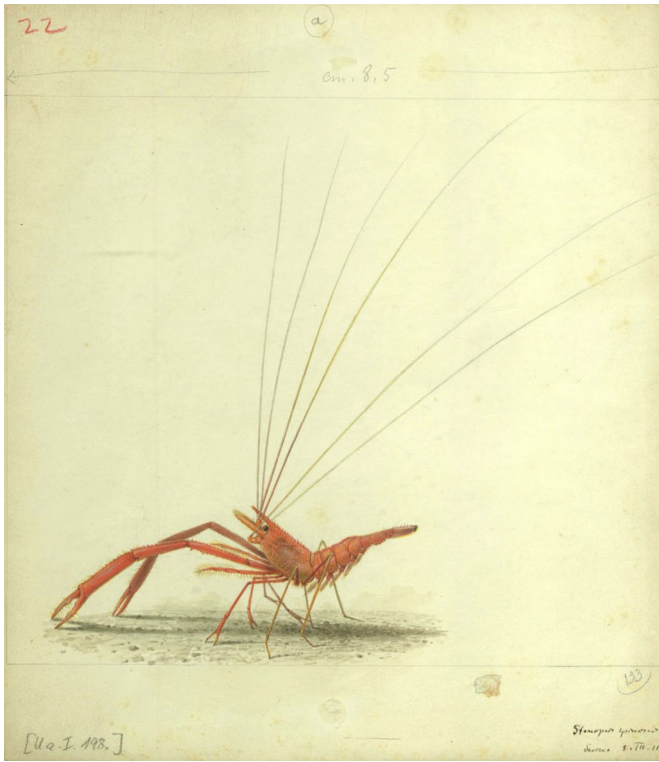
Serino's attention to details was stunning. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.29.).



*Pagurus prideaux* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.97.). On the right, the same species photographed in an aquarium.



*Galathea strigosa* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.8.). On the right, the same species photographed in its natural surroundings.



*Stenopus spinosus* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.198.). On the right, the same species photographed in an aquarium.



*Halocynthia papillosa* by Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.98.). On the right, the same species photographed in an aquarium.



Serino's drawing showing *Octopus vulgaris* with eggs. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.501.).

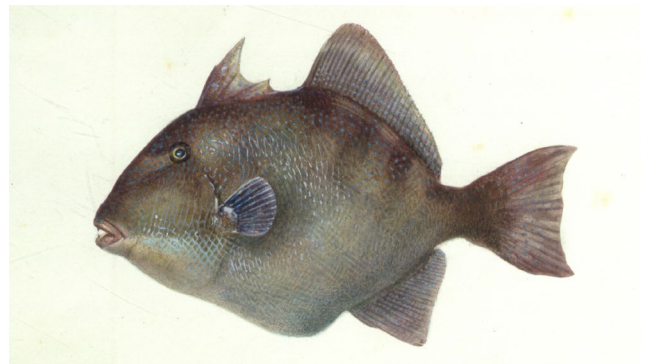
Born in 1888, Francesco Manzoni graduated from the Regio Museo Artistico Industriale at Naples, and worked for almost two years as a lithographic draughtsman at the Richter factory. He was hired as a scientific illustrator at the Zoological Station in 1909, the year Anton Dohrn passed away, and remained there four years. Unfortunately I couldn't find any photograph of him. Many of his artworks, instead, are still preserved in the Historical Archive, and show a skillful use of colors and great attention to the morphology of the subjects.

### **Aquariums made a difference**

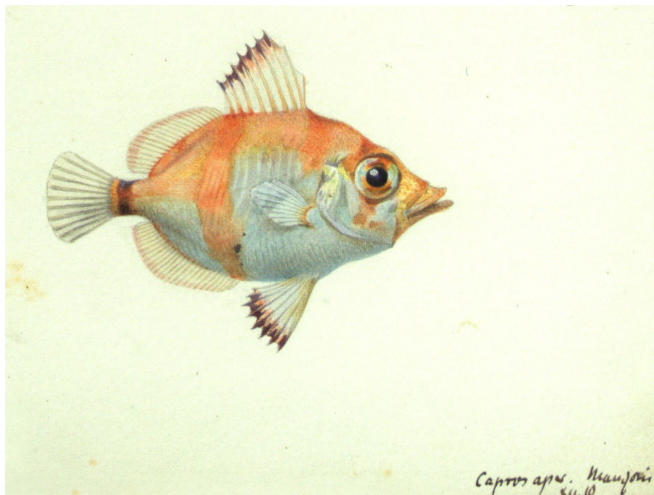
These three artists executed a large amount of scientific illustrations, faithful portraits of the reality resulting from the meticulous study of the subject, and made mostly to communicate with the world of science respecting specific graphic standards (fish depicted in profile, head turned to the left, spread out fins, etc.).



*Apogon imberbis* by Manzoni. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.929.). Below, the same species photographed in its natural surroundings.



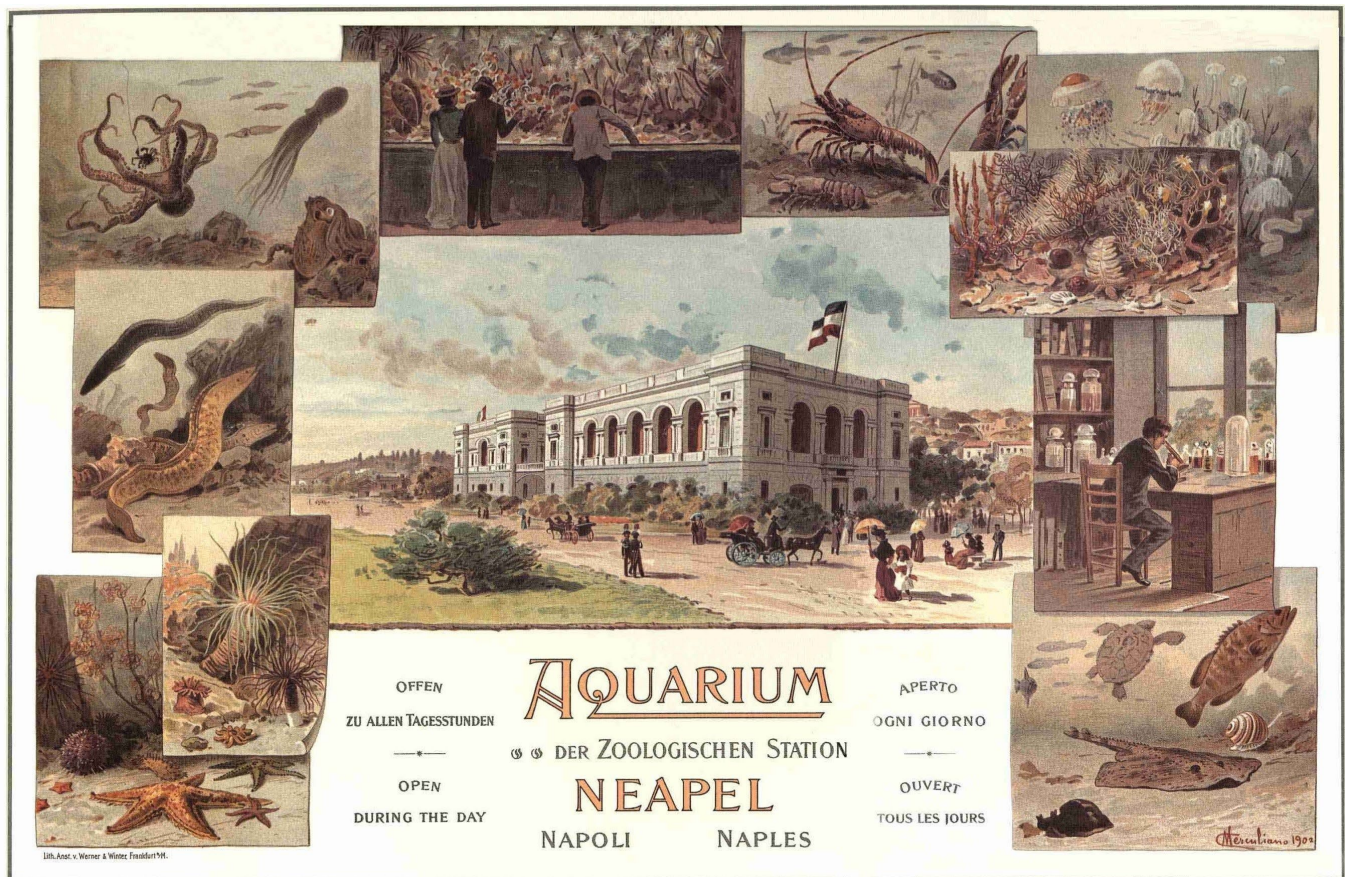
*Balistes capriscus* by Manzoni. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.930.). Below, the same species photographed in an aquarium.



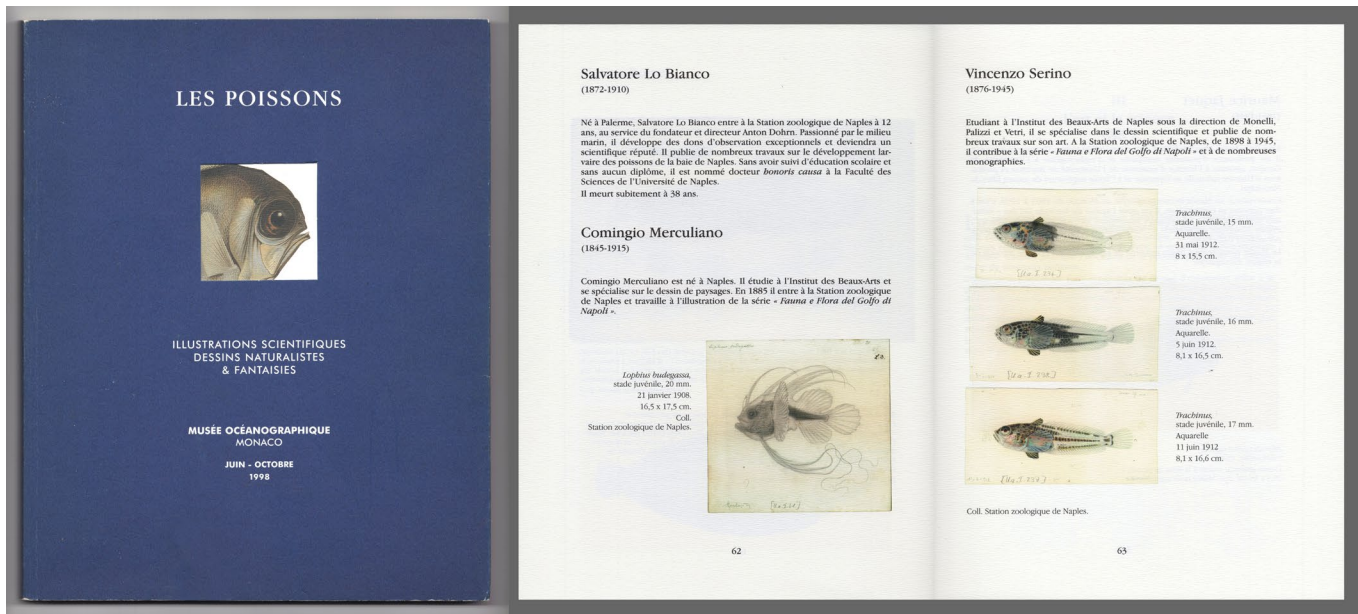
*Capros aper* by Manzoni. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Ua.I.41.). On the right, the same species photographed in an aquarium.

It wasn't an easy task at all. They, in fact, had to reproduce the model with high accuracy, selecting the details to highlight, and relying on a system of measurement. They used magnifying glasses, microscopes and often needed to make scale changes through the proportional compass. The most complicated works could take several hours to be completed.

Unlike many authors and professional scientific illustrators of the time, who usually had to portray dead, or nearly dead or preserved aquatic animals (fish rapidly lose their natural colors and start to shrink once they are dead), they often had live subjects at their disposal, and they had the chance of observing them, often for a long time, in the well-managed tanks of the laboratories and the public aquarium. This allowed them to capture their vivid colors, characteristic attitudes, breeding habits, and growth stages. Despite the fact that they were not men of science, their indirect, constantly growing knowledge of marine life helped them to do well even in the field of the popular naturalistic illustrations, where subjects were depicted in more natural poses and surrounded by multiple graphic elements from their native habitat.

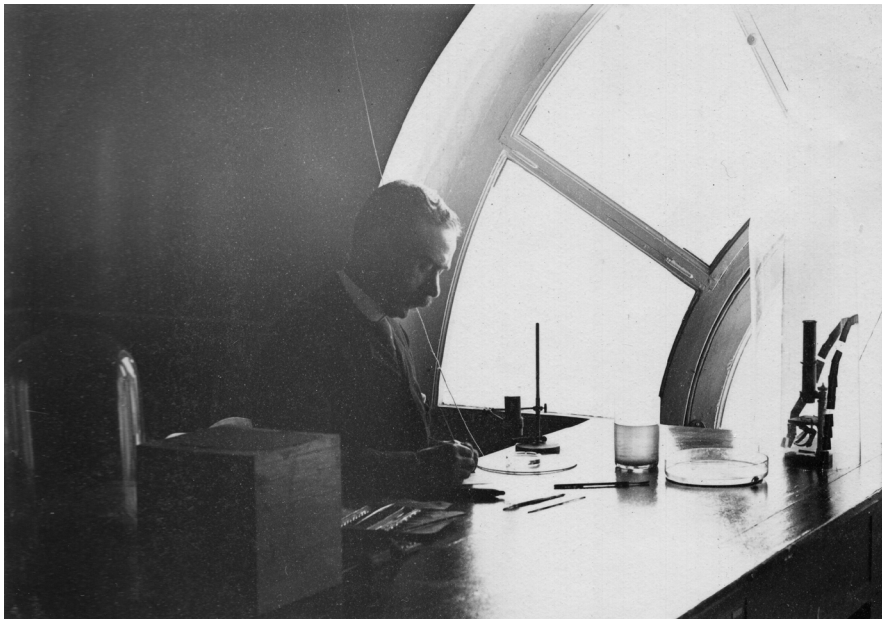


Modern reprint of a 1902 promotional poster by Mercuriano. ©Stazione Zoologica Anton Dohrn, Archivio Storico.



Catalog of the 1998 exhibition on fish illustration organized by the Oceanographic Museum of Monaco. Among the artworks on display, were included also a few drawings by Mercuriano and Serino.

Using the universal and captivating language of illustrations, Mercuriano, Serino, and Manzoni contributed undoubtedly to unveil and visually describe the wonders of the Mediterranean. As a great lover of this sea, the backdrop to the most exciting moments of my childhood, I can't help but dedicate this article to their memory.



Comingio Mercuriano in 1889. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, La.119.32.).



Vincenzo Serino. ©Stazione Zoologica Anton Dohrn, Archivio Storico (ASZN, Lb.1.s.191.).