

Tourists in Science: 19th Century Research Trips to the Mediterranean

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During the first half of the 19th century a considerable number of German scientists came to Italy to conduct research on the shores of the Mediterranean. These ‘tourists in science’ were part of the long tradition of artists, poets, scholars, and aristocrats attracted to Italy by the traces of the past, art, natural beauty, and the Mediterranean way of life. Scientists were drawn to places that allowed them to combine their research with sightseeing. Four cities in particular were favoured in this sense: Nice, Trieste, Naples, and Messina. Focussing on the latter two cities, this paper investigates several aspects of this new kind of adventure trip, namely the growth of local research traditions and international networks for the exchange of information and research material. Particular attention is given to the role of local hosts such as Stefano delle Chiaie, Arcangelo Scacchi, and Guglielmo Guiscardi in Naples and the German scientists August Krohn and Rudolph Amandus Philippi both in Naples and Messina. It is shown that not only did serendipity continue to prevail in such *ad hoc* organised field trips but that well organised research facilities, such as the Stazione Zoologica (1872) at Naples, turned out to be an answer to the need for better administration of individual resources.

INTRODUCTION

Kennst du das Land, wo die Zitronen blühen,
Im dunklen Laub die Gold-Orangen glühen,
Ein sanfter Wind vom blauen Himmel weht,
Die Myrte still und hoch der Lorbeer steht,
Kennst du es wohl? Dahin! Dahin
Möcht ich mit dir, o mein Geliebter, ziehn!

Do you know the lands where the lemons blossom?
Where the gold oranges glow in the dark leaves,
A gentle breeze blows from the blue sky,
The myrtle stands silent and the laurel tall?
Do you know it? There, there,
I long to go with you, my love.¹

Mignon’s lovely song from Goethe’s novel *Wilhelm Meister’s Apprenticeship* immediately comes to a German mind when thinking of Italy. Someone even stated that the love for Mediterranean solarinity is embedded in the genetic code of all Germans. Certainly not, but the number and variety of Germans from all backgrounds and upbringing who have travelled to Italy across the

centuries is amazing. Some of them shaped their experience into works of culture or art through which their Italian experiences will continue to be remembered.

Johan Wolfgang von Goethe came in 1786–88; curious and full of expectancy, he is seen here looking out of the window in his Roman flat (Fig. 1). One can feel his longing to be down in the street, to become part of what he is only looking at. His experiences are forever fixed in his beautiful *Roman Elegies* (1788–1790) and the diary *Italian Journey* (1786–1788). The German composer Felix Mendelssohn-Bartholdy (1809–1847) came in 1831; in Naples and Rome he started to think about his Italian Symphony.² The German poet Wilhelm Müller (1794–1827) and the German painter and poet August Kopisch (1799–1853; Fig. 2) brought back collections of Italian folk songs. (Wolff 1829; Kopisch 1838) To Kopisch we owe a most entertaining translation of the Neapolitan fish song “Il Guarracino” (Groeben and Gambi 1992), but more important, Capri owes him the rediscovery of the Blue Grotto (Kopisch s.d.; Fig. 3). The excavations at Pompei and the eruptions of Mount Vesuvius also played a large role in attracting visitors and experts. Scientists travelled to the Mediterranean with the intent to collect material and do serious research. References to research stays at the seaside, mostly during the early period of a scientific career, may be found in many biographies, obituary notes and scientific publications.

It is my intention in the discussion that follows to throw some light on this particular group of ‘tourists in science’, as I would like to call them, because tourists they were who also came for something that they wanted to take home. But they were different from those tourists who came for traces of the past, beauties of nature or works of art. They were less unobtrusive because the resulting scientific papers were much less obvious or fancy than a painting, a book, a symphony, or a poem. Some light will be thrown on this phenomenon as a whole, i.e., not so much on the significance of these trips for a single person, but rather as an attempt to answer questions such as “Where did they go?”, “How did they work?”, “With whom did they meet?”, “What did they achieve?”

1. GETTING PREPARED

At one time, and with special reference to marine biology, when there was still much to discover and to describe, a scientist who wanted to further his knowledge could either study collections at museums or ask friends to collect organisms for him — or he could travel to the sea himself. The latter was often a trip into the unknown because of the lack of on-site information. For



FIGURE 1. Goethe in Rome, drawing by J.H.W. Tischbein, 1787. Author’s collection.



FIGURE 2. August Kopisch.

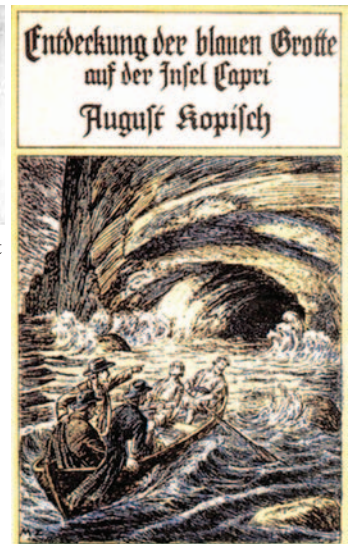


FIGURE 3. Discovery of the blue grotto on the island of Capri, by August Kopisch, [1925], cover page.

instance, Karl Ernst von Baer (1792–1876) travelled during the summer of 1846 from St. Petersburg to Trieste to study the development of sea-urchins and ascidians. Years later he recalled:

So little then one was used to this kind of investigation that I could find no information on the right time for such studies. Only when in Trieste did I discover that I had arrived much too early and that the spawning season would start three months later. In addition, the local fishermen were not experienced in getting sea-animals that cannot be eaten. I obtained only what they found by chance. (Raikov 1968:212–213.)

In this way von Baer did see many new organisms, but he could not make continuous studies because the animals did not live for more than two days because he had no aquaria in which to keep them properly. When he finally received sea urchin embryos, the chambermaid thought they were rubbish and threw them out the next morning.

Very often a scientist also had to improve reported methods and tools and adapt them to his own purposes. For example, Alexander Kowalewsky (1840–1901) found the much praised “Müller-net” for plankton fishing of no use for him because the mesh was too large for the ctenophore eggs in which he was interested (Kowalewsky 1866:16). He, therefore, kept fertilized animals in large buckets and nursed them to hatching by constantly changing their water.³

Other problems to be faced before departure, were the choice of sites and lodgings, and what kind of equipment to take along. Anton Dohrn, for instance, left for Helgoland in 1865 with several textbooks, nets, two microscopes, a Brücke magnifier, and “incredibly beautiful hats for all occasions”.⁴ Two years later (1867) Ernst Haeckel (1834–1919) and Nikolai Micloucho Maclay (1846–1888; Fig. 4) seem to have left for Lanzarote rather well prepared, but by then Haeckel could already look back to earlier field experience in Helgoland and southern Italy.

2. WHO CAME?

Attention is here focused on German scientists and those who studied in Germany and/or published in German. This limitation is not as arbitrary as it might seem because most of the scientists travelling to the Mediterranean *were* Germans, whereas French, British and Scandinavian scientists did their research at home, at their own national seaside resorts. For Germans, the main reason cannot only have been the relative inaccessibility or scarcity of marine fauna of the German seas, because, since the 1830s the island of Helgoland, then still British property, attracted a considerable number of scientists (Florey 1995), but it appears that many of them later also travelled to the Mediterranean, rather as if Helgoland had whetted their appetite for more. We may



FIGURE 4. Nicolai Micloucho-Maclay and Ernst Haeckel at Lanzarote, 1867. ASZN:La.13.

mention here Christian Gottfried Ehrenberg (1795–1876), Rudolph Amandus Philippi (1808–1904), Albert Koelliker (1817–1905), Carl Gegenbaur (1826–1903) and, of course, Ernst Haeckel.

Before there were railway connections, travelling to Italy was rather time consuming. Once or twice a week there was a boat from Naples to Messina that took two days travel time. And in 1854 Johannes Müller (1801–1858; Fig. 5) reported to a friend that it had taken him only nine days to return from Sicily to Berlin (Retzius 1900:73). The willingness to endure the stress of such long travels was certainly not exclusively motivated by striving for knowledge and a certain love of adventure; these scientists also wanted to share the experience that for centuries had already brought an endless flow of artists, poets, naturalists and travellers to Italy. However, ‘tourists in science’ distinguished themselves from tourists in nature and culture insofar as they tended to mix the enjoyable with the profitable, the thirst for culture with the drive for discovery.



FIGURE 5. Johannes Müller. *In*: Retzius, 1900, frontispiece.

3. NAPLES AND MESSINA

Four cities seem to have been favoured by scientists in this sense: Nice on the French Riviera, Trieste on the Adriatic, and Naples and Messina in the South. The Riviera and the Adriatic could quite easily be reached from Northern Europe, whereas it took two to four additional days to reach southern Italy. In spite of their distance, Naples and Messina may be considered complementary because both were part of the Kingdom of Both Sicilies: Naples (Fig. 6) as the splendid Capital with a number of scientific institutions that promised contacts and exchange; Messina as the place



FIGURE 6. Naples and Mount Vesuvius at the end of the 18th century.

known for the richness of its fauna and flora ever since in 1788 Lazzaro Spallanzani (1729–1799) had observed and studied there various organisms of the pelagic and littoral fauna.⁵ Interestingly, most of the scientists known to me at this time visited and worked at both Naples *and* Messina.

During the period considered here, the city of Naples presented itself very differently to visitors arriving from the sea. The hills of Vomero and Posillipo were still not built upon, and the impressive regular rows of houses and hotels lining the waterfront were yet to come. The grandiose extraction of new building land from the sea completely transformed the shore-



FIGURE 7. Naples, Santa Lucia in the 1880s. Author's collection.

line from Mergellina to Santa Lucia during the last quarter of the 19th century. The street of Santa Lucia (Fig. 7), often described as the lively centre of the city, was a broad well-paved street, decorated with fountains, with a splendid view of the city, the port, the sea, and Mount Vesuvius. There were oyster and fish sellers, small restaurants, bathing establishments, and sellers of healthful sulphur water. At the upper end there was the Hotel de Rome where many foreigners stayed, among them, in 1842, Johannes Müller. Private rooms could be rented in the houses on the landside of the street. In 1842, Albert Koelliker, Carl Nägeli, and August Krohn lodged at no.21, as did the German historian Theodor Mommsen in 1845 and Ernst Haeckel in 1859. Via Santa Lucia seems to have been popular among those who appreciated simple lodgings. In 1831, we find there the composer Felix Mendelssohn, and in 1856 the entomologist Carl August Dohrn with his wife Adelheid and his oldest son Heinrich. The Russian embryologist Alexander Kowalewsky stayed at no. 92 several times (1864–66, 1868, 1870–71)⁶, and zoologist Carl Claus (1835–1899) found quarters there in 1873, thanks to the efforts of Anton Dohrn.⁷ Haeckel was particularly pleased with the view from his lodgings, which he described to his fiancée as follows:

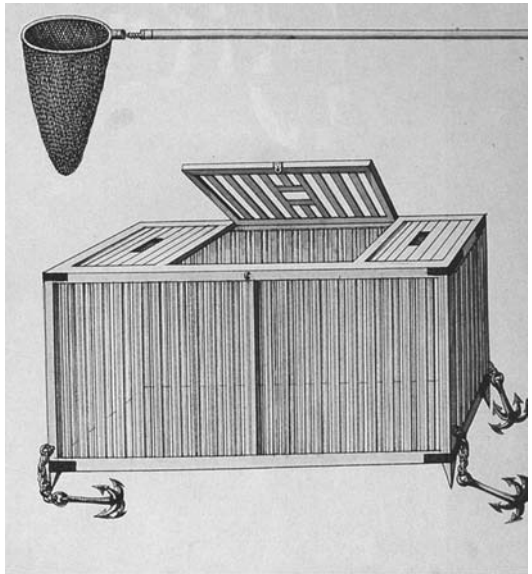
... the full front across the Gulf is taken up by Vesuvius, the masses of lava of which present me the whole day long with the most splendid fireworks. On the right I look over the picturesque Castel dell'Ovo towards the jagged mountains of Sorrento and further on, beautiful Capri, to the left over the arsenal and the forest of masts of the port towards the snow-covered highest range of the Apennine. The purest sea-air blows all day long over the splendid, dark blue Gulf into my room. At my feet I have the multicoloured jumble of the beach-people, the vivid life of the S. Lucia fishermen. . . . Going down two small flights of stairs and across the street, in just 20 steps I am on the beach where I can easily help myself to fresh seawater and, in case the fishermen do not bring any decent material, also to a sufficient quantity of algae and smaller animals from the shore. (Haeckel 1921:27–28)

The port of Messina, in particular, was known to be a rich site for a great variety of research materials. Visiting scientists seem to have favoured the Hotel du Nord close to the port (Haberling 1924:387). They also joined the existing German colony. Feeling somehow at home was always an important factor in surroundings where one did not know the language and was unfamiliar with local habits. On the other hand, especially in Messina, there also existed a lively local tradition of natural history studies. At Catania, the Accademia Gioenia had been founded in 1824, and contributions to its proceedings regularly reported on findings in natural history. Academic partners,

often mentioned in letters and publications, were Carlo Gemmellaro (1787–1866),⁸ Carmelo Maravigna (1758–1851)⁹, and Anastasio Cocco (1799–1854).¹⁰ And for more than 20 years (1818–1842), the local and visiting scientific community was enriched by the presence of Jeannette Power Villepreux (1794–1871) who has to be located somewhere in the midst between native members and long- or short-term visitors.¹¹

Villepreux was born in 1794 at Juillac (Corrèze, France). In 1818, she married the English merchant James Powell at Messina where he had a successful business. Mrs. Power spent her free time exploring Sicily; in 1842, before concentrating her interest on marine animals, she even published a guide to the Island (Power 1842). She seems to have followed Louis Agassiz' much quoted motto "Study nature not books", convinced that first of all it needs the careful observation of developmental processes. What she did, and what makes her probably rank in a top position in the history of research aquaria (Gage 1883) was that in 1832 she started to build several types of aquaria, each based on the size of the animals she wanted to observe. Some of the aquaria she kept at her house in Messina. Others¹² (Fig. 8) were anchored in a quieter part of the port of Messina where she could observe the development and behaviour of *Octopus* and her favourite animal, *Argonauta* (Fig. 9). For instance, she observed something that had only been reported by Pliny the Elder, namely, an octopus holding a piece of rock, patiently waiting in front of a *Pinna nobilis*. As soon as the *Pinna* opened its shells, the octopus pushed the rock between them so that they could not be closed, which then allowed the octopus to feast on the mollusc at its leisure. To Jeannette Power we also owe the proof that the *Argonauta* produces its shell, that it is, therefore, not a squatter like Bernard the hermit, and that the mollusc can also repair damaged parts of its shell. Power was well read and had good connections. Her results and a collection of at least 20 well-preserved *Argonauta* were sent to Richard Owen who reported on her findings at the Zoological Society of London in 1839 (Owen 1839). The same year she was nominated corresponding member of the Society, a rare honour for a woman. Her results were also published in German (Power 1845). In his work on *Argonauta argo*, Rüppell refers to her work (Rüppell 1852:213–214). Naturalists travelling to Sicily, thus, knew about her presence, her work, and the working conditions at Messina.

More or less casual encounters could also lead to a mini-network of shared responsibili-



Les cages "à la Power" faisaient 4 m de long, 2 m de haut et 1,4 m de large. Ancrées en bord de mer, elles permettaient l'observation directe des animaux. Dessin réalisé par Jeannette Power.

FIGURE 8. Power Cage for the observation of marine organisms. Drawing by Jeanette Power. 1839.



FIGURE 9. Argonauta, sketch by Jeannette Power. 1839. In: Guiffre 1994:53.

ties. In 1852, Albert Koelliker, Heinrich Müller, and Carl Gegenbaur met at Messina; they divided the work among themselves and published a joint report. Koelliker worked on Medusae and Siphonophores, Müller on Salps and Cephalopods, and Gegenbaur on Pteropods and Heteropods (Koelliker 1899:152).

4. INTERACTING WITH RESEARCH SITES

Ernst Haeckel and Albert Koelliker may serve here as examples for two different kinds of Naples experiences, probably conditioned by a combination of external and internal factors. Koelliker came in 1842 from Zurich together with his friend, the botanist Carl Nägeli (1817–1891). He was enthusiastic about Naples; his studies on the development of *Sepia* proceeded well, and he collected and preserved great quantities of material for himself as well as for Professor Jacob Henle and the anatomical Museum in Zurich. The 3½ months spent in Naples were interrupted by six equally satisfying weeks in Messina.

“I get the rarest animals, animals that I have never seen in Naples”, he wrote home from Messina, “and four to twelve times cheaper than there because I am the only one to buy such stuff and can therefore usually fix the price myself.” (Koelliker 1899:76)

He finished up with a great barrel full of fish and more than 100 jars containing rare animals, among them several hundred *Amphioxus* that lasted him for more than one year. He also enjoyed mixing with the colony of foreigners (his scientific contacts will be mentioned later).

In contrast, Haeckel, upon his arrival, felt insecure because he had no well-defined project, and it was depressing that after two previous stimulating research stays at Helgoland (1854) and Nice (1856) in the company and under the guidance of friends, he now had to rely only on himself. He ill-suffered the noise and dirt and the unreliability of the fishermen, who rarely brought him what he had asked for. Limited space, disorder, and the nuisance of taking care of himself certainly did not help to lift his spirits. He describes his living conditions as follows:

Already in itself the room is so narrow that a somewhat portly person can only turn around with some difficulty; but imagine also all the small household equipment and the tools of a naturalist; the nets, buckets for the sea-animals, the paper for plant-pressing hung and spread out for drying, the plant press, the different animals prepared for drying etc., and you have an idea of how squashed and uncomfortable one is. (23.5.1859; Haeckel 1921:54)

As to contacts, he had his daily meals with other Germans, he joined the German singing club and even found a diligent student in marine biology in the person of the Italian Admiral Acton. And he also spent some very pleasant weeks at Ischia and Capri. (Fig. 10)

The frustration about his work changed only at Messina where Haeckel spent six months working intensely with an iron discipline and almost without any human contact. There he found the right object for his studies; he discovered and described 144 new species of Radiolaria, in part thanks to his new Amici immersion microscope, which allowed a 1000-times magnification instead of the usual 3–400 times (Haeckel 1921:136). It was certainly useful that Haeckel could do without help from the



FIGURE 10. Ernst Haeckel, Study on Capri, 1859. In: Uschmann 1983, Fig. 11, after p. 80.

local fishermen. With the Müller-net he scooped up plankton from the water surface that he then examined at home drop after drop.

In general, research material could be obtained in different ways: buying from fishermen, usually after long bargaining; or collecting organisms along the shore and in shallow waters, as Haeckel had done at times in Naples. Others, such as Wilhelm Keferstein and Ernst Ehlers from Göttingen (1859) or Alexander Kowalewsky (1864 and 1865), relied at Naples on the understanding, help and expertise of an older fisherman, Giovanni di Giovanni, who had acquired practice during years of satisfying the odd requests of those “foreigners”. At Messina, naturalists such as Johannes Müller, Hermann Troschel, as well as Haeckel met with similar competent assistance from Domenico Nina. (Haeckel 1921:160)

5. MOTIVATIONS

There exists a wide range of motivations for a research stay along the shores of the Mediterranean. Some researchers came out of pure scientific interest. The professor of Anatomy from Tübingen, Wilhelm Rapp (1794–1868), arrived in Naples in 1825 because he wanted to learn more about the structure of polyps in general and actinia in particular. After having gathered still more data at Cette and Nice and in Norway, he published his results in 1829 (Rapp 1829).

Johannes Müller came to Naples in 1842 with the aim of further studying *Amphioxus*. This strange animal, discovered in 1834 and first correctly described by Oronzio Gabriele Costa as *Branchiostoma lubricum* (Costa 1834:49), immediately aroused the curiosity of experts because, phylogenetically, it was at the origin of vertebrates, although it has no vertebrae. *Amphioxus* soon became a sort of best-seller and drew many scientists to Naples, where, at that time, it could be caught easily in the shallow waters of Posillipo. Müller himself had already published a monograph on *Branchiostoma*, based on studies in Sweden.¹³ Upon his request, Costa had also sent him several animals in 1840.¹⁴ This time Müller took 1,000 preserved specimens back home.

Others went to the sea because they were fascinated by the richness of its fauna, which could easily be obtained and observed on site, preserved for future use, or on commission for colleagues, museums or institutes. Franz Hermann Troschel, Professor of Zoology at Bonn (1851) and for many years editor of the *Archiv für Naturgeschichte* (1849–1880), in 1853 at Messina, collected and preserved so diligently and so much that Johannes Müller, who was with him there and happy to be able to work again on Echinoderms (Retzius 1900:71), decided to spare himself the trouble and to buy from Troschel what he needed for the Berlin Museum. Seven years later Haeckel, on his departure from Messina, needed 12 long days — and a good nose — before the 12 crates of collected specimens were ready for departure, five for himself, two for the Anatomical Museum at Bonn, and one for the Zoological Museums at Jena and Berlin; the last three were less offending to his nose because they contained wine, minerals, and art objects.

Still other scientists came for health reasons. In these cases, studies in marine biology were a serious, but not too stressing activity during the long months or years full of hope for improvement. This was true of Edouard Claparède (1832–1871), for instance, who, however, did *not* get better in Italy. On his way back from Naples, he died at Siena in 1871 at the young age of 39. On the other hand, for August Krohn and Rudolph Philippi the stay in the South seems to have brought about a definite turn for the better; they died at age 87 and 95, respectively.

6. LOCAL SCIENTIFIC CONTACTS

During the first half of the 19th century, no other city in Italy was as rich in scientific institutions as Naples; among them were the University (1224), the Academy of Sciences (De Sanctis 1986:63), the Mineralogical Museum (1801), the “Royal Institute for the encouragement of natural sciences” (Reale Istituto d’incoraggiamento delle scienze naturali, 1806 [De Sanctis 1986]), the Botanical Garden (1809), the Observatory of Vesuvius (1845), and the Geological Museum (1865). The troubled political situation, however, impeded the formation of a continuous tradition. After the Revolution of 1799, many of the individuals associated with the institutions had to leave the country, among them Giosuè Sangiovanni (1775–1849), who went to Paris and studied with Lamarck, Cuvier, and Geoffroy Saint-Hilaire and who, after his return in 1808, introduced Lamarck’s ideas to Naples. Following the liberal “French decade” (1805–1815), under the reign of Joseph Bonaparte and Gioacchino Murat, the restoration, with its suspicions of novelty and progress, and with its surveillance and controls, put constraints on what people could do, especially in the sciences. It is remarkable, however, that in 1845 the 7th congress of Italian scientists could be held in Naples, in the Museum of Mineralogy (*Atti* 1846; Fig. 11). No fewer than 1613 participants came including, among the 814 foreigners, personalities such as Lorenz Oken, Richard Owen, and Goethe’s grandson (Azzinari 1995).

For the visiting zoologists and botanists, local colleagues were not always the most helpful contacts; rather versatile and extrovert personalities such as Stefano delle Chiaie or Arcangelo Scacchi seem to have been the exception. Albert Koelliker had brought letters of introduction from Lorenz Oken for Costa and Delle Chiaie. Haeckel turned to his colleagues Costa and the zoologist-geologist Guglielmo Guiscardi for advice and recommendations. There is less evidence for contacts with Oronzio Gabriele Costa (1787–1867; Fig. 12), Professor of Zoology at Naples (1839–49), who would have been the obvious person to turn to for help and advice. But, since 1837 Costa was extremely busy in publishing, under great efforts and sacrifices, his monumental work on the *Fauna of the Kingdom of Naples* (Costa 1831–1881). In 1849, Costa was discharged from his academic position and had to continue his research on a private basis. However, he also managed to continue his international contacts and to be a gentle and generous host, as has been reported by Koelliker¹⁵ and Krohn.¹⁶

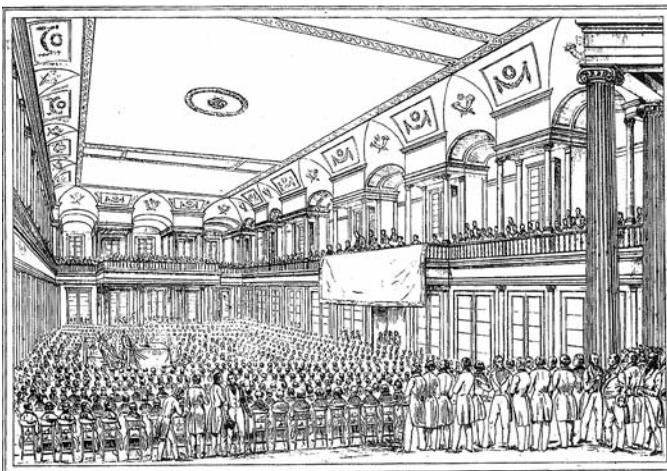


FIGURE 11. VII Congresso degli Scienziati a Napoli, inc. Fergola. 1845. *In*: Azzinari 1996:18.



FIGURE 12. Oronzio Gabriele Costa.

Stefano delle Chiaie (1794–1860; Fig. 13) had studied medicine but preferred a university career to that of a physician (Di Trocchio 1990). He became well known far outside the borders of the Naples Kingdom for his comprehensive and well-illustrated studies on the invertebrates of the Kingdom of Naples (4 volumes, 1823–29; 7 volumes, 1841–44; *Delle Chiaie* 1822–25; 1841–1844) At times he switched to botany and human medicine and also published the works of his teacher Giuseppe Saverio Poli (1746–1825) and of the outstanding zoologist Filippo Cavolini (1756–1810). A biographer summarises: “He was able to gain more laurels than were due to him.” (Di Trocchio 1990:28) But what should be stressed here is the fact that *Delle Chiaie* always met colleagues from abroad with great amiability and stood at their disposal with advice and information. Koelliker visited him in 1842; with Krohn (1840) and Philippi, he maintained a friendly professional relationship; and with Ehrenberg he continued his epistolary contact long before the latter came to Naples in 1858.¹⁷

Arcangelo Scacchi (1810–1893; Fig. 14), the other friendly contact in Naples, started with a deep interest in marine biology; in 1836 he published a catalogue of the molluscan fauna of the Kingdom of Naples (Scacchi 1836). Around 1840 he turned to geology; four years later he became Professor of Mineralogy and Geology at Naples, and his collections of stones and minerals from Vesuvius brought considerable eminence to the Mineralogical Museum. With Philippi he undertook numerous collecting trips in 1839–40 — they shared an interest in molluscs — and, very generously, he donated artefacts and notes to his friend.

It may not be easy today to understand how difficult it was in the beginnings of modern marine biology to obtain good and sufficient research material. Scacchi frequently complained about the delays in sending and receiving collections of minerals to and from Berlin. Peter Simon Pallas (1741–1811) discovered the Branchiostoma in 1778 and based his description on a single preserved specimen he had received from Cornwall.¹⁸ Anton Dohrn asked Darwin for help to get from the London Zoological garden a female *Limulus*, because he wanted to study its development. Darwin regretted that in London they had only one old male (Groeben 1982:25, 29). And Darwin himself, while working on Cirripedia, politely asked Johannes Müller whether he could have some specimens collected by Philippi in Sicily and deposited at the Berlin Museum. (Burkhardt and Smith 1988:213–214)

Slowly, but constantly a wealth of information became available through collections deposited in museums, through the exchange of specimens, and, of course, through publications; the countless articles and letters to the editors of specialised journals speak for themselves. This was the time of articles with stereotyped titles such as “On a new form of...”, “On the development of...”, “On the (eyes, head, fins, habits) of...”. The articles were published in new specialised jour-



FIGURE 13. Stefano delle Chiaie. Museo Nazionale di San Martino, Naples, Fondo Poerio.



FIGURE 14. Arcangelo Scacchi, 1890. In: [Scacchi] 1910, frontispiece.

nals: *Meckel's Archiv für Anatomie und Physiologie*, better known as *Müllers Archiv* (1815), the *Magazine of Natural History* (1828), the *Archiv für Naturgeschichte* (1835), and the *Zeitschrift für wissenschaftliche Zoologie* (1848) — to name only a few of the more important ones.

There are two names that appear regularly and frequently in these journals as authors and references. But, since one of them was never and the other one only barely linked to German institutional contexts, they are almost non-existent in the biographical literature. Here I refer to August David Krohn (1803–1891) and Rudolph Amandus Philippi (1808–1904), both of whom have already been mentioned.

August David Krohn was born at St. Petersburg¹⁹ in 1803.²⁰ His father Abraham Krohn, the founder of Russia's first brewery, had left the island of Rügen in the Baltic Sea to serve at the court of Catherine the Great where he probably also studied medicine. About 1835, he left his position as professor of medicine at St. Petersburg for Hamburg from where he moved to Bonn University working on zoology, anatomy and embryology. In 1832, we find him for the first time in Naples.²¹ Scientific publications by him on crabs, snails, birds, and amphibians are documented since 1834. After 1839, his interests seems to have turned exclusively to marine biology. Up to 1869, his articles appeared quite regularly in German periodicals, more than 80 titles mostly on the anatomy, development, and reproduction of invertebrates. From 1840 on he spent, probably for health reasons, regular periods every year at Naples, Messina, Nice, Tenerife and Madeira, the rest of the year in Paris or Bonn. Krohn died in Bonn in 1891, at the age of 87.

At both Naples and Messina, Krohn established friendly and scientific contacts with Stefano Delle Chiaie — they discussed the nervous system of echinoderms — and also with Johannes Müller, Philippi, Koelliker, Anton Schneider, Carl Gegenbaur and Hermann Troschel. In November 1871, he also visited Anton Dohrn in Naples, who was then busily engaged with the preliminaries for establishing a zoological station.

The following episode may serve to illustrate Krohn's role as a host in order to make foreign guests feel comfortable and at home in Messina and Naples where he himself had spent so much time. In 1853, Hermann Troschel prepared for a two-months trip to Messina and Naples, together with Johannes Müller (Haberling 1922:388). Krohn, who had just returned from Messina, wrote a 4-page letter to Troschel that contained all sorts of advice, from suggestions on the pickling of salps, medusae, and jellyfish, to prices for barrels, glassware (to be had at the Brothers Greco, which was close to the Hotel du Nord), lodgings, meals, assistance in fishing, including local contacts such as Anastasio Cocco and Lawyer Benoit. He recommended the Lazzaretto area outside the port of Messina for the study of cephalopods, pteropods and heteropods and the pelagic fauna in general, while Naples was the right place for studying polyps, Holothuria, ascidians, annelids, and Mollusca.²²

Rudolph Amandus Philippi (Fig. 15) was born in 1808 in Charlottenburg. After studies in medicine and natural science in Berlin, he lived from September 1830 to April 1832 in Sicily with two friends, mainly to collect molluscs. Four years later he published his standard work "*Enumeratio molluscorum...*" (Philippi 1836). In August 1835, we find him also in Helgoland, where from September on he taught at the professional High-school at Cassel and where he also served as director of the local Society for natural science. Between 1837 and 1839 he returned-

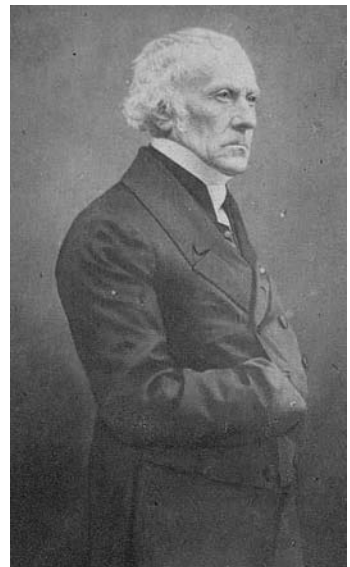


FIGURE 15. Rudolph Amandus Philippi.

for 2½ years to Naples and Sicily, for health reasons. In August 1839 he was nominated corresponding member of the Naples Academy of Sciences — the only one from the group of the German marine biologists considered here. In 1851, Philippi resigned his position at Cassel for political reasons; he emigrated to Chile where he started a second scientific career. In 1904, he died at Santiago at the age of 95.

It is important to stress here that Krohn and Philippi, who met and interacted in Messina and Naples, both played important roles as hosts for their countrymen in southern Italy. Both lived for many years mainly in Italy where they gained experience and established contacts that they could pass on, and both constantly published their results, thus documenting the variety and abundance of research material in the Mediterranean Sea.

7. CONCLUSIONS

The period up to 1870 saw a growing interest in the exploration of marine life. Motivations for seaside studies were various, so was the search for solutions to practical problems. However, during this time, slowly, but constantly, a network of personal and scientific information was accumulated among long and short-term visitors to Italy and also among foreign visitors and local experts and institutions.

Around 1870, study periods of marine life began to turn from individual and, we might add, adventurous explorations into organised research stays. Individual makeshift labs began to be replaced by institutions such as the Stazione Zoologica where technical facilities for developmental, physiological and experimental studies were available.

When in October 1871 the 30-year old *Privatdozent* from Jena, Anton Dohrn (Fig. 16), transferred to Naples and set up at the Palazzo Torlonia (Fig. 17) a small lab with seawater aquaria, he was, in a certain sense, the last of a long line of naturalists who had come to the coasts of the Mediterranean for seaside studies. He could build on the experiences gained by the generation of naturalists that had preceded him. He could also draw from personal experiences, in 1865 at Helgoland with Haeckel, in 1867 and 1868 in Scotland with David Robertson, and during the winter of 1868–69 also in Messina with Nicolai Maclay. When in 1872 Dohrn decided to build the Zoological Station in Naples (Fig. 18) and not in Messina, as originally planned, he was in a way returning to where many of his teachers and colleagues had started their Italian scientific adventure.

The way of doing research in marine biology may have changed, but the attraction of the Mediterranean seems not to have



FIGURE 16. Anton Dohrn about 1871. ASZN.



FIGURE 17. Building on the right with two towers: Palazzo Torlonia where Anton Dohrn lived from 1871 until 1875. In: Groeben 2000: 36.

changed at all. To make a research stay away from one's home lab profitable and also memorable, it always needed and still needs a counterbalancing factor to good working conditions. In the Mediterranean region, this continues to be European history and culture and the beauties of nature right at the front door. And by the end of the Nineteenth Century "tourists in Science" could enjoy their personal mix of work and play at the Stazione Zoologica, this great "Hotel for scientists" as the Italian historian and Philosopher Benedetto Croce labelled it in 1920 (Croce 1920:3).



FIGURE 18. The Zoological Station in 1873. Author's collection.

ABBREVIATIONS

- ASZN Historical Archives of the Stazione Zoologica Anton Dohrn
 BBAW Berlin-Brandenburgische Akademie der Wissenschaften

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NOTES

- ¹ Translation by Eric Blackall (Dougherty 2002, 130).
- ² Mendelssohn-Bartholdy, s.a.; letters from Naples: pp. 137–164, on the Symphony, p. 148.
- ³ Johannes Müller, instead, was so much satisfied with his invention that at a certain point he felt the need to invent something else because the net brought up more organisms already known to him than unknown (Retzius 1900:76).
- ⁴ Dohrn to Haeckel, 5 August 1865, Stettin. ASZN:Bc.110.
- ⁵ Senator Francesco Todaro in (Dohrn 1897:7)
- ⁶ Kowalewsky returned to Naples in 1887 and 1889 to work as guest investigator at the Stazione Zoologica. He also brought his family and could by then afford more luxurious quarters in Villa Amato at Posillipo.
- ⁷ Prof. C. Claus from Göttingen „will stay 6 weeks to work. I got him lodgings at Santa Lucia”, Anton Dohrn told his fiancée Marie de Baranowska, letter, March 1873, Naples. ASZN:Bd.061. Claus 1875; on his stay in Naples: p. 1.
- ⁸ Carlo Gemmellaro, naturalist and vulcanologist, director of the Accademia Gioenia and professor of natural history at the University of Catania. (Sichel 1987)
- ⁹ Carmelo Maravigna, naturalist and mineralogist, professor of chemistry at the University of Catania, working on the vulcanology of Mount Etna. (De Ceglie 2003:43)
- ¹⁰ Physician and professor of pharmacology at Messina, described several new species. (Bruni, s.d.)
- ¹¹ Acknowledgments have to be given to Claude Arnal who has collected an amazing amount of details and information regarding the biography of Jeannette Power. (Arnal 2003; Guiffre 1994)
- ¹² Defined as “Gabbiole alla Power”. There are different measures indicated, although some old measures may not have been translated correctly. In Power 1845:372, cages of 180 × 90 cm (8 × 4 “Spannen”, 1 Spanne = 23 cm) are reported. Owen (1839:103) mentions 8 × 4 palms (61 × 30,5 cm, 1 palm = 7,65 cm), but if “palm = span, then it would be 180 × 90 cm as in the German translation. Fig. 8 shows one identified as 4 × 2 × 1,4m (Guiffre 1994:55).

- ¹³ Müller 1844; based on a report given to the Academy of Sciences at Berlin on December 6, 1841.
- ¹⁴ Reported in De Ceglie 1999:98. Müller based his results on research done of 12 animals at Bohuslän (Sweden) together with Anders Retzius. Specimens received from Costa are not mentioned in the monograph.
- ¹⁵ Koelliker 1899, 12; on Naples and Sicily: 11, 12, 65–83, 152–159. However, Koelliker also mentions that Oronzio Costa and his son and successor Achille (1823–1898; Prof. 1860–98) “kept their distance from their older colleagues, who worked in the same direction, with a tenacity frequently found with Italian scientists” (p. 12).
- ¹⁶ “Von den Naturforschern in Neapel ist Costa allein noch thätig und gegen die Fremden sehr dienstfertig“ [Of the naturalists at Naples only Costa is still active and very helpful towards foreigners.] Krohn to Troschel, Letter and notes, Messina, 1 April 1854. BBAW, NL Troschel 220, ff. 10–15:15.
- ¹⁷ Five letters from Delle Chiaie to Ehrenberg (1836–1855) and two from Ehrenberg to Delle Chiaie (s.a.; 1840) are kept at the BBAW, Nachlass Ehrenberg 312, 659.
- ¹⁸ Having never seen a live animal, he took it for a slug and described it as *Limax lanceolaris* (Pallas 1769–1778, X:24–25).
- ¹⁹ Someone else locates him in Livonia (Cocco 1844).
- ²⁰ Jahn 2000, 879. Krohn died on February 26, 1891 at the age of 87 (Krohn 1891). Not knowing the day of his birth, other sources give 1804 as the year.
- ²¹ In the records of foreigners arriving at Naples he is listed as “Gustavo [*sic!*] Davide Krohn” from Sweden, Physician, lodging at the ‘Locanda di Russia’, arrival date: March 13, 1832. Archivio di Stato, Napoli, Ministero di Polizia, Movimento Stranieri, Fs 2846 (Esteri di passaggio), no. 354.
- ²² August Krohn to Hermann Troschel, notes. 4 pp., n.d. [but 1853]. Berlin, BBAW, Literaturarchiv, Nachlass Troschel 220, n. 6.