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From Nice in 1856: an early illustrated travelogue of Ernst Haeckel

John R. Dolan^{1,2}, Christophe Migon¹, and Markus G. Weinbauer¹

¹Laboratoire de Océanographie de Villefranche-sur-Mer, UMR 7093 CNRS et Sorbonne Université, Station Zoologique, 06230 Villefranche-sur-Mer

²Corresponding author: john.dolan@imev-mer.fr

Abstract

Here are presented two letters by a young Ernst Haeckel, who became a major figure of biology, as well as recognized as a scientific artist, in the late 19th century. The letters, previously available only in German, are given here with his illustrations, in English. They were written when he was a medical student, addressed to his parents, describing his travels and impressions during one of his first voyages abroad. They show Haeckel with a character distinct from his latter years, somewhat insecure, eager to share his experiences with his parents. Haeckel's talent as a storyteller and travel writer were evident early on. During his stay in Nice he saw, for the first time, living specimens of organisms that would later be the subjects of iconic illustrations. In a companion article (Migon et al. 2024), the letters are presented and discussed in French.

Keywords: history of science, scientific and artistic voyages, Alpes Maritimes, Piedmont

Introduction

Ernst Haeckel (1834-1919) was a major, even dominating, scientific figure in his time (Goldschmidt 1956). He was a recognized expert on the anatomy, taxonomy, and development biology of a wide variety of organisms. To Haeckel, we owe the term "ecology", and he gained considerable fame with his controversial (and now discredited) biogenetic law, "ontogeny recapitulates phylogeny". It purported that the series of development stages of organisms reflect the series of ancestral forms. Haeckel was trained as medical doctor, as were many naturalists in his time, but he only briefly practiced as a physician. His early studies on radiolaria, microscopic organisms of the plankton, conducted shortly after passing all the examinations to practice medicine, won him appointment to the University of Jena in 1862, where he remained until his retirement in 1909. For much of his life, Haeckel acted as a fervent advocate, defender, and popularizer of Charles Darwin's theory of evolution. Late in life, he quite successfully brought the beauty of organisms, particularly those of the marine plankton, to the attention of artists and artisans with his "*Art Forms of Nature*", *Kunstformen der Natur*, (Haeckel 1889-1904). Numerous artists, artisans, and architects of the early 20th century are said to have been influenced by Haeckel's 'scientific artwork'. These include René Binet, Hendrick Petrus Berlage, August Endell, Max Ernst, Emile Gallé, Paul Klee, Gustav Klimt, Alfred Kubin, René Lalique, Gabriel von Max, Hermann Obrist, Constant Roux, Louis Tiffany and Henry Van der Velde (Bossi 2021a; Debourdeau 2016; Green 1987; Mann 1990; Williman 2019). In more recent times, Haeckel's plates of medusa and radiolaria from *Art Forms of Nature* were part of a major art exhibition in 2021, "The Origins of the World, The Invention of Nature", shown in both the Musée Orsay in Paris, and the Musée des Beaux-Arts in Montreal (Bossi 2021b, annexe, 'Liste des

Oeuvres'). His reputation outside of Germany considerable suffered damage in 1914 when he abruptly abandoned his pacifist philosophy, and whole-heartedly supported the aggression of the German state in World War One. He was, in many ways, a larger than life personality, known to be arrogant, dismissive of critics, and dogmatic (Anon. 1919).

Unknown to most of us is Ernst Haeckel as a young man, and he had apparently tastes and a character quite unlike of his latter years. He was, virtually, an only child as his only sibling, his brother Carl was 10 years older. According to Pahnke (2018), the young Haeckel was sensitive, and given to hypochondria. His passion, from age 6 to the beginning of his medical studies, was botany. It was only to please his father, who feared botany was unlikely to lead to a stable career, that he pursued medical studies, beginning in April 1852. Haeckel's anxiety at having to abandon botany for medicine, and his talent as an artist, are evident in a drawing he sent with a letter to his parents on January 1st, 1853 (Fig. 1).

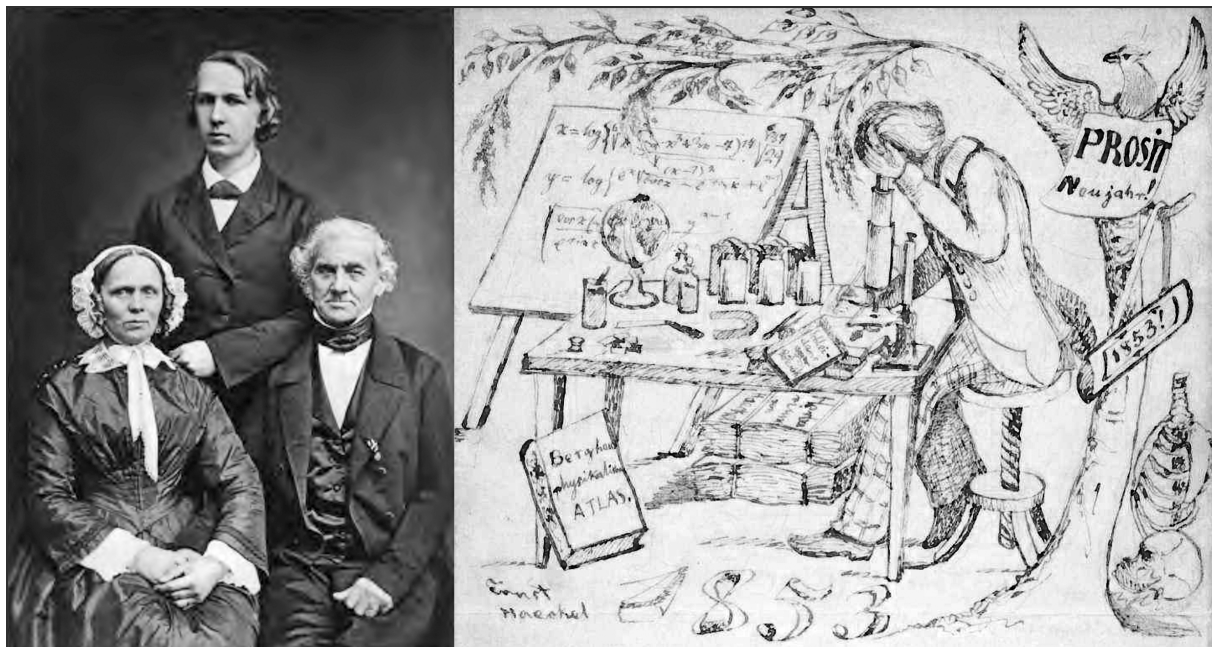


Fig. 1. Left panel: Ernst Haeckel with his mother Charlotte Haeckel, and father Carl Haeckel in 1853; image from Haeckel & Schmidt (1921). Right panel: The sketch by Haeckel accompanying a letter to his parents dated January 1st 1853, just a few months into his medical studies. The sketch depicts Haeckel seeing himself in a dream. He described the scene to his parents thusly "As far as I can tell, medicine is only in a corner, hidden behind the tree. The "golden tree of life" is and remains botany! In front of him on the table is a galvanic cell, a magnet, a pair of tweezers, slides, test tubes, and the equipment common to all natural sciences. In the background on the left is a frightening future perspective, a blackboard on which is written an endless mathematical formula that has yet to be solved...". At his feet are herbarium piles of pressed plants (Pahnke 2019); image from Ernst Haeckel Archives ID 39332.

Here, we present two letters written to his parents a few years later into his medical studies, in late 1856, during a field trip to Nice. We reveal a side of Haeckel that is generally unknown, that of a very talented travel writer, early on. Later he would publish accounts of his travels to Sicily (Haeckel 1860), the Canary Islands (Haeckel 1867), and illustrated accounts of voyages in Ceylon (Haeckel 1882, 1922), and in Java

and Sumatra (Haeckel 1901). To share his experiences with his parents, Haeckel poured out remarkable descriptions of landscapes and peoples. His devotion to botany, is still apparent in his descriptions and lists of plants he collected. He also showed himself to be not yet arrogant, but proud to find acceptance, familiarity, and even appreciation of two of his mentors, Johannes Müller of Berlin, who happened to be in Nice, and Rudolph Kölliker, the organizer of the expedition that brought Haeckel to Nice. Kölliker was a Professor of Anatomy, and traveled to Nice for his studies of fish tissues. He was one of Haeckel's favorite professors at the University of Würzburg. Haeckel was the only student in the party and while in Nice, he hoped to study crustacean tissues for his Dissertation. The other members of the party were Heinrich Müller, another Professor of Anatomy at Würzburg, who worked on cephalopods, and Karl Kupffer, an assistant to a Professor in Dorpat, sent to work on the tissues of marine invertebrates. On the advice of Karl Vogt, to whom Nice and Villefranche were familiar, Kölliker arranged lodgings for the party in waterfront apartments (see Fig. 2), which would be admirably described by Haeckel in one of his letters. They spent nearly four weeks in Nice. Before this trip, Haeckel had only been to the sea once before, in Helgoland, an island off the coast of Germany, in the North Sea, and had apparently traveled little before, according to Heinrich Schmidt's biography of Haeckel (Schmidt 1914). Haeckel's 1856 stay in Nice is mentioned only in passing in biographies of Haeckel, and not given any particular significance (Bölsche & McCabe 1906; Di Gregorio 2005; Richards, 2008). In contrast, Haeckel himself, many years later (Haeckel 1893), credited the stay as a turning point in his career, his first experience seeing living radiolaria, and where he was advised by Johannes Müller to pursue studies of the organisms, which brought him fame at an early age with his first monographic study (Haeckel 1862). During his visit, Haeckel also saw other remarkable organisms of the marine zooplankton, siphonophores, living for the first time, which would, like the radiolaria, be the subject of later important studies (e.g., Haeckel 1887, 1888) and famous illustrations. Haeckel's plates of radiolaria and siphonophores were reproduced a few years ago in the book *Art Forms from the Abyss* (Williams et al. 2015), and recently in an article 'Jewels of Scientific Illustration...' (Dolan 2024).

It is important to note that the letters were written by a young Prussian medical student (Haeckel was 22 years old), for his elderly parents. Some of Haeckel's characterizations of certain peoples may appear surprising today, but were likely common among members of the Prussian professional class in the mid-19th century. Short descriptions of the principal people mentioned in the letters are given following the letters.

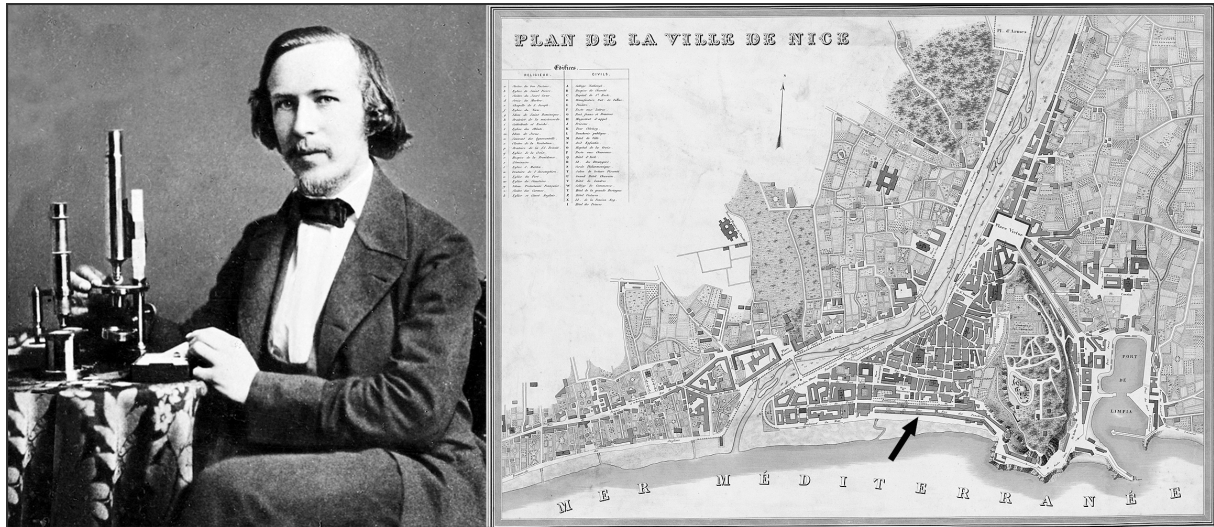


Fig. 2 A portrait of the medical student Ernst Haeckel, *ca.* 1856, with his microscopes (left panel), and an 1856 map of the city of Nice, showing the ideal waterfront location of the lodgings of Kölliker's party (right panel), a few steps from the beach and the fish market, described in some detail in Haeckel's second letter.

Letter 1. Ernst Haeckel to Charlotte and Carl Gottlob Haeckel, Nice, 20–22. September, 1856

Dear parents!

I have been here for three days now and am feeling well and cheerful. The misfortune that accompanied the first part of my journey to Vevey and which, particularly due to bad weather, almost ruined my desire to travel, came to an end in Vevey, from where you will have received my last letter. From then on, a turning point occurred and fine weather and good spirits accompanied me to this point. As I have already written to you, Claparède whose family in Geneva gave me such an extremely friendly welcome, accompanied me to Vevey, where he hoped to speak to Kölliker, but was disappointed by his non-appearance, just as I was. From Vevey, on the morning of September 12, I made a short but very rewarding trip with him to Montreux, the most charming corner of Lake Geneva and one of the most beautiful in Switzerland, whose charms, however, did not unfold in all their glory, although the weather was very nice. Heavy, low-lying clouds were lying on the jagged, snow-covered rock wall of the Dent du Midi (southeast, towards the Valais mountains), and the Jaman in the northeast was also covered in deep snow. In contrast, the rock mass of the Dent d'Oche, towering opposite, above St. Meillerie, stood out quite picturesquely almost vertically from the ultramarine-blue surface of the lake, whose lush, richly cultivated shores presented a delightful picture of flourishing cultural activity, mixed with picturesque mountain landscape background.

At 11 o'clock in the afternoon, after a warm farewell to my excellent Claparède, I got into the interior of the express coach to travel in one go to Arona. The route leads to St. Maurice on the right bank of the Rhone, and from there to Brieg on the left bank, through very varied valley landscapes. Through Montreux, past the Chillon Castle, which stands majestically on a rock in the lake, the path stays on the lovely lakeshore as far as Villeneuve. Then it enters the fertile, richly cultivated Rhone valley, surrounded on both sides by sky-high mountain ranges. Before St. Maurice, a bridge boldly leaping over

rocks leads from the Vaud region into the Valais and, as if in an instant, the whole character of the region changes. There, industry, cleanliness, culture, prosperity, Protestantism; here (in the Valais) dirt, depravity, misery, Catholicism. The valley remains extremely grandiose and picturesque as far as Martigny. On both sides, magnificent bare rock faces, rising abruptly more than thousand feet above the valley floor and forming a colossal amphitheater. Then an area completely destroyed by landslides and mud flows, magnificent waterfalls (Sallenche, Trient), wild gorges, jagged glaciers hanging high above. In Martigny, my company changed. Instead of an extremely friendly North German Hanoverian philistine (merchant) with a very good-natured wife and a nice son, I got 3 Frenchmen (including a disgusting lady) and 2 Russian women in the car, a completely disgusting bunch, whose impudent and boastful behavior I could only counter with stubborn silence and now and then a good German rudeness. Fortunately, I was so tired that despite their incessant chatter, I soon fell asleep, slept through the very boring stretch from Sion and only woke up again the following morning in Brieg.

13/9 Sat. From Brieg to Domo d'Ossola.

Crossing the Simplon. I climbed the summit of the 6578 foot high pass from Brieg in 6 hours and was thus at the summit a good hour earlier than the express car that had left at the same time. Unfortunately, the wonderful view of the Alps of the Bernese Oberland was largely obscured by clouds, although the weather was otherwise quite clear and the surrounding and neighboring mountain areas looked particularly good. The way up on the beautiful, wide country road, which winds its way up over numerous bridges and under galleries, is not particularly special and is far behind the Wormser Joch¹. The southern descent is all the more beautiful, leading down very steeply in numerous bends through an uninterrupted series of magnificent and wild mountain gorges, with magnificent waterfalls, snowfields, glaciers, rock faces, forest ravines, etc.

Halfway up the mountain I met a doctor from Würzburg, Wilkens from Hamburg. At the summit I stopped off at the hospice run by monks where I saw two magnificent large dogs. I also found a number of beautiful, rare alpine plants in bloom: *Senecio incanus*, *Chenopodium botrys*, *Achillea tomentosa*, *Centaurea nervosa*, *Campanula alpina* etc. In Isella we were held up for an hour by the Sardinian pass and toll inspection, then we drove into la bella Italia, which was already clearly evident in all its peculiarities on the short stretch to Domo d'Ossola. We stayed for two hours and were then packed into a cage-like Sardinian mail coach, nine of us, in which there was legally barely enough room for six passengers who were only of a moderate size. The compartment was so narrow that the position once taken up had to be maintained irrevocably for the entire 7-hour journey and changing the painful position was out of the question. The cart also had the pleasant feature that the roof was completely riddled with holes in several places and the windows did not close properly, so that when a heavy thunderstorm broke out shortly after our departure, the rain streams penetrated the interior in thick jets quite comfortably, and soaked some of us so thoroughly that we got out in Arona as if we had just been pulled out of the water. The desperate situation, which paralyzed all my limbs, could have completely destroyed my good spirits if the French had not turned the tragedy into something comical and amusing by their incessant cursing and raging and the Russians by calling on all the saints.

The heavy rain continued the next morning, Sunday 14/9, so that I could see neither Lago Maggiore nor Arona and was lucky to get a reasonably sheltered corner seat in one of the windowless, open third class carriages, which were also systematically 'watered'. The area offered little of note along the entire route from Arona (5 a.m.) to Turin (9 a.m.). Mostly nothing but extensive cornfields, interspersed with scattered trees and surrounded by hedges, and here and there also garlands of vines. The track continues completely smoothly on a horizontal plane to Turin, which lies at the foot of a green, undulating chain of hills bordering this area to the south.

On the whole, I liked Turin very much, which is largely due to the extraordinarily friendly reception I received by Dr. Filippo de Filippi, through Virchow and Kölliker's recommendation of me, to the very kind and friendly professor of anatomy. But the city itself, although very new and modern, is still quite interesting, especially because of its unique, charming location, and also because of its very peculiar folk life. After I checked into the Hôtel de la Ville, I immediately went for a walk through the main streets of the city to get my bearings. The rain clouds had meanwhile disappeared, and the bright Sunday sun had attracted a large, colorful crowd onto the streets, so there was no lack of material for comparative folk observation. On the whole, the Sardinians² are a very peculiar people, very different from the other Italians, especially the Lombards. They are more serious, more sedate, more choleric, much less loud, lively and active than the latter. Even in the densest throng of the busiest streets, things were very quiet and sedate compared to Milan and Venice. The men are on the whole handsome, strong, although not tall people. In particular, the soldiers, who enlivened the streets of Turin in large numbers in all branches of the military and were mostly decorated with the English Crimean medal, looked very warlike and manly. The best-looking fellows seemed to be the famous running huntsmen, lively people in long, folded tunics, wide breeches and a small, round, wide-brimmed hat with a long plume. The cavalrymen also looked very stately, in short blue jackets, with white helmets bordered with bearskin, above which protruded a boldly curved, gilded crest. The artillerymen wore long black coats and French caps, like the infantrymen. The prettier the men, the uglier the women seemed in general, among whom we have not yet seen a pretty face, dirty people with coarse features, and earthy complexions. Of all the people, the beggar boys have given me the most fun so far, an inexhaustibly funny bunch, on whom Morillo could have made the most beautiful studies.

After strolling along the splendid main street of Turin, Via di Po, and looking at the cathedral of the Dukes of Savoy, with their beautiful white marble monuments, as well as the royal palace, I visited the famous "*Armeria reale*" (the royal armory), a very rich collection of beautiful, old weapons and similar historical curiosities. Then I listened to a pretty military band in the palace garden, at the end of which a great battle scene from the Crimea was played, during which a great noise was let off by burning a large number of firecrackers and matches in time with the music. At 2 o'clock I went to Professor de Filippi, who received me very kindly, gave me my bearings, and then showed me around his beautiful zoological museum, where there is a large selection of excellently stuffed mammals, as well as many fine wax specimens and very beautiful fossils. Among the fossils, three pieces in particular are very noteworthy: *Megatherium* and *Glyptodon* from La Plata, and *Mastodon angustidens* from the Turin area. The collection has few anatomical specimens. The latter includes a very beautifully arranged whale skeleton from a *Balaenoptera* that was stranded near Nice. At 5 o'clock, the usual lunch hour, I

had a completely Italian but very tasty and plentiful lunch at the hotel's table d'hôte, where I got to know a lot of peculiar dishes. During the whole meal, a hollow, very tasty bread, grissini, baked in the shape of willow branches, is nibbled in large quantities. In the evening I strolled around the colorfully bustling city for a long time, sipped a delicious sorbet (ice cream) in one of the splendid cafes (which are said to be the most brilliant in Italy) and then wanted to rest a little at home so that I could go to the train station in the evening and see Kölliker. But I was so tired that I fell fast asleep and only woke up when Kölliker and de Filippi came into my room at 9 p.m. Kölliker had also had a lot of bad weather in Switzerland and had now travelled directly over the Gotthard Pass. It was immediately decided to stay in Turin for another two days. The next morning I woke up at 5 a.m. and immediately took advantage of the very clear sky to get an overview of Turin's situation. I crossed the Po Bridge to the right bank of the Po, and then climbed a small slope to the Capuchin monastery, which is situated on an isolated hill. From the convent and the gallery on it I enjoyed a magnificent view. I was delighted by the magnificent panorama, but it was only an imperfect fragment of the incomparable panoramic view that we were to have the following morning from the Superga. The Chiesa di S. Margaretha, which is $\frac{3}{4}$ hour higher up, also only offered partial fragments of this view. But the whole thing, especially the magnificently stretched out, very clear chain of the Alps, surrounding the city in a semicircle, was so magnificent that it took several hours for me to tear myself away. From 10 a.m. to 12 p.m. we, that is, Kölliker and I, were with Filippi. Then we visited the very rich royal painting collection, which contains many very good pieces, especially by Titian, van Dyk, Rembrandt, etc. In the afternoon we were back at Filippi's, where we met the professor of chemistry, Piria. Then we made the acquaintance of a young histologist, Dr. Gastaldi, who showed us preparations of the nerve endings in the nasal mucous membrane. With the latter we went to a restaurant at 5 o'clock, where Filippi had arranged a splendid dinner for us in the most sumptuous Turin style. We dined very happily until after 6 o'clock, and then went to the *Giardini pubblici*, the very popular public promenades, which are animated in the evenings by music, puppet theater, etc. The evening was perfectly spent with sorbet and fiery Italian wine.

The next morning, Tuesday 16/9, Kölliker and I were up at 5 a.m. Since the weather was glorious, we set off from the Po Bridge on a small boat down the Po to the Madonna Pimmelone, and from there climbed up to the Superga in an hour, mostly on a fairly shady, not very interesting path. The burial church of the kings of Sardinia, a handsome domed building, on the last (easternmost) and highest (2400' above sea level) mountain of the green chain of hills that stretches south of Turin on the right bank of the Po, and at the foot of which the large residential city lies directly on the edge of the plain. The panoramic view from the top small gallery, near the top of the dome, is absolutely delightfully magnificent and is one of the most beautiful I have ever seen. Directly at the foot of the mountain the winding Po meanders along its sandy bed. Above it stretches the broad, wide plain, the most fertile flatland, adorned with countless villas, villages, towns, towers, etc. in the most fertile cornfields and vineyards. The entire northern horizon is closed off in a beautiful semicircle by the Alpine chain, which is extremely magnificent from here, seemingly so close that you could reach it in a few hours. In the far west rises the most beautiful peak that I have ever seen, the slender pyramid-shaped Monte Viso. In the east, the sea of snow of the magnificent Monte Rosa rises as a counter-pillar, to which the Graubünden Alps, Bernina etc. are attached on the sides and in the blue distance to the east the Tyrolean mountains, Ortler, etc. To the west of Monte

Rosa the Matterhorn (Mont Servin) rises into the blue air as a small, pointed peak. Next to it are the Valais Alps. Unfortunately, Mont Blanc itself is hidden by high foothills. This makes the snow and ice fields of the Great St. Bernard, Mont Cenis, etc. all the more magnificent. I have never seen such a delightful Alpine panorama. The view from the Milan Cathedral is nothing compared to it.

The view to the south is completely different, where a veritable sea of undulating green hills covered in dense forest, adorned with a mass of small white villas, chapels and villages, stretches out. In the west, the transition from there to the Alps is closed by the Maritime Alps, below which the Col di Tenda is visible. To the east, the fertile, flowering plain disappears into the blue distance. In the most charming contrast to this magnificent surroundings, the splendid capital nestles at the northern foot of the green sea of hills, on the left bank of the Po, crossing the river on two bridges. It is a very regular oblong square formed by long, parallel and right-angled, wide streets, with masses of magnificent, six-story, brand new houses (only a few are still old), among which numerous palaces, churches, towers, etc. stand out. The flat roofs and long chimneys are very reminiscent of Italy. All around the white, shining sea of houses is the friendliest green surroundings. In short, the whole thing was so charming that after hours of enjoyment I was extremely reluctant to follow Kölliker's repeated admonition to leave and would have gladly saved myself a visit to the boring family crypt decorated with ornate marble monuments. At 12 o'clock we were back in Turin. We spent the afternoon with Filippi and Gastaldi again, and had another sumptuous dinner. Filippi is a very nice person, a very German person, despite his Italian name. He also loves Germany very much. At 6 p.m. we left Turin by train for Cuneo, at the foot of the Maritime Alps, where we arrived at 9 p.m. The route is nothing special, but it was quite pretty in the most wonderful full moonlight and seemed very beautiful to us in our very contented mood.

Wed 17/9 from Cuneo to Nice over the Col di Tenda.

One of the greatest tours I have ever done and which we flatlanders who do not know mules would consider impossible. In Cuneo, we boarded the Corriere di Nizza, a small, narrow mountain mail coach, in which we were fortunate to have been given compartment seats, which we shared with a third person, a very nice Dutch lawyer, Lahm from Utrecht. The cart was pulled by 7 mules, which were harnessed in pairs, one behind the other. Alongside each side ran an indestructible mule driver, constantly banging and screaming, cursing, admonishing, beating, jumping and howling. From here on, the road to Nice leads constantly through extremely desolate, wild, desolate, bare, rocky mountain country; you cross no less than three very large mountain ridges (from 4 to 6000 feet), the most important of which, the more than 6000 foot high Col di Tenda, whose summit we reached early in the morning, rises directly above Cuneo. With the exception of the last two hours before Nice, where the landscape unfolds all the luxuriant charms of Italian splendor and southern vegetation, the character of the landscape remains the same everywhere: enormous, white-grey or yellowish limestone masses rising very steeply from narrow gorges and valleys, with almost no trace of springs and only extremely poor and miserable, but very characteristic desert vegetation on the completely parched ground. Dry, grey-green, prickly, hairy and felty subshrubs, mostly belonging to the composite family, form the main mass and are vividly reminiscent of the very same steppe vegetation of the Spanish and North African plateaus. No insect, no bird animates this rigid, dead, desolate rock world, where no

moss can find space or moisture to exist. The highway that leads over these three passes (Col di Tenda, the northernmost and highest, then Col di Braus and finally the southern and lowest (about 4000 feet) Col di Bruas) is quite unique³.

In hundreds of the boldest and steepest, spiral-shaped curves, the broad road, without any walls, railings or breastworks, without galleries, barriers, or other protective structures common on difficult mountain passes, rises so incredibly abruptly and steeply on each side of the three mountains that, in our opinion, it would be impossible to drive across. But what is actually impossible for horses is achieved by the excellent mules with their extremely sure and firm stride, their tough, sinewy strength and their indestructible endurance, qualities which we had the opportunity to admire in their greatest extent here and thus also learned to really appreciate the value of these invaluable mountain animals. Both the ascent and the descent were more or less the same on all three passes, but so that the Col di Tenda posed the greatest danger and was nevertheless crossed with the greatest speed and an almost punishable recklessness. We went uphill on foot for some stretches and collected rich treasures of the very interesting flora. But here too the mules went so quickly, mostly at a trot, so that we could only keep up with them by cutting across large curves. But the descent was so crazy that we really lost our hearing and sight, and Kölliker, who was sitting on the corner, was always ready to jump out. As if it were a race on the flattest racetrack, the mules raced at full gallop or trot down the countless, strongly curved and steep spiral bends, so that the carriage was half in the air and at every bend we felt as if we were flying straight into the depths of the terrible abyss. I would not recommend this route to a lady under any circumstances and I was really amazed that we had successfully covered this most amazing of all roads, which leaves all the well-known Alpine roads far behind in terms of danger, without any accidents or delays. At 4 o'clock in the afternoon we arrived safely in Nice.

Nice 22/9

I left the letter lying around for two days in the hope of being able to tell you something about my stay here so far. Unfortunately, I now see that I will hardly be able to write a more detailed description so quickly due to the lack of time, so I am sending the lines inside, which tell you about my journey, while saving the rest for the next letter. The most important thing is that I am well.

We live together very happily and contentedly: Kölliker, Heinrich Müller, Dr. Kupfer from Dorpat (Bidder's assistant), and me. Johannes Müller and his family are also here, and almost every evening we walk up and down the promenade with him for a few hours, chatting very pleasantly and comfortably. The seaside resort is absolutely delightful and we don't miss a single day. There was a shortage of magnificent sea creatures in the first few days, when we didn't know where to find them, but now there is an abundance of them. Today, for example, we had magnificent chains of *Salpa maxima*⁴, large holothurians and sea urchins, *Pelagia noctiluca*⁴, pyrosomes⁴, a mass of smaller crustaceans, beautiful fish, etc., so that you don't know where to start. Our apartment is lovely, right on the beach, with the most unobstructed view over the whole bay of Nice. We work hard all day. We swim in the evening. Then we chat. The only thing I miss, which also bothers me a lot, is that I haven't received any news from you. I have been longing to go to the post office every day, but always in vain. Perhaps letters from you are already here and perhaps the only thing that is preventing me from getting them

is the unclearly written address. In the next letter, have Theodor or someone else write the address very clearly:

Mr. Haeckel, medical student from Berlin

Postal Address: Mr. Vial

Réсторант chez les Dames, au Cours No. 32.

in Nice, Kingdom of Sardinia

Warmest greetings to Carl and all relatives and friends. Write very soon! Yours Ernst!

I have just received the letter from you in Berlin. 22/9

Letter 2. Ernst Haeckel to Charlotte and Carl Gottlob Haeckel, Nice, 1-5. October, 1856



Fig. 3. "Nice, *Vue Prise du Col de Villefranche*", the first postcard (lithograph) included with the letter.

Nice, Wednesday 1/10 1856.

Dear parents!

Today 14 days, half of my stay in Nice, are over, and it is time for me to finally tell you something about my life here. You can hopefully forgive me for a detailed written description of it, as I will soon be able to tell you everything much better and more clearly orally. I can also only tell you mainly about our zoological and anatomical studies, as I have unfortunately only seen very little of the rest, which would be of much more interest to you, namely Nice itself and its wonderful surroundings. This is largely the

fault of the persistent bad weather, which was particularly awful in the last 8 days. The first few days of our stay were very nice. Unfortunately, we neglected to use it for excursions into the surrounding area, as the mass of interesting sea creatures that were new to us absorbed all our interest. So it came to be that we sat behind the microscope non-stop from morning to evening and only went for a walk in the surrounding area twice, which was just enough to stimulate my wanderlust and desire to wander to the highest degree, so that I have firmly resolved to enjoy the wonderful area more from now on.

As I wrote to you in the last letter, together we form a four-leaf zoological clover that spends pretty much the whole day together: Prof. Kölliker, who carries out comparative histological studies, mostly on fish, in particular on the pore channels of the cell walls, Prof. Heinrich Müller from Würzburg, who deals exclusively with the fine anatomy of cephalopods (squid) and (if there are any) also of salps, and thirdly Dr. med. Kupfer from Dorpat (assistant to Bidder), who wants to learn more about sea creatures in general and is also interested in the histology of holothuria, and finally my dear person, who has set himself the task of studying the microscopic anatomy of crabs and has wasted a lot of time on it in vain. We all live in one street, the Cité du Parc, the row of houses that stretches along the bay, very close to each other, separated by only one house each, and our windows all look directly out onto the sea, from which we are only separated by a bare beach about 20-30 paces wide. My little room is very small, so I could barely fit my belongings in it, as the following floor plan and description of this classic locality will show:

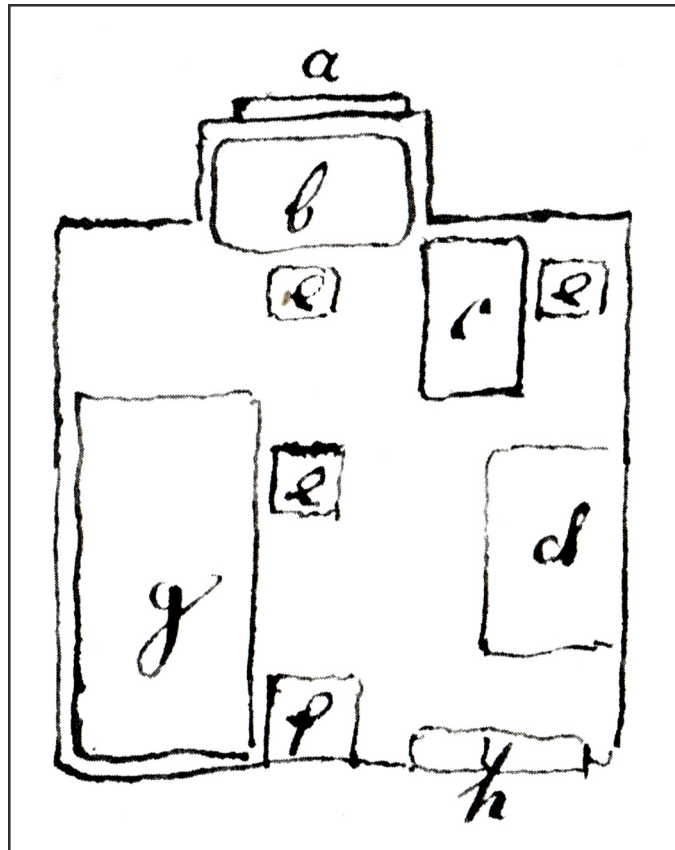


Fig. 4. Haeckel's sketch of the floor plan of his apartment in Nice, explained below in his words.

(a) is the large, only window, in the niche of which stands a table **(b)** with a microscope and glasses, cutlery and other instruments at which I work all day long and, as I always have the window open, I can also breathe in the freshest, purest sea air. Next to it is **(c)** another table, which is used mainly for dissecting the beasts that fall victim to my zoological desire to murder, **(d)** is the chest of drawers, whose drawers house my most essential belongings and on whose marble top books, glasses, bottles, instruments, plants, animals and all sorts of other things lie in a colorful jumble in the most beautiful disorder. **(h)** is the door that leads me down a small staircase into the Via del Parco. **(g)** is a huge four-poster bed, with curtains all around to protect against the very annoying mosquitoes. A small washstand **(f)** and 3 chairs **(e)** complete the furniture, which is in itself very simple, but is given a very charming appearance by the mass of various natural objects lying on top of and through each other. In particular, 2 long sea crabs (*Maja*) which are lying on the floor to dry along with many other smaller crustaceans and which spread a very intense smell throughout the whole house (to the horror of my hysterical neighbor, a grayish, dry lady) give the genre picture a decidedly typical character. In any case, one could not expect anything better from the workshop of a naturalist studying sea creatures in such a confined space.

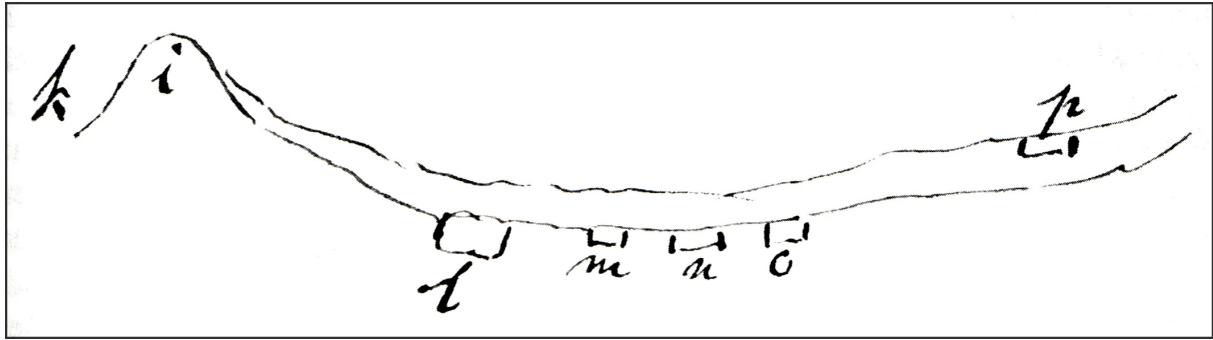


Fig. 5. Haeckel's map of the waterfront in Nice showing the location of his apartment. From left to right: **k** the harbor of Nice, **i** the chateau fort of Nice on the rocky outcrop separating the bay from the harbor, **l** the fish market, **m** Haeckel's apartment, **n** Kölliker and Müller's apartment, **o** Kupfer's apartment, **p** the area where the men swam regularly.

To give you a better idea of the apartment's favorable location, I have also included a map of the immediate surroundings: (i) is the rocky outcrop that separates the bay from the harbor (k), (l) the fish market, (m) the apartment number 8 mine, (n), the apartment number 12 Kölliker's and Müller's, (o), the apartment number 14 Kupfer's apartment, (p) the bathing area. Between the latter and the fort (i) lies the fishermen's beach, where their boats are lined up in rows. Apart from that, you can hardly see a ship in the whole of the large bay, apart from the passing sails on the horizon. Even in the harbor you can see few ships, and they are mostly small, insignificant things, two-masters at most. In general, sea traffic seems very light, especially for such a large city.

My daily routine, which I have followed very regularly up to now, is as follows: I get up at 6 o'clock and, weather permitting, usually rush straight into the sea, which is just a few steps away. A sea bath like this, so fresh and cool after a hot bed in the dank room, is quite delicious and I prefer it to an evening swim. Then I stroll along the beach for a bit and buy the material for the day's research at the fish market, mostly crabs, particularly the *Palinurus quadricornis*, which is particularly dear to my heart, as well as various species of shrimp, beautiful isopods (*Cymothoen*), etc. On the whole, the fish market is not very rich at the moment compared to the abundant local marine fauna. In general, this is not the best time of year for our research, which is from December to March. For example, I have not yet seen siphonophores⁴, pteropods⁴ and other delicate, rare things that I had been particularly interested in. The fish market supplied almost only fish and crabs, and only a moderate selection. However, of the former, rays and sharks are well represented. *Torpedo*, *Chimaera*, *Squatina*, *Scymnus Lichia*, *Myliobates Aquila*, etc. are not rare. In addition, there is a large selection of labroids, the parrots of fish, with the most magnificent, bright colors. The most common, most frequently eaten, and very tasty is the *Mugil cephalus*, called Longo or Mugo here. Haddock (Gadoids) and plaice (*Pleuronectes*) are rare. If we were to restrict ourselves to these common products of the fish market, the material would certainly be rather poor. However, we have also trained several fishermen who bring us everything of interest. However, we regularly visit the fish market early. From here, usually at 8 o'clock, we go to the Café Royal and drink our Chocolata à la Milanèse, from where we immediately get to work. If the work is very interesting and there is plenty of material, we usually stay there uninterrupted until 5 or 5:30; otherwise, at 12 o'clock, we have a very frugal midday meal at Mr. Vial's, the

restaurant directly opposite us, which is also our host. Usually just macaroni with a little sour red wine from Nice, and often fish too.

At 5:30 (17:30), all four of us regularly go swimming together, a major pleasure of every day. With the exception of a few eccentric Englishmen, we are the only people in the whole of great Nice who still swim. Although the water is still very warm, certainly an average of 15°, it is much too cold for the Italians, and the fact that we are now swimming so well is such an unheard of thing that the whole Quai du Midi is usually full of spectators. The bathing is quite delicious, the waves are mostly quite strong up to now. But it is not nearly as strong as in Helgoland (which is admittedly much colder (constantly 11°).) At least it does not affect me in the slightest, although I often bathe twice a day, always for 10-15 minutes, whereas the short bath in Helgoland completely ruined me. Of course, it is also possible that I have become so much stronger since then. After swimming, we take a short walk along the beach and watch the wonderful, ever-changing play of the waves, which we sometimes cannot get enough of for hours, especially the raging surf that has undermined the rocks below the castle and, in strong winds, hurls up white clouds of foam as high as houses with a mighty thunder. When it has become completely dark, we have our main meal at Mr. Vial's at 7 p.m., after which we either go to the Café Royal and play a game of chess or stroll up and down the promenade (au Cours) for an hour or two and listen to the military band. Until the end of last week, we regularly met Johannes Müller here with his wife and daughter, with whom we then chatted for a couple of hours.

However, they have disappeared without a trace for several days. At 9 o'clock our day's work is concluded with a delicious sorbet, a very large and inexpensive portion of excellent fruit ice cream, after which we go to bed, quite tired and sleepy, and enjoy a wonderful sleep until the next morning, unless we are woken up now and then by the infamous mosquitoes, which, despite the nightly hunt, still hide in the pleated curtains of the four-poster bed and do us miserable damage with their poisonous bite. I was so badly injured by them the very first night that my face, arms and hands were completely covered with thick red welts that were very painful and have not completely disappeared even now. Apart from this plague and a few other human parasitic insects, which are found in large numbers and assorted everywhere in bed, living room, inn, etc. and seem to be particularly fond of the sweet German blood, my corpse is in exceptionally good condition, as is to be expected from the delicious seaside resort and the equally wonderful sea air. But mentally, too, I am fresher and more alert than I have been all summer. I get on very well with my three companions, who are in fact extremely friendly and kind to me, much more so than I expected (especially Kölliker), and we are as happy, cheerful and merry every hour we are together as one can be. I treat Kölliker and Müller just like Beckmann and Call, and generally like my best friends in Würzburg, and we are as unashamedly intimate with each other as if we had been together for years.

Furthermore, I give them, especially Kölliker, so much pleasure with various great ideas etc., in which I am sometimes very productive, that Kölliker always calls me the "priceless Haeckel" and assures me that I would be worth the trip to Nice alone. Actually, he thinks, you should let me go to Paris with him now, to show myself there for money. Especially in the evenings and when we are bathing, we are so merry and cheerful that we can't stop laughing for hours, and that is quite important given the long evenings that

are now. For my part, I have also grown fond of Kölliker here. He is basically a very good and loyal German soul, and the many faults that people always say he has are not nearly as bad and are simply derived from his main fault, a great love of money, which is not excessive either. Heinrich Müller is a very good and nice person, just a little philistine, but otherwise very amiable. I get on very well with Kupfer, although he is very pedantic, phlegmatic, cautious and composed, and in other respects very different from me. In any case, this constant, lovely German company contributes a great deal to making my stay here extremely pleasant. Without them, the leisure hours not filled with scientific research, especially in the evenings, would be quite terrible. The great deficiency caused by my ignorance of the French and Italian languages is also only very slightly noticeable to me, although always to the extent that I have firmly resolved to study the modern languages seriously again after my return.



Fig. 6. "Nice, Quai du Midi", the second postcard (lithograph) included with the letter. The viewpoint shown in the foreground is that where Haeckel said that people would stop to watch his party swimming in the sea in October.

Nice. Sunday 5/10 56.

The beautiful days that put an end to the miserable rainy weather and Sirocco storm on October 2nd allowed us to go on a few excursions yesterday and the day before, so that I have only got around to finishing the letter today. But I can also tell you a few things about the area around Nice, of which I have now at least gained a basic overview. As far as the country as a whole is concerned, namely this entire stretch of coast of the Mediterranean, as far as I have seen it so far, it cannot be called beautiful in general by our standards. Right up to the sea there is a chain of mountains or at least very impressive hills that belong to the southern slopes of the Maritime Alps. They are almost entirely steep, jagged limestone cliffs, which with their white-grey bare peaks protrude,

dry and bare, into the blue sky. The vegetation is indeed very interesting for the botanist, a very southern flora of evergreen shrubs, namely very beautiful composites and labiates, but otherwise very unsatisfactory from an aesthetic point of view, monotonous, dry, arid, and poor and sparse due to the great lack of water and the lack of humus. Forest only rarely covers the foot of these desolate rocky mountains and even then it is mostly just the desolate grey-green of the silver-leaved olives with their melancholy, twisted black wood. The more desolate and sad the whole hilly country of the desolate coast appears in general, the more charming and lovely the oasis appears in the middle of this desert, in the center of which lies Nice, surrounded by the following features:

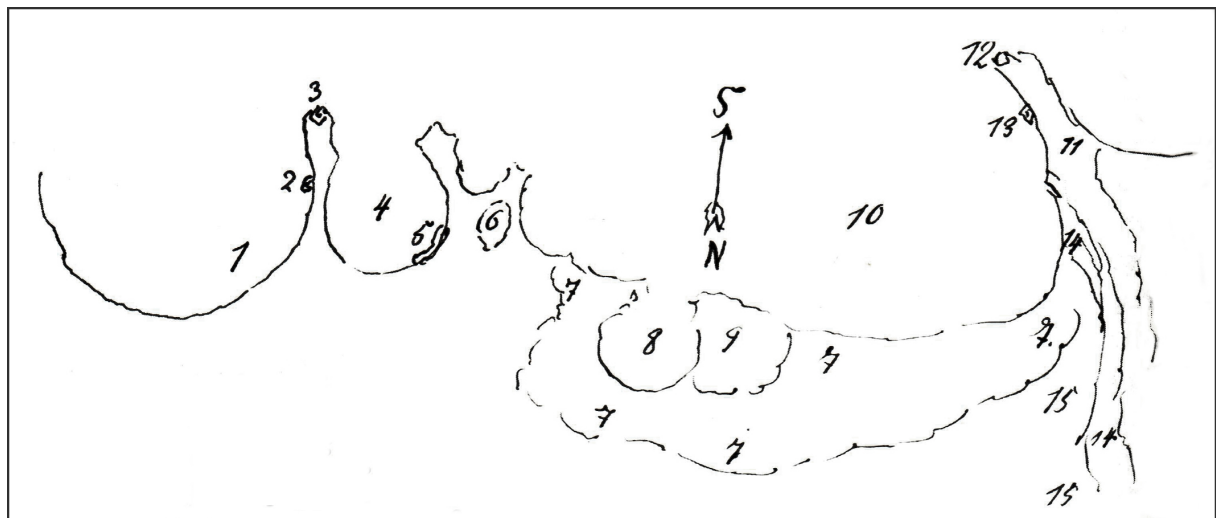


Fig. 7. Haeckel's sketch of the region of Nice. From left to right: **1** the Bay of St. Jean, **2** the village of St. Jean, **3** the lighthouse of Villefranche on the Cap Ferrat, **4** the Bay of Villefranche, **5** the village of Villefranche, **6** the castle fort of Mount Alban, **7** the city of Nice, **8** the port of Nice, **9** the Castle Hill, **10** the Bay of Nice, **11** the headland of Antibes, **12** the lighthouse of Antibes, **13** the city of Antibes, **14** the river Var, **15** the Bellet Hills.

The wild mountain river Var (**14**), which runs straight south and separates the two kingdoms of France and Sardinia, flows into the Mediterranean a few hours west of Nice. It is surrounded on both sides by high hills, to the west by the bare, desolate, naked mountains of Provence, and to the east by a green, forest-covered line of hills (**15**) which rises from the sea in a wide arc around Nice to the northwest, and together with a series of higher, bare limestone mountains to the north and east (among them the high, white Monte Calvo stands out above all) forms a semicircle in which, protected from the north and open to the south, the wide green valley is embedded, the southern edge of which is bordered by Nice.

What gives this wide valley its main charm and has probably also mainly given it its reputation is the lush picture of the most flourishing fertility which its green terrain presents in stark contrast to the deserted limestone rocks all around. The whole valley appears as one big Hesperides garden, in whose flowering, rich area chestnuts, date palms, cypresses, oranges, lemons, pomegranates, laurels, carob trees, mulberry plantations, vineyards etc., etc., in short all the magnificent evergreen trees of the southern flora, whose name alone conjures up a half-paradise in the minds of northern Germans, grow in luxuriant abundance. But what gives the whole picture its own

specific charm is the large, shining city on the seashore, built almost entirely of 6-story, palace-like houses in the latest style, and above all the endless herd of many thousands of friendly, white houses, villas and country estates, which are scattered in the most charming groupings everywhere in the ground and on the walls of the wide green garden. The wonderful evening on which I first saw this unique landscape from Mont Alban will remain unforgettable to me and will often bring the whole paradise of Nice to mind.

Mont Alban (6) is the castle fort on the top of the ridge which juts out into the sea as a sharp rocky peak, separating the town (7) from Villa Franca. The latter (5) is a small Italian village with a fortified castle and the arsenal harbour, situated on a charming, completely enclosed bay (4), which is the Elysium of zoologists from December to March, but has now yielded little in the way of the unfavourable season. To the east it is enclosed by a narrow headland, on the foremost point of which is the lighthouse of Villa Franca (3), on the eastern edge of which lies the small fishing village of St. Jean (2), and to the east a new large charming bay adjoins, on the northern shore of which the Corniche or Riviera Ponente stretches out in the boldest curves on huge limestone cliffs directly by the sea, the great artificial road of European fame that Napoleon had built from Nice to Genoa. All of these wonderful attractions can be seen at a glance if you stand on the heights of Mont Alban, the highest point between Nice and Villa Franca, the vantage point that is only surpassed in Europe by Naples: to the south the divine deep blue Mediterranean with its two large bays, west of Nice, east of St. Jean, in between the small bay of Villa Franca. In the north, a magnificent, bare limestone mountain world, rugged, desolate, grey-white peaks that plunge steeply into the sea in the east and stretch out the narrow spur, on whose peak the lighthouse of Villa Franca stands enthroned. In the immediate foreground, grey olive groves. In contrast, what a contrast the view to the west into the most charming green sea of foliage, interspersed with many thousands of white houses, wreathed by the large, shining city on the seashore, towered over by the proud castle! And then in the far west, the picturesque blue mountain range of Provence, in front of whose next row of hills the narrow headland of Antibes (11) stretches out far to the south, with the shimmering, elongated little town on its eastern shore, and the tall, far-reaching lighthouse (12) on its peak.

It would be futile to try to give you a clearer picture of this single image in writing. Perhaps the cover picture above the first and third sheets of paper will help you understand it a little. For the rest, I will leave you to the oral story. It was three days ago when we enjoyed this divine spectacle for the first time on a glorious evening, at the most glorious sunset. I was sorry I had not climbed up earlier. The first time we were in Villa Franca, on the very first day of our stay, we made the trip there and back by water. The only other excursion we made in the first 14 days was to the low castle (9) by the harbor, from where you can enjoy a pretty nice view, but limited to the bay below Nice itself. The day before yesterday we took advantage of the glorious weather for a longer excursion in the opposite direction. We went into the green mountains of Bellet, the chain of hills (15) on this side of the border river Var (14). On a shady but very rocky and rather difficult path, mostly through vineyards, olive and pine forests, we climbed up to the church of Bellet in two hours, from whose tower we enjoyed a very peculiar view, in particular a very remarkable view deep to the north into the innermost cleft of the wild, bare limestone mountains, with grotesque, fantastic rock formations. To the east, a ridge running down from Monte Calvo blocked our view of the Nice basin. The

view to the west into Provence was all the more beautiful: a picturesque, wild mountain country, here and there with friendly green spots and small villages, in particular a very picturesque mountain town, Saint Jeannet, perched on the embankment around a rocky colossus falling vertically to the south. To the south, the blue sea shimmered far away in the sun, with a large, wide, low island behind Antibes⁵. To the east, the mountain on which we stood fell extremely steeply into an extremely narrow, rocky valley with dark, rugged walls.

The village priest advised us to return through this ravine. We met this worthy fellow with his flock on his property, commanding the work in the fields, one of the most classic, typical figures I have ever seen. A powerful, sturdy, stocky, extremely well-fed, but at the same time Herculean-muscular old man of about 70 years. Black and white curly hair and the remains of an unshaven beard, with a black snuff filter in the groove of his upper lip. A yellowed tie with a priest's smock hung around his thick, plump neck. The bald head of the colossal, square Roman skull was covered by a black velvet cap. His feet were simply booted with laced sandals. The rest of his clothing consisted of a single wide, folded toga, in which he had wrapped himself in a most picturesque way with the dignity of a Roman senator and with genuine artistic taste. He knew how to cover up the lack of a shirt, trousers and other items of clothing so skillfully that only in the heat of his speech did the naked figure of Adam peek through now and then. The old man's speeches, who only spoke in genuine Provencal patois, were so extremely naively original that we had a long conversation with him. It was clear from everything that he was by no means one of the ascetic pietists, but enjoyed his life and was probably the father of his congregation in more than a figurative sense. With a glass of wine in his hand and a girl in his arms, the old priest would have produced a highly characteristic Dutch genre picture. What a pity we didn't have a Rembrandt here! *Saltando al pede* juvenile, he said (jumping with our young feet), we would have a wonderful way back through the valley, despite the *molta aqua* (lots of water). On this recommendation we then climbed through his magnificent garden, in which laurels, myrtles, strawberry trees and pomegranates were magnificently displayed, down the extremely steep valley wall to the bottom of the valley, but were not a little surprised to find no trace of a path here, but only a stony riverbed about 20 feet wide, on both sides of which the valley wall rose up extraordinarily steeply as a bare slab of rock. We were forced to walk for about 2 hours along this riverbed to where it flows into the sea, to the great chagrin of my companions as well as to my greatest joy. The path through these streams was not very comfortable, as we had to jump over or wade through the wild mountain stream, which constantly zigzagged across the gravelly riverbed, every five minutes, as it was impossible to avoid it due to the vertical rock faces. But I had a lot of fun jumping through the water, in which we kept falling into it, and the vegetation on the damp, shady rock faces was so lush and splendidly southern in abundance that I completely forgot the pain of my feet being scratched by the sharp rocks. I also forgot about the grass, bushes and foliage, and finally about the magnificent Venus hair (*Capillus veneris*), an extremely delicate, charming fern, which grew luxuriantly everywhere, on the dark, dripping rock faces. It was already dark when we reached the sea, but the evening was so beautiful that after our return to Nice at 8 o'clock we went to the beach and took a splendid swim in the crystal-clear sea under the most beautiful starlight (the moon, now new, had already set). A really delicious party!

Today, on a beautiful Sunday morning, we were again in the lovely bay of Villa Franca with V erany's dragnet and his fisherman Guacchino, catching a lot of beautiful holothuria, orange-red starfish, pearl mussels (*Haliotis*), conical oreasters, and many other worms. We also tried pelagic fishing for the first time today with Johannes M uller's fine nets and caught some really wonderful little glass animals, like crystal, which I had never seen before, lovely pteropods⁴, chryseis and firola⁴ (very young, with beautiful eyes and nerves), a young siphonophore⁴, the most remarkable Thalassicolla⁴ and other splendid things.

I have also been happier with my scientific research in the last few days. After much fruitless work, yesterday I found some very strange and completely new histological details on the nerves and vessels of crabs, which could provide quite good material for a dissertation. Overall, I have collected very little and will only limit myself to the most important. Seaweed is very rare here and I have not yet examined the few, strange ones that occur in Villa Franca. On the other hand, despite the very advanced season, I have had a very rich harvest of the magnificent land flora on the dry limestone mountains, mostly very strange, characteristic plants of the south: for example, growing wild on Monte Alban: Lavender, myrtle, rosemary, *Centranthus*, *Scilla autumnale*, *Smilax aspera*, *Euphorbia dendroides*, Plumbago, *Statice cancellata*, etc. All of this is extremely interesting, even though I have completely given up botany.

Now I should really tell you about Nice and its inhabitants. But there is very little to say. Nice itself is a very boring big city in the modern residential style with all the opulence and luxury furniture of such a city and some 1,000 splendid, palatial, now empty apartments that only fill up with foreigners in the winter, almost all of them English. The people are accordingly extremely corrupt and degenerate, morally and physically in a bad state. The women are all murderously ugly. You don't see a single tolerable face. I am really glad that I had seen such pretty girls in Baden and Switzerland before; otherwise you would lose all taste here. You see much prettier faces among the men, but they mostly look so slovenly and depraved that they seem to have brought together the crooks and idlers from all over Europe. Even the fishermen and fishwives with whom we deal every day, who are otherwise certainly the best part of the population, are no good here. The customs and language are French, even among the lower classes. We only made 2 acquaintances, namely the two local naturalists, the zoologist V erany and Abb e Montolivo, who is also a botanist: both very pleasant people who are very helpful to me with good practical advice. Incidentally, we rarely saw them, we are mostly confined to ourselves and are very content and happy with that.

Unfortunately, the last half of our stay in Nice is already over. In 10 days, on October 15, we are leaving, K olliker and M uller to Paris, Kupfer and I to Genoa. I will stay there for 2 days and then go across Lake Wallenstadt to Mollis, where I will visit Schuler for a few days. Then via Zurich to Lindau and from there in one go to Berlin, where I will arrive at the end of October or the beginning of November. You can hardly imagine how much I am looking forward to seeing you again and living with you again. Warm regards to all relatives and friends. To Aunt Bertha, my warmest birthday greetings and best wishes for October 20th, if I can't write again myself by then. I probably won't write to you from here anymore, maybe from Spl ugen. But if you can still write to me by the 19th, send the letter to Spl ugen too, p. adr. general practitioner Dr. Boner in the village of Spl ugen in the canton of Graub unden, Switzerland. Otherwise I will also ask in Genoa on the 16th

for any remaining letters. I actually received your last letter from September 18th on September 22nd, just as I was posting the previous one, which I hope you received.

Warmest regards to the people of Freienwalde. If Karl writes to Stettin, he can tell Bertha and Anna that Kölliker speaks almost daily about the pretty cousins who made such furore in Würzburg and constantly talks to me and teases me about it. In fact, the mutual teasing goes on all day here.

unsigned

NOTES

1. Now known as *Col de l'Umbrail*
2. Haeckel refers to the inhabitants of Turin as Sardinian. Turin, in the Piedmont region, was part of the Kingdom of Sardinia. However, Piedmont peoples were culturally distinct from those of the Island of Sardinia
3. The *Col de Brouis* is actually at 879 m, not 1219 (4000 feet) and not the southernmost, it is north of the *Col de Braus*.
4. Organisms of the marine zooplankton
5. There are two islands: *Îles de Lérins*

Principle Persons Mentioned in Haeckel's 1856 letters (EH = Ernst Haeckel)

Beckmann, Otto Carl (1832-1860) - student friend of EH in 1856 (Göbel et al. 2019)

Bertha, Sethe (aunt Bertha), sister of EH's mother (Richards 2008)

Bidder, Georg Friedrich Karl Heinrich (1810-1894), Professor of Physiology, University of Dorpat

Call, Roman von - student friend of EH in 1856 (Göbel et al. 2019)

Claparède, René-Edouard (1832-1871) - Zoologist and long-time friend of EH (Dolan 2021)

Filippi, Filippo de (1814-1867) - Professor of Zoology, University of Turin (Göbel et al. 2019)

Gastaldi, Biagio (1821-1864) - Professor of Anatomy, University of Turin (Göbel et al. 2019)

Guacchino - fisherman of Nice and specimen collector, also known as Jacquin or Joachim, who worked with Jean-Baptiste Vérany, the naturalist of Nice and with Karl Vogt of University of Geneva (Dolan 2022)

Kölliker, Rudolphe Albert (1817-1905) - Professor of Anatomy and Physiology, University of Würzburg, advisor of EH (see Richards 2009)

Kupfer, Karl Wilhelm Ritter von (1829-1902) - assistant of **Bidder** (Göbel et al. 2019)

Vial, N. N. - restaurant/inn owner, and fishmonger of Nice (Göbel et al. 2019)

Montolivo, Justin-Ignace (1809-1881) - Abbé and naturalist (botanist) of Nice, head librarian of the City Library of Nice (Gandioli & Gerriet 2019)

Murillo, Bartolomé Esteban (1618-1682) Spanish baroque artist, known for paintings of street life, Wikipedia

Müller, Heinrich (1820-1864) - Professor of Anatomy, University of Würzburg (Göbel et al. 2019)

Müller, Johannes (1801-1858) - Professor of Medicine University of Berlin, teacher & mentor of EH (Richards 2009) and credited by EH for inspiring his turn to studies of plankton, especially radiolaria (Haeckel 1893)

Piria, Raffaele (1814-1865) - Professor of Chemistry, University of Turin (Göbel et al. 2019)

Vérany, Jean-Baptiste (1800-1865) - renown naturalist of Nice who aided many visiting naturalists (Dolan 2022)

Virchow, Rudolphe (1821-1902) - Professor of Pathology, University of Würzburg, teacher of EH (Richards 2009)

Wilkens, M. (1834-1897) - student friend of EH in 1856 (Göbel et al. 2019)

Ways & Means

The texts of Haeckel's letters, in German, were obtained from the website providing access to transcriptions of the correspondence of Haeckel (<https://haeckel-briefwechsel-projekt.uni-jena.de/de/search>). The transcribed texts were first translated from the original German using automated translation engines (Google Translate). The translations were lightly edited (for clarity, spelling, and punctuation), and then verified for accuracy and fidelity by one of us who is a native German speaker (M.G.W.). In the translations, we opted to retain Haeckel's narrative style, including in some instances, repetitions, simplifications, etc. The versions of the sketches in the letter 2 are reproduced, with permission, from the book by Göbel et al. (2019) that presented the correspondence of Haeckel with members of his family, from August 1854 to March 1857. The Ernst Haeckel Archive (Jena) provided a copy of the sketch in Haeckel's 1853 letter as well images of the postcards in the 1856 letter 2.

Acknowledgements

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