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Russian Biologists at Villafranca

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This article provides a brief historical review and analysis of the development of the Russian Zoological Station at Villafranca (Villfranche-sur-Mer) and information about some of the Russian scientists who worked at the Station. A majority of the archival materials used in this study, including those from the Russian part of the archives of the Villafranca Zoological Station as well as documents from several private collections, have not been previously studied. The present essay embraces the period from the foundation of the Station and some previous events (1879-1886) to the time when the Station passed completely under the jurisdiction of France (1931).

The publication of Charles Darwin's *The Origin of Species* (1859) opened a new era in the natural sciences. It stimulated a proliferation of zoological, comparative anatomical, and especially embryological investigations that often sought to prove or to disprove the new theory. Anatomical, comparative morphological, and embryological studies of marine animals were important for understanding the origin and phylogenetic relationships of the main lower animal groups, and that was one of the main reasons why scientists were suddenly concerned with the marine fauna. It was a time when zoology acquired ideological significance, and some scientific results were passionately debated in society. Marine studies also had an applied aspect, determined by economic reasons. Thus, in the last third of the 19th century, time itself dictated an interest in marine zoological research (Schmalhausen 1937; Blyakher 1955; Poljansky 1955; Müller 1975; Fantini 2002; Fokin 2006).

In the 1850–1870s, both Western European and Russian naturalists privately conducted zoological investigations at sites along the Mediterranean Sea (Messina, Naples, La Spezia, Villefranche-sur-Mer–Villafranca, Marseille, Banyuls-sur-Mer) as well as at some other marine locations. Though these researches proved highly productive in many respects, they highlighted a need for permanent biological stations, which later were founded at most of the places mentioned. By the beginning of the period under consideration, marine biological stations already existed along the Atlantic coast of France at Concarneau (1859) and Arcachon (1867). The Naples Zoological Station was also about to be founded (1872–1873), partly due to the moral support of some Russian naturalists (Müller 1975; Heuss 2000; Ghiselin 2002; Fokin 2006). Furthermore, in 1871, the first Russian biological station was established at Sevastopol (Black Sea, Russia).

Investigations of marine invertebrates, especially those of uncertain origin and phylogenetic relationships, were greatly inspired by the discoveries of A.O. Kowalevsky and I.I. Metschnikoff, two prominent Russian zoologists who worked mainly at Messina and Naples, but also at several other places along Mediterranean coast, including Villafranca (Villa-Franca) (Dogiel 1945;

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Blyakher 1955; Poljansky 1955; Fokin 2006). The development of zoology and biology in general required stable and reasonably comfortable working conditions at the stations, something that the enthusiasts of field biology had previously lacked, especially in Russia.

By the early 1870s, Russia possessed all the necessary prerequisites for the foundation of marine biological stations. There were eight universities of considerable scientific potential and an active Imperial Academy of Sciences in St. Petersburg. There were vast and poorly explored territories with five seas (the Black, Azov, Baltic, White, and Barents) just in the European part of the Empire. Marine stations were a vital necessity. They were founded owing to the efforts of several prominent scientists and scientific societies, especially those in Novorossiysk (Odessa) and St. Petersburg universities. Among the active persons was Alexis (Alexey – Russ.) A. Korotneff (1852–1915), who established the only Russian biological station outside of Russia — in the South of France, at Villafranca. On the other hand, the development of marine stations in Russia itself was a long and painful process, encumbered by the usual poor financing of science and red tape. However, as a result of personal initiative and deep concern of scientists, and with some help from the state and private donations, good results were achieved. Before World War I, Russia owned three first-rate marine stations: one at Villefranca along the Mediterranean Sea, a second at Sevastopol bordering the Black Sea, and a third, the Murman Station, along the Barents Sea. The latter was founded, in fact, at the White Sea under the aegis of the Solovky Monastery (1881) but was transferred to the Murman in 1899 (see Fokin et al. 2007).

In the present article we focus on the Station in Villafranca during the Russian period of activity — up to 1931 when it passed completely under the jurisdiction of France. The aim is to provide a brief historical review and analysis of development of the Station and some information about the Russian scientists who worked there. This topic has not been carefully treated earlier either by historians in Russia, which owned and managed the Station for more than 40 years, or in English-speaking countries except for the limited amont of information provided by Kofoid (1910). Tregouboff (1983), the Station's last Russian director, published the only large review of the Station's history, but he did it in quite an unfair manner. Unfortunately, a lot of materials, which were used by him (first of all over 60 letters addressed to the Station from 1915 to 1931), have disappeared. In other short indications about the Russian Station in Villafranca made by several scientists in print or via the Internet (Caullery 1950; Braconnot et al 2004; *<http://www.darse.org/v1/ sciences/fol; http://www.obs-vlfr.fr/historique.php>*), various mistakes or unclarities are presented.

Russian biologists at Villafranca before the foundation of the Russian station

The vision for a station in Villefranche had deep roots. Long before the Russian Station's foundation, Villefranche harbor was known to be a convenient site for marine biological research, especially on planktonic animals. The famous naturalist Carl Vogt (1817–1895) worked there as early as the 1840–1850s; F. Peron (1775–1810) and C.A. Lesueur (1778–1846) discovered rich planktonic marine life near by Nice even before — in 1809 (Braconnot et al. 2004); and. Russian biologists Ph.V. Ovsjannikow, N.P. Wagner, M.C. Voronin, V.N. Ulyanin, A.P. Bogdanov, A.O. Kowalevsky, I.I. Metschnikoff, M.S. Ganin, M.M. Ussow, W.W. Salensky, A.A. Korotneff, M.M. Davidoff, V.M. Repyahoff and some others also visited this part of the Mediterranean coast, which up to 1860 belonged to the Sardinian kingdom and then to France. Actually, A.A. Korotneff, the future founder of the Station, had visited Villafranca for the first time in 1874 as a student in company with his teacher, Prof. Bogdanov. A number of scientists from Western countries also worked there.

Other zoologists before Korotneff attempted to settle in Villafranca. The well-known Russian

zoologist and embryologist Alexander O. Kowalevsky (1840–1901), who on two occasions spent several months in Nice, Villafranca, and Beaulieu St. Jean (1878/79, 1882), wrote in February 10, 1879 to Iliya I. Metschnikoff (1845–1916) in Odessa:

> I was asked what is your opinion about the possible foundation of a zoological station here, in Villafranca, which could be supported by the Russian government? Are you ready to petition for such founding from the government? I have written to Ovsjannikow[1] for this matter and by myself I am very sympathetic to this idea to create a station in Villafranca. The sea here is rich indeed, not less than in Naples. But swimming animals are better and fresher, since they are swimming directly in front of the windows of the laboratory — just take it. Barrois petitions to get the same amount of money as was done for Naples or, at least half — namely about 2000 francs. I would think we could write a joint letter to Ovsjannikow. Then he can petition through the Academy. Bogdanov (Anatol) agrees with that. What about you? (Letters of A.O. Kowalevsky to I.I. Metschnikoff, p. 117).

From this letter it is clear that some "preliminary" laboratory already existed at Villafranca in 1879, and, apparently, its main organizer and manager was Jules Barrois (1852–1943), zoologist from Lille University. We do not know what was the original location of the laboratory. Because financial support from the Russian government was not promised at that time, Barrois sought to get money from other resources. Shortly thereafter, in 1881, Barrois together with Hermann Fol (1845–1892), a professor of Geneva University, received some support for the marine laboratory from the French Ministry of Public Education, the Ministry of Agriculture, Community of Villefranche, and, lastly, from Oxford University and the Naturalistic Society of Geneva. Officially the Laboratory opened in November 1881, as was described in the report "Plan for reorganisation of the laboratory in Villefranche (Nice)" by Barrois and Fol (1887). The Laboratory was located in the vacated premises of the Russian field hospital — two small houses-towers (pavilions) of "lazaret" (Barrois and Fol 1887; Kofoid 1910; Braconnot et al. 2004). However, the official agreement about using those pavilions was made only in the beginning of 1883. In the meantime, during an outbreak of cholera, the buildings once again served as a hospital. And Barrois and Fol's decision to build a new station following that event was never carried out (Koltzoff 1915); thus, in 1884 they moved to "Russian house", which Prof. Korotneff had gotten for the Russian Station. It is interesting that in their report Barrois and Fol simply ignored the fact that "Russian house" was donated not for them, but for Korotneff! They just mentioned in the text that the document giving permission to use the building as a station arrived in April 1884 from St. Petersburg, Russia (Barrois and Fol 1887, §3- Péripéties des locaux).

Nevertheless, even at the beginning, Barrois had planned to develop an international station. He wrote about this idea to Charles Darwin in March 1882:

> The French government had decided in the recent time to establish the natural laboratory in Villefranche, near by Nice in aim to provide for numerous naturalists and foreigner scientists, who visited this place before, a good opportunity to work… I am writing you these few words with a hope to get back a letter with your sympathy and approval of this idea of the international marine laboratory at Villefrance" (Barrois 1882).

About 40 persons from different countries were listed in Barrois and Fol's report who worked as if at the Laboratory during three years (1882–1884). Among them were also mentioned several Russians — Kowalevsky, Metschnikoff, Wagner, Davidoff, and Korotneff (Barrois and Fol 1887).

[1] Philipp Vassil'evich Ovsjannikow (1827–1906). Physiologist-zoologist, Prof. of Kazan and St. Petersburg universities, ordinary academician of the Imperial Academy of Sciences in St. Petersburg.

FIGURE 1. Russian Zoological Station at Villafranca. About 1892. From postcard. Archive of Observatoire Océanologique de Villefranche-sur-Mer (Russian Archive of the Villefranche Zoological Station—RAVZS). In the left part two small towers ("pavilions") of the former "lazaret", where Barrois's laboratory was located are visible.

FIGURE 2. Russian zoologists, who worked in Villefranche-sur-Mer before the Russian Zoological Station. 1- N.P. Wagner, 1890s; 2- A.O. Kowalevsky, 1880s; 3- V.N. Ulyanin, 1880s; 4- A.P. Bogdanov, 1890s; 5- Ph.V. Ovsjannikow, 1890s; 6 - W.W. Salensky, around 1910; 7- I.I. Metschnikoff, 1880s; 8- M.M. Davidoff, 1890; 9- A.A. Korotneff, 1890. 1–3, 5 –Archive of the St. Petersburg Naturalists Society; 8, 9—Archive of the Naples Zoological Station; 4, 6, 7—Archive of the author.

FIGURE 3. Boat of the Station, 1895. Photo by N.A. Ivantzoff. From the Station's report published in 1896 (University reports of the Imperial University of St. Vladimir, 6(II):1–19).

FIGURE 4. M.M. Davidoff and W.F. Karavaeff (?) in the Station laboratory, 1895. Photo by N.A. Ivantzoff. From the Station's report published in 1896 (University reports of the Imperial University of St. Vladimir, 6(II):1-19).

FIGURE 5. The large hall of the Station, 1909. Archive of RAVZS.

FIGURE 6. The entrance to the Station territory. 1900s. Archive of RAVZS.

FIGURE 7. "Velella"—motorboat of the Station. 1900s. Archive of RAVZS.

FIGURE 8. Russian Zoological Station at Villafranca. Postcard, 1900s. Archive of the author.

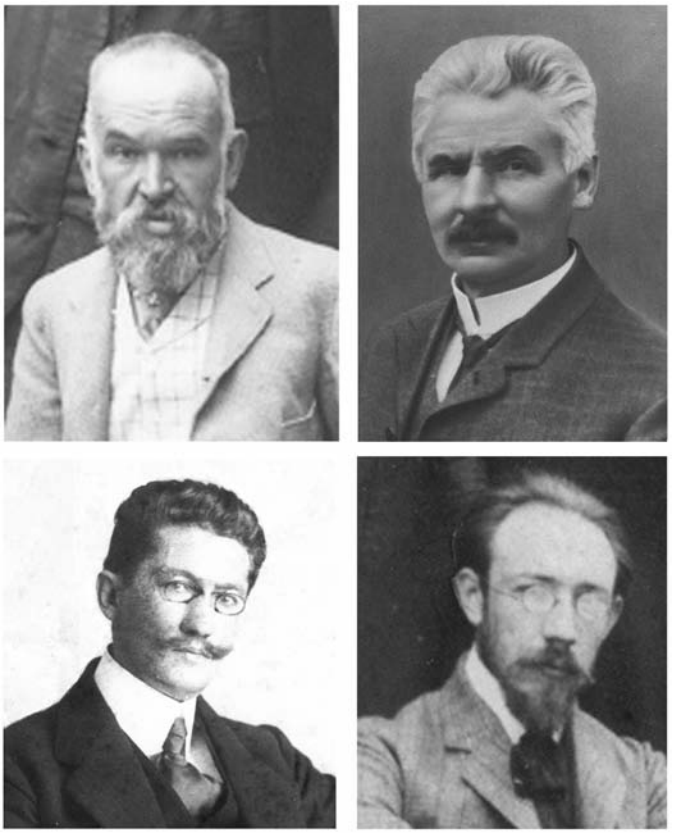

FIGURE 9. Staff persons of the Station. From the top, left: A. A. Korotneff, 1907, M.M. Davidoff, 1907, T.E. Timofeeff, 1910?, F.A. Spitschakoff, 1911. Archive of RAVZS.

FIGURE 10. The experimental zoology course in 1911. Among of the participants, from the left: F.A. Spitschakoff (second), M.M. Davidoff (sixth), T.E. Timofeeff (twelfth), G.P. Mittens (thirteenth), I.I. Sokoloff (fifteenth). Archive of RAVZS.

We are saying, "worked as if" because 23 persons listed for two years (at the beginning of 1884 the laboratory had already moved into the "Russian house") for a small and, apparently, not well-equipped institution, is very high number.[2] Certainly, it is a question — how the number was calculated is a puzzle. Did all of those people have tables in the Laboratory, or did some of them just use equipment or get some help there? Unfortunately, we cannot find yet any indication that all of the Russian persons really worked at the Laboratory. Only one paragraph from the letter of Kowalevsky could be treated in this way. Actually, he is always talking about a station, not a laboratory. In March 1882, he wrote to Metschnikoff:

> Dear Iliya Iliich, your letter a bit disappointed Barrois, who had hope for your help… I would think, by the way, that the Villafranca station could be a great benefit for young Russians. Every year some Russians, who are completely unknown for us, are visiting the place… For all of them the Naples Station is inaccessible — no Academy would recommend them — they are just beginners… For all of these people the station in Villafranca is a necessity… Accordingly, I still hope that you will endorse the general proposal, for example to the Academy, about help for the Villafranca zoological station. (Letters of A.O. Kowalevsky to I.I. Metschnikoff, p. 125)

In any case, we can indicate the variety of objects used at Villafranca by Russians at that time. The strategy of A.O. Kowalevsky, who made numerous and significant contributions to evolutionary and comparative embryology, for instance, would always be to investigate several objects simultaneously. The majority of his studies were connected with developmental processes of different invertebrates. It was not easy to predict which one would develop adequately. He used the same way of study everywhere: in Messina, Naples, El-Tor (Red Sea), and Marseille as well as Villafranca.

> I am working with salps and actinia, but it is quite boring… In the last days I have started to work with holothuria… I have found one *Doliolium* and the investigation of its tail gave the same result as for salps… Here many animals are suitable for the University course when I will present lectures about mussels; worms and crustaceans could be collected. So, I have decided to make a collection for the practical lessons… I am working with Pteropoda, but still have very small results… I have tried to investigate coral development… I already started to work with the *Chiton*, but the caviar of *Chiton viloaceus*, which I am reinvestigating now, is quite bad…(Letters of A.O. Kowalevsky to I.I. Metschnikoff, pp. 113–119)

These are just indications about Kowalevsky's objects during four months in 1879. Actually, Kowalevsky's main result during his time in Villafranca (1878–1882) was, afterwards, an excellent study about chiton development.

At Villafranca, M.M. Davidoff investigated the development of Physophorides and Diphyides (Cnidaria): *Hippopodius*, *Agalma*, *Phialidium,* as well as of *Cunina* and *Aglaura*. Korotneff did investigations on embryo formation of salps, development of ascidians, on some cell elements of Anchinie (Tunicata), and on the histological structure of Cnidaria: Diphyides, Apolemides and general structure of Physophorides and Siphonophores. N.P. Wagner worked in Villafranca on morphology of tunicates and *Cymbulia* (Gastropoda). And I.I. Metschnikoff did a number of studies on medusa development: *Laodicea cruciata, Octorchis gegenbauri, Phialidium viridicans, P. ferrugineum, Mitrocoma, Polyxenia leucostyla* and *Cunina lativentris*.

Another person who productively investigated marine fauna and wished to organise the zoological station in Villafranca was Carl Vogt. He was an excellent naturalist, of German origin, and

[2] In all of Russian biological stations at the beginning (the few first years of its existence) as well as at the Russian Station in Villafranca, not more than 4–8 persons worked at each station per year.

a professor of zoology in Geneva. Vogt successfully worked in Villafranca for a long time, mainly on Siphonophora and other pelagic invertebrates. Three times he tried to establish a station in different places of the Mediterranean coast, but he was not lucky in this respect and some external circumstances always derailed his efforts. He had quite a bad relationship with Barrois and, even more so, with Fol (who was his colleague at Geneva), and about whom Vogt once wrote to Korotneff: "Vous verrez, que notre diable d'ami est très à craindre" (Korotneff 1911). Relations between Vogt and Korotneff, on the contrary, were good and later the Swiss scientist was called by Korotneff "the godfather of the Russian station" (Korotneff 1911).

Organisation and development of the Russian Zoological Station in Villafranca in 1886–1931 (now [2007] the Observatoire Océanologique de Villefranche sur Mer, Université Pierre et Marie Curie, Paris, France)

Officially the Russian Zoological Station in Villafranca opened in 1886, though its organisation actually started in 1884. It was the only zoological station at the Mediterranean Sea to be founded by Russians and it functioned for almost 45 years under the aegis of Russian scientists (Kofoid 1910; Korotneff 1911; Koltzoff 1915; Novikoff 1935; Tregouboff 1983).[3] It was the brainchild of A.A. Korotneff, a professor at St. Vladimir University in Kiev, a prominent specialist in invertebrate zoology and embryology and a former student of Prof. Anatol (Anatoliy-Russ.) P. Bogdanov (1834–1896) at Moscow University.[4]

Alexis A. Korotneff was born in Moscow and graduated from the Moscow University as a zoologist (1876), then spent some years working for the state administrative service. After that he studied medicine at the same University, but, finally, returned to zoology and got a doctor of zoology degree in 1881. In 1886 he was appointed a professor in Kiev, and remained in this position until 1912. Korotneff was a tireless traveler. He spent a considerable part of his life on scientific trips and expeditions both in Russia and abroad, where the majority of his time was occupied by the Russian Zoological Station at Villafranca.

Korotneff worked in Villafranca several times before 1884, when the idea for a Russian station, generated earlier, was accepted and a place where it could be located was found. It was the building a hundred meters away from the "lazaret", where the laboratory of Barrois had been located in 1882–1883. This "Russian house" at first was totally unsuitable for scientific purposes. It was, in fact, an old spacious prison built in 1769. In 1857, the Sardinian government allowed Russia to use it for the needs of its fleet, which up to 1878 had a base in Villefranche (Koltzoff 1915). Then France did likewise. In fact, it was a kind of free-rent agreement, made until the building might be used. After the Russian fleet has been moved to Piraieus (Greece), the building was no longer needed and it housed a field hospital for some time.

After Korotneff's petition, the Russian Marine Ministry, thanks to the help of Mikhail Yu. Poggenpol (who became a personal friend of Korotneff), allowed him to accommodate a zoological station in the "Russian House" (1884), as it was called by the locals. The Russian government allocated some money for the project (1700 rubles per year just for keeping this building in shape), but most investments were made by Korotneff himself, who became both the director and the owner of the newly born station.[5] Funds for reconstruction and maintenance were raised from a

[3] The main official documents connected with the Station are deposited in the Russian Governmental Historical Archive in St. Petersburg (RGHA SPb), fund 733, inventory 142, file 792. A small part of the Russian archive that had been left in Observatoire Océanologique de Villefranche-sur-Mer (Russian Archive of the Villefranche Zoological Station — RAVZS) was classified by me during my visit to Vilefranche in 2004 into 17 files.

[4] A.P. Bogdanov was not only an excellent teacher, but also a very active and powerful public figure.

[5] RGHA SPb, fund 733, inventory 142, file 792.

variety of sources. Korotneff managed to get some allocations from different Russian ministries: the Marine Ministry, the Ministry of Finance and the Ministry of People's Education. The Kiev University paid the assistant's salary; a next-to-nothing sum was given for some time by the French government. From time to time various donations were received.

As mentioned above, Barrois and Fol were invited to use the same building when they were no longer able to use the "lazaret" for their laboratory. Soon after that, in the spring of 1885, Korotneff set out on an almost one-year-long expedition to the Dutch Indies, that had been commissioned by the St. Petersburg Naturalists' Society. Before leaving, he asked H. Fol and J. Barrois to take care of his station's management in his absence; that was not the best idea. Fol, who replaced the director, not only resumed the activities of own laboratory at the Station (1885–1887), but later even thought of selling the "Russian House" and using the proceeds to built a station elsewhere (Korotneff 1911).

Having returned from the tropics, Korotneff tried to take over the Station's directorship but encountered stiff resistance. Fol and Barrois simply ignored Korotneff's requests to get the Station back. The incident was resolved only after the interference of Baron Morenheim, the Russian Envoy in Paris. According to the French Foreign Office's instruction, Fol and Barrois had to move out of the "Russian house" in ten days; they then settled in Nice (Korotneff 1911). At that moment the report "Plan of reorganisation of the laboratory in Villefranche (Nice)" was made (Barrois and Fol 1887). They did not mention the reason for moving from Villafranca to Nice but just stressed: "…At present, after six years of successful existing, the laboratory could die because of the impossibility of getting one of the buildings that the government has around the Villefranche inner harbor!" After Fol's death on an expedition to the Bay of Biscay (1892), the French-Swiss laboratory ceased to exist.

In a report devoted to the 25th anniversary of the Station, Korotneff gratefully acknowledged the contribution of different people to the Station's support. Among them were His Imperial Highness Grand Duke (Prince) Mikhail Alexandrovich, the famous Swiss scientist Carl Vogt, and an official of the Russian Marine Ministry, Mikhail Yu. Poggenpol, Korotneff's personal friend (Korotneff 1911). In February 1897, Grand Duke Mikhail Alexandrovich (1878–1918) became the official patron of the Station and procured a state subsidy of 26,000 roubles for it. This money was used to construct large aquariums with flowing water, to install a steam engine, to purchase a yacht, and to restock the library. In the autumn of 1900, the State Council decided to allocate 7100 roubles annually for the Station's maintenance; in 1901, 2500 roubles were added.[6] To compare, in 1904, the rent of four working Tables in Naples cost the Russian treasury 3700 roubles.[7]

The purpose of the Station was initially twofold. On the one hand, it was well suited for the needs of independent students from natural science faculties. On the other hand, the diversity of local fauna and the Station's improving equipment provided a wide choice of research topics and possibilities for their implementation.

In 1907, practical zoological courses for students were initiated at the Station. This arrangement had never been realized at other Russian biological stations. Courses were held in March and April so that visiting students, under the supervision of the Station's staff, could familiarize themselves with the rich marine fauna. In 1908, M.M. Davidoff, Korotneff's assistant at the Station since 1895 (then deputy director and director), also started a course on experimental zoology.

Numerous students visited the Station. Usually the majority of visitors mentioned in the Station reports at the beginning of 20th century came from the educational establishments in France,

[6] RGHA SPb, fund 565, inventory 8, file 29387.

[7] RGHA SPb, fund 1129, inventory 1, file 70, lists 12–14.

Germany, Switzerland, and Russia as well as some people from England, Belgium, Italy, and the USA (Davidoff and Garyaeff 1910).

In time, almost the whole building was adapted to the Station's needs. There were several well-lighted laboratories, rooms for visitors, aquaria, running fresh and seawater, gas for thermostats and lighting. A small garden featured palms, orange, and lemon trees, cactuses, banana trees, and a flowerbed.

The Station's museum of local fauna was intended not so much for the general public as for the scientific staff, facilitating identification of animals in current samples. The public was allowed to see the Station's aquariums for an entrance fee. The Station owned a yacht of 7 tons displacement, "*Velella*", built by the Esher-Wiss and Co. company in Zurich. A marine engineer K.P. Koklevsky participated in the draft development. The Station was proud of its extensive zoological library, based originally on V.N. Ulyanin's personal library, that had been purchased for the station by A.G. Kuznetzoff. In 1895, the library received 25 periodicals, in 1910, 83 (Davidoff 1896; Davidoff and Spitschakoff 1911).

Before the outbreak of World War I, the Station was likely to get a large new steamer for oceanographical studies. During 1910–1914, Korotneff made some negotiations about this point with the Marine Ministry of Russia as well as with the Ministry of Public Education, and he also had visited the Naples Zoological Station for consultations. Unfortunately, the war intervened and all plans had to be shelved.[8]

Korotneff wanted the Station to be under the jurisdiction of the Russian government. This idea was energetically supported by the Deputy Minister of Public Education W.T. Schewiakoff (1859-1930). In 1914, several days before the outbreak of the war, the Station passed under the jurisdiction of the Ministry. A "Statute of the Russian Zoological Station in Villefranche named after Prof. A.A. Korotneff" was legislatively confirmed. The Station's budget was fixed at 18,000 roubles a year,[9] which was a largest budget of any Russian station (Fokin et al. 2006).

Korotneff's assistants at the Station were A. Bolles-Lee (1888–1891) and E. Veber (1891–1895). From 1895, a well-known zoologist, M.M. Davidoff, who had previously worked in Heidelberg and Munich, shared the labor of the Station's management with Korotneff. According to Korotneff's wishes, Davidoff was appointed director after Korotneff's death (1915).[10] In the 1900s, V.P. Garyaeff, F.A. Spitschakoff, and T.E. Timofeeff also worked at the Station as assistants.

Mikhail M. Davidoff (1852–1933) was born in St. Petersburg, but from childhood he lived much of the time in Europe. In Paris and Leipzig he studied music (1860–1864). After some years of private training as a musician, Davidoff went to the Moscow Conservatory, from which on completion of his studies in 1872 he received a good medal. However, after becoming acquainted with Darwin's theory and with some investigations on the evolution theory, he gave up on a career in music and went first to Jena University and then to Heidelberg for biological education. In Heidelberg, Davidoff did his zoological investigations leading to a Ph.D. degree under the supervision of Prof. C. Gegenbaur and, partly, Prof. O. Bütschli. The latter invited the young scientist to be his assistant. In fact, Bütschli introduced his Russian colleague to Villefranche-sur-Mer, where together they collected some material for practical lessons in 1881. In 1884, Davidoff left Heidelberg for Munich, where he worked at the Institute of Embryology and Histology at the University. Although the main subjects for Davidoff's researches at that time were amphibians and fishes, he also pub-

[8] RAVZS, files 11; Sokoloff, I.I. 1999. The daily-notes of the expedition to Kenya and Uganda at 1914. St.Petersburg State University Press. 259 pp (In Russian).

[9] RGHA SPb, fund 1129, inventory 1, file 109, lists 48–60; fond 733, inventory 145, file 333; fund 1158, inventory 1, file 190; RAVZS, file 2.

[10] RAVZS, files 9, 10.

FIGURE 11 (above). Unusual prey. The Station staff and some students with a moon-fish. 1910. From the left: second T.E. Timofeeff, then F. A. Spitschakoff, K. Volpin, I.D. Strel'nikov, A. Sigliansky. Archive of the author.

FIGURE 12 (right). Recreational time for scientists in Villafranca. 1911. From the left: Zelenko, E.M. Davidoffa (third), then, T.E.Timofeeff, I.N. Filip'eff, V.M. Schütz, I.I. Sokoloff. Archive of the author.

FIGURE 13. Working staff and researchers of Villefranche Zoological Station. 1911. From the left (first row): Mangiapain (fishermen), Sholtz, Kritch, Müller, F.A. Spitschakoff, Shacillo, Loginov, Leinander, Krasinska; (second row): Kukol-Yasinopolsky, Pauly, ?, Belyankin, Rakovskiy; (third row, standing): Anigshtein, Zelezko, I.I. Sokoloff, A. Vassilev, T.E. Timofeeff, Nezabitovsky, W.W. Salensky, M.M. Davidoff, G.I. Mittens, W. Schkaff, S.E. Kuschakewitsch, Osorgin, ?, Onore. Archive of the author.

FIGURE 14. A.A. Korotneff and M.M. Davidoff are seating on the right side, P.P. Sushkin on the left, with some technicians and guests (standing, second and third from left to right), S.A. Zernov, W, Garyaeff. In the inner yard of the Station. Archive of RAVZS.

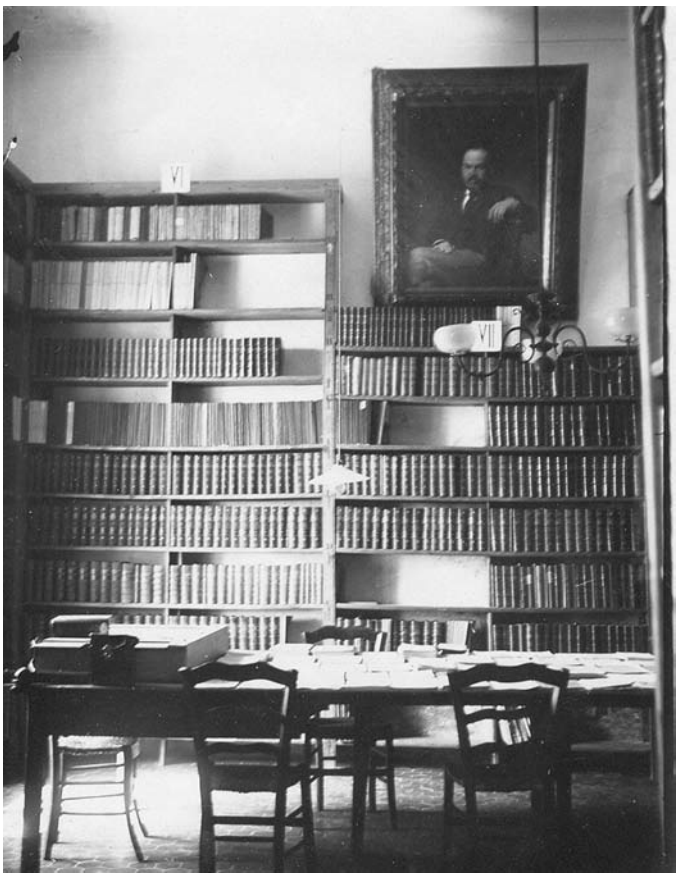

FIGURE 15. View of the Station's library with portrait of Korotneff. 1929. Archive of RAVZS.

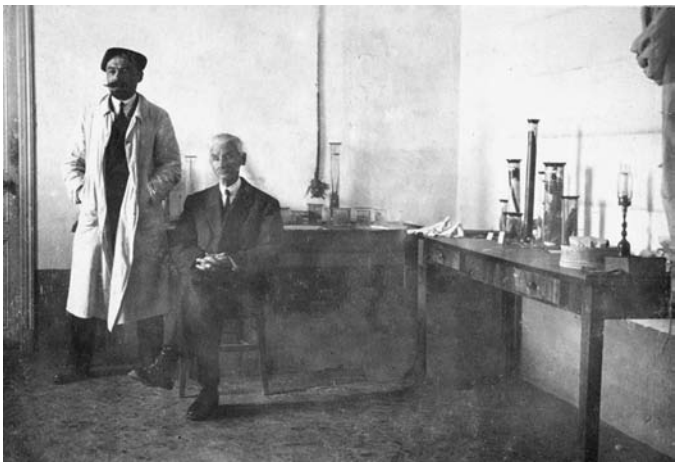

FIGURE 16. G.S. Tregouboff and M.M. Davidoff in the Station's laboratory. 1925. Archive of RAVZS.

FIGURE 17. S.S. Tschachotin, 1905? (left in the upper row), from 1904 visited the Station many times, the last - in 1947. Archive of the author; I.D. Strel'nikov, 1935 (right in the upper row), worked at the Station in 1910. Archive of the author; K.N. Davydoff, 1927 (left in the lower row), worked at the Station in 1925. Archive of Observatoire Oceanogique de Banyuls; G.S. Tregouboff, 1920s (right in the lower row), worked permanently at the Station from 1916 to 1956. Archive of RAVZS.

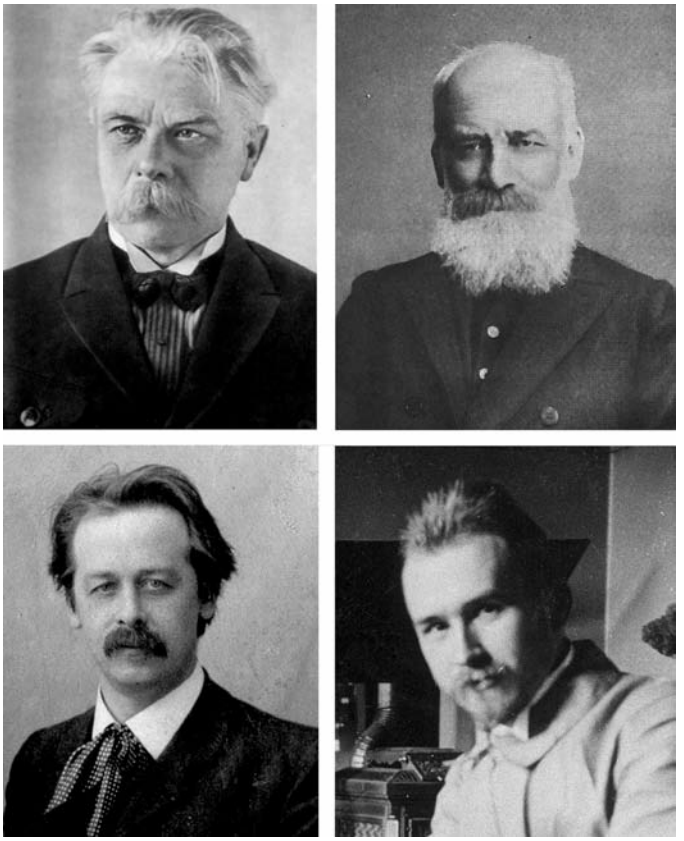

FIGURE 18. N.K. Koltzoff, 1925? (left in the upper row), the first time at the Station in 1898; N.A. Ivantzoff, 1925? (right in the upper row), the first time at the Station in 1895; S.I. Metalnikoff, 1907 (left in the lower row), the first time at the Station in 1895. Archive of the author; M.M. Novikoff, 1901 (right in the lower row), the first time at the Station in1903. From Fokin 2002 (*Microkosmos*, 93 (2): 91–98). All of the scientists worked at the Station many times and tried to keep it as the Russian station after 1917.

lished a textbook on histology. From 1886 to 1891, he worked five times at the Naples Zoological Station (and again in 1910). While in Naples he became friends with A. Korotneff, and this eventually led him back to Villafranca in 1895 (Fokin et al. 2006).

Under the joint leadership of Korotneff and Davidoff, the Russian Zoological Station at Villafranca became one of the most popular biological stations on the Mediterranean, not only because of good equipment and opportunities for studying a diverse pelagic fauna, but also because of the warm welcome biologists of all nationalities received there. As at the Naples Zoological Station, an international spirit reigned in Villafranca. However, the social structure of the visitors was distinguished by more democracy than at the Naples Zoological Station — one reason, the majority in Villafranca were students.

The long list of scientists who enjoyed the Station's hospitality includes people of many nationalities, though the majority of the visitors were Russian and German. In 1907–1908, the Villafranca Station was second only to the one in Naples in the number of researchers. In the Station's 25th anniversary report, a list of people who had worked there before January 1, 1911 was published, together with short notes about their research. There were among the Russian visitors not only students and magistrants but experienced zoologists: A.O. Kowalevsky, W.A. Wagner, W.W. Salensky, M.A. Menzbir, K.S. Mereschkowsky, V.N. L'voff, A.N. Severtzov, W.M. Schimkevitsch, D.D. Pedashenko, M.N. Rymsky-Korsakov, E.A. Bihner, N.A. Ivantzoff, N.V. Nasonov, A.K. Mordvilko, V.V. Redikortzev, P.P. Sushkin, B.V. Sukatscheff, A.A. Ostroumoff, B.A. Svartschevsky, J.N. Wagner, N.K. Koltzoff, N.A. Livanow, S.A. Zernow, M.M. Novikoff, S.S. Tschachotin, and others (Davidoff, Spitschakoff 1911). According to the entries in the Station's journal, 352 people had worked at the Station before 1911. In fact, the general number of visitors could be close to 400, as some people did not register in the Station's book.

Faunistic research predominated at the Station, followed by embryological, anatomical, histological, and cytological work. The main objects of study were, of course, marine animals, but terrestrial fauna and flora were also investigated. A few physiological studies were conducted and a special physiology department was envisaged, only to be thwarted by the onset of World War I. The zoological station was gradually changing into a general biological one. And, although some of the protists — ciliates, radiolarians, sporozoans, and microsporida, were studied, the Metazoa remained the main focus of the Station, including many different Coelenterata (Cnidaria) and representatives from other major groups, especially planktonic ones and those that have interesting planktonic stages including Ctenophora, Polychaeta, Nemertina, Gastropoda, Pteropoda, Echinodermata, Chaetognatha, and Tunicata. All were studied from various points of view.

The Station's laboratory sought to improve the methods of processing and preserving zoological material, experimenting widely with formaldehyde, a fixative solution recently introduced into zoological practice. Collections, both scientific and educational, and materials for practical classes were made at the Station. For example, the 1909 report mentions that collections were sent to 70 addresses; in 1910, 80 parcels were sent (Davidoff and Spitschakoff 1911). Sale of collections (mostly of pelagic animals) brought the station about 600 roubles a year.

The Russian Villafranca Station contributed to a new exhibit at the Russian Zoological Museum in St. Petersburg when it moved into a new building. The Station's collections were successfully presented at exhibitions such as the Exposition Maritime Internationale in 1907.

At the Station people, not only worked but, also, sometimes, made or participated in different celebrations and festivals. In 1911, all visitors and the staff were involved in a celebration of the 25th anniversary of the Station; a handmade poster for such a recreational event is still preserved in Villefranche. Usually students and some scientists took part in the local festival of Villefranche community — the feast of flowers.

One student, Ivan D. Strel'nikoff (1887–1981), later on a professor of biology in Leningrad (St. Petersburg), Russia, who worked at Villafranca in 1910 recollected about his time there as well as about one of such recreational events.

> I started to work with great enthusiasm: made a collection of marine organisms and studied its anatomy and embryology. Swimming by row boat in the bay, collecting animals, watching bright and colorful life in the water near by a coastline, working with microscope, drawing made preparations, wrote Strel'nikoff, all of that stuff has swallowed up my soul… At the same time Prof. N.K. Koltzoff, well-know Moscow scientist, worked at the Station; he studied in Villafranca the morphology of protists like *Zoothamnium* and other ciliates. Before his departure, Koltzoff, a wealthy man, decided to make a big picnic for all the Station's staff and visitors. In the palm garden of the Station, some tables with good French wine and various viands were prepared. Among of them was a typical Provence dish from different marine animals (bouillabaisse): octopuses, marine crabs, and caviar of sea urchins, different fishes and so on. People drank a lot, but in breaks also drank strong coffee. The feast, according to Russian tradition, was accompanied by talk about scientific and political topics of far off Russia and on philosophy. Active conversations interrupted by the singing of songs, which were heard far away from the Station, astonishing for the local people. As a result, some of participants got so tired that they fell down from exhaustion. At the end, my friend Sigriansky and I had to drag zoologists who had passed out from the feast to their sleeping places.[11]

Some of the scientists and students who worked at the Station were involved in illegal revolutionary activities. T.E. Timofeeff, a specialist on nemertines, was at the Station during the period 1907–1915, from 1908 as an assistant. While a Privatdocent at Kharkov University, he actively participated in the social-democratic working party's actions during the first Russian revolution (1905), and as its delegate he was arrested in September 1906. Because legal procedure ended in 1907 with Timofeeff's conviction, he escaped from Russia and went to Villafranca.[12]

Another scientist, the zoologist-physiologist and, then, biophysicist and political figure S.S. Tschachotin (1883–1973), who worked at the Station several times (at first as a student in 1904, 1905 and 1906), was involved in revolutionary activity right in Villafranca. Later he recollected this event in memoirs:

> In 1905 I was a student in Heidelberg University where I worked in the laboratory of famous Bütschli. There were several Russians at that time in the laboratory: Koltzoff, Sushkin, Zavarzin, Khohlov, Zavadsky, Novikoff — all of them future professors in Russian universities…Terroristic acts in Russia against the Tsar's officials, the "Iskra"— newspaper made by Lenin, hatred of autocracy: all of those things are being discussed and disturbing us… During spring vacation we went to Villafranca with A.M. Zavadsky. At the station were still a few visitors… We were working all day long; for the lunch we visited the small and cheap hotel "Hotel de l'Univers" where the station's visitors usually are accommodated. When we finished lunch, after a brief walk, we were again at the station. There is a good library: so many interesting books and articles about marine biology. At the station, in the wall of a large dark hall were mounted several aquariums where a lot of fantastic marine forms are swimming, creeping, and sitting on the bottom, walls and artificial rocks. Meantime twilight was coming; some lights switching on in the bay; nobody was at the Station anymore…From the depot we got bottles with nitrogen acid and glycerol — it arrived in my name as if for my experiments with animals and fixation. We care-

[11] Archive of the author.

[12] RAVZS, file 14.

> fully take it out on the small moor, where a row boat awaited us, and swim with it to the opposite side of the bay. There is located a nice villa with a wooden pier. Here four Russians, fluent French speakers, were living as tourists. This was the group of socialist-revolutionaries who were producing explosives and then assembling bombs. In special suits they will be transported across the border to Russia for terrorist groups of the social-revolutionary party — "boevie druzini"[13]

Fortunately, the majority of Russians in Villafranca did only science. However, the Station became also attractive for Russian intellectuals from very different fields. The Station's scientists and, first of all, Korotneff himself were a centre for the cultural community in Villafranca and Nice, a favourite resort of Russians on the French Riviera in the early 20th Century. In the years before his death, A.A. Korotneff often lived in his own villa in the suburbs of Nice, not far from Villafranca, where he was visited by many prominent men of science and culture. One of the reasons was a good private collection of fine art established by Korotneff. He had some nice examples of paintings made by Tropinin, Repin, Aiwazovsky, Dubovskoy, Polenov, Shishkin and some other well-known or even famous Russian artists of the second part of the XIX c.[14] Thinking about the future of his brainchild, Korotneff left the Station more than 40,000 roubles in his will.[15]

At the beginning of World War I (summer 1914) the Station still was working: 21 scientists and 9 students visited Villafranca at that time; then activity was curtailed. Only deputy director M.M. Davidoff (appointed director in 1915), assistant G.P. Mittens, and a fisherman were left of the staff. At request of the commandant of the Villefranche fortress, the Station housed 60 alpine riflemen and a soldiers' boot-maker's shop.[16] By the summer season of 1915, life at the Station returned to normal, though the war drastically decreased the number of visitors: from the autumn of 1914 to the autumn of 1916 only five scientists came to Villefranche (Tregouboff 1983).

After the Bolshevic revolution in Russia, the Station found itself in a desperate economic situation. Russian scientist emigrants formed a special Committee for its support. At first, Academician N.I. Andrusow (1861–1924), a geologist and palaeontologist, and a member of the Russian academic group in Czechoslovakia, was its chairman. Following his death, the Committee was headed by Prof. M.M. Novikoff (1876–1965), professor at the University of Prague, who had been expelled from Russia in 1922 by the famous "Philosopher's steamship". Prof. S.I. Metalnikoff (1870–1946), who has been the head of a laboratory of the Pasteur Institute in Paris after emigrating from Russia in 1919, was also a member of the Committee (Tregouboff 1983; Fokin et al. 2004).[17] Both of them worked at the Station several times and played significant roles in the Russian scientific society abroad.

Mikhail M. Novikoff, a morphologist and public figure who had been born in Moscow, studied biology at Heidelberg University under Prof. O. Bütschli's supervision (1901–1904). He then worked at Moscow University. In 1911, he was awarded the highest Russian university scientific degree, the doctor of sciences (in zoology), and became a professor. Later he became the last freely elected Rector of the University. (1919–1920). Politically, he was a member of the Constitutional Democratic Party (kadet), and in this field he also had a good reputation. His diverse public services included ten years on the Moscow City Council; he was a member of the Russian parliament (State Duma) and vice-chairman of the Committee for National Enlightenment, where he concen-

[13] Archive of the author.[14] RAVZS, file 11. Major part ot the collection was donated by Korotneff to the Fine Art Museum in Kiev.

[15] RAVZS, file 7.

[16] RAVZS, file 8.

[17] A secretary of the Committee—A. Vassilieff; E.P. Kowalevsky—public figure and S.I. Korotneffa, the widow of the Station's founder also were deeply involved in this business.

trated on problems of higher education. In emigration, Novikoff spent the majority of his time in Prague, but he also worked in Heidelberg, Berlin, and Munich before finally settling in United States (Novikoff 1952).

Sergei I. Metalnikoff, protozoologist, physiologist, and immunologist, a pupil of A.O. Kowalevsky, belonged to a noble family from Simbirsk Province. He was educated in St. Petersburg University (1896) and then worked in the Russian Academy of Sciences (until 1910) and in the Biological laboratory (1910–1917), which had been established by Prof. P.F. Lesshaft, as well as in the Higher Women's Courses (1907–1917). In both of the last institutions, Metalnikoff was a professor. Immediately after the revolution in 1917, Metalnikov left for the Crimea and in 1919 went to Paris. In Paris, Prof. E. Roux, director of the Pasteur Institute, invited him to be the head of a laboratory. During the French period of his life, Prof. Metalnikoff contributed to the development of psychoneuroimmunology. He investigated immunity in invertebrates, mainly insects, studied connections of immune and nervous systems, and elaborated biological methods for pest control. While in France, he took an active part in the affairs of Russian organizations: the Russian People's University in Paris, and the National Association, an academic group.

M.M. Davidoff and the Committee (namely, Novikoff and Metalnikoff, who were experienced about Soviet power) avoided contact with Soviet government, notably the Commissariat of Education of RSFSR (then USSR), which tried to establish such a connection in the 20s. First of all, this policy was adopted because the political relationship between Soviet Russia and France had not yet been established and the Station was under sequester. Secondly, the Committee did not trust the new Russian government and, at the same time, negotiations with the Czech Academy about financial support already had been started. In fact, at first the Committee scraped up some donations and received modest support from the French government. Then the Czech Academy of Sciences helped out by renting 12 working places at the Station for Czech scientists (Tregouboff 1983). The rent was sufficient for the Station's maintenance.

However, attempts to get a connection with the Station from Soviet Russia's side were repeated by a couple of scientists who had worked on occasion at Villafranca before the revolution and had some power in the Soviet Russian scientific society, namely, N.K.Koltzoff (1872–1940) and N.A. Ivantzoff (1863–1927). The first, a well-known biologist (cell-biologist, protistologist and geneticist), was a Corresponding Member of Russian Academy of Sciences from Moscow. He worked at first in the University (Cabinet of Comparative Anatomy), and then at the Higher Women's Courses and in the People's University named after Shanyavskiy. In 1916, Koltzoff founded the Institute of Experimental Biology, one of the first scientific research establishments in Russia. The second, Ivantzoff, a morphologist-histologist, teacher, and public figure, also graduated from Moscow University (1886) and, at first, worked mainly on comparative morphology of vertebrates, not only in Russia, but in Germany (Heidelberg, Bütschli's laboratory) as well. At the beginning of the 20th Century, he shifted to teaching at different gymnasiums (Odessa and Moscow). From 1916, Ivantzoff worked in the Ministry of Public Education of Russia and then at Tambov (1918) and Moscow universities (1921). Both of these scientists maintained good relationships with Korotneff and Davidoff, but neither could not convince the Committee of the Villafranca Zoological Station about possible benefits of a relationship with Soviet Russia.

Just a few years afterwards, the head of the Committee, M.M. Novikoff wrote: "A peculiar situation occurred. The Russian committee, i.e. miserable homeless emigrants, offered hospitality to the scientific world" (Novikoff 1935). The Committee also established connections with the Krakow and Belgrad academies, which came to rent working places at the Station. Negotiations with the Bulgarian academy were under way. The Committee also hoped to get some support from United States institutions. However, at the end of 1920s, G.S. Tregouboff, *de facto* substitute for

the Station's director M.M. Davidoff in the mid-1920s, began negotiations, without the knowledge of the Committee members, about passing the Station over to the French government.

Gregory (Gregoriy– Russ.) S. Tregouboff (1886–1969) appeared at the Station for the first time at the end of 1914; a year later, he was appointed librarian for the Station. Tregouboff had been born in Kiev, Russia in the family of a governmental Consult member; he attended and graduated from the University of Montpellier, France where he focused mainly on protistological research. Thus, according to the Russian laws, he could not be a permanent assistant at the Station because he lacked a Russian diploma. It appears that was Korotneff pushed for acceptance of this candidate by Gregory's powerful father, who sent a particular petition to the Russian Public Education Ministry. At the end of 1914 Korotneff wrote to M.M. Davidoff: "I do not know Tregouboff, but, I think, it could be possible to get him at the station temporarily on a salary of Schneider".[18] Almost at the same time he wrote another message to Villafranca: "Perhaps, at present you already have Tregouboff for the help. I think, he is solid young person, I hope, he will be for you if not the right, but the left hand".[19]

When, in 1924–1925, Davidoff developed health problems, Tregouboff, in fact, replaced him, but officially he could not attain the vice-director position until 1932, during Prof. O. Duboscq's directorship. Some characteristics of Tregouboff as a person can be found in the recollections of A.U. Davydoffa, the widow of well-know Russian zoologist-embryologist Konstantin N. Davydoff (1878–1960), a distant relative of M.M. Davidoff. K.N. Davidoff worked and lived with his family at the Station in 1925.

> At the very beginning of May, 1925 we went to Villefranche-sur-Mer where K.N. is working in the Laboratory and where we could get a room for living… Then M.M. Davidoff, a distant relative of K.N., listed as a director, but he was completely senile at that time. In fact, the director was Tregouboff, a quite unpleasant man: always drunk and very rude, especially with Russians. His wife also was a not so simpatica French woman, hostile toward Russians and, in particular, to us. Fortunately, at that time there were several more scientists, thanks to that circumstance, we felt much better ourselves… On the other hand, we had very friendly connections with young scientists from Poland as well as with the son of Prof. Novikoff, Vladimir, who worked as a mechanic of the laboratory's motorboat... When "head" went to Paris, the laboratory was changed from the first day: whistle, laughter and bustle were in the corridor; many kinds of jokes were performed. Either Russian diner was prepared in some laboratory, or a common tea in the library, by sharing expenses.[20]

Thus, from the middle of the 1920s Tregouboff became a real host at the Station. He was quite sceptical about efforts of the Station's Committee to keep the Station as Russian institution without connection with Soviet Russia. In reply to the Committee's protests on his policy, he indicated that attempts to preserve the Station for Russia reflected nothing but a sentimental viewpoint and that its transfer to the French was the only way of ensuring its stable existence (Tregouboff 1983). In 1931, not only did the Villefranche station pass over to Paris University, but even the request to retain the name of its founder, Prof. Korotneff, in its name was not complied with (Novikoff 1935, 1952; Kowalevsky 2001). Unfortunately, extensive correspondence sent by Committee members to Tregouboff and Davidoff at this time (over 60 letters from 1925 to 1931) curiously disappeared from the Station, as did all of Tregouboff's personal archives. The finding of these documents, per-

[18] G.A. Schneider, one of assistants at the Station till 1915.

[19] RAVZS, file 6

[20] St.Petersburg's branch of the Archive of Russian Academy of Sciences. Fund 918, inventory 1, file 38, lists 24–27.

haps, would throw some additional light on the final years of the Russian Zoological Station at Villafranca.

One cannot exaggerate the importance of the Russian Zoological Station at Villafranca at the end of the 19th and beginning of the 20th centuries for the development of Russian natural sciences. Founded by first-rate zoologists with support of the Russian scientific community and the government, it supported the large contribution of Russian scientists to many branches of marine biology. It is equally important that, in the Russian Station, from a certain moment, opportunity was provided for marine experience for students, thus contributing to the training of experts in different branches of marine biology. Working in a friendly company of like-minded men, communication with both senior and foreign colleagues in a relaxed atmosphere close to nature brought to life a certain cultural phenomenon. Many people who had worked at the Station did their best to go there again. Unfortunately, after 1917, Russians could no longer experience this wonderful tradition.

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