CLAUDE GAY: A NATURALIST IN CHILE

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According to his principal biographers, the arrival of Gay in Chile in early December 1828 was the result of his being hired as teacher at the Colegio de Santiago, which was to begin its activities in March 1829. The naturalist, who was to acquire renown thanks to his research on Chile, had been born in March 1800 in Draguignan, department of Var, in Provence, to a family of small farmers.

From childhood he showed an inclination for the study of natural sciences, which took the form of reading on elementary Botany and herborization, as well as periodical excursions around his native town. On those occasions, which in time would extend to practically all the department of Var and part of the lower Alps, the youth would collect botanical and zoological material, and find out about the mineralogy and geology of the places visited. In his diary he recalls this time: as soon as I felt able to identify a few plants, my passion for botany led me to cross the severe limits of the mountains of the Alps, Dauphiné, Savoy, and part of Switzerland.

Having completed his first education, about 1820, he came to Paris to pursue higher studies in Medicine and Pharmacy. His curiosity for science, however, proved stronger than professional practice, and he began to attend the public courses on Natural Sciences at the Natural History Museum and the Sorbonne. In his diary he was to write: “The study of medicine seemed to me the most attractive and the one best suited to my tastes. Unfortunately, my increasing passion for natural history made me abandon it and that is something I shall regret all my life”.

At that time, he took advantage of his vacations to undertake excursions devoted to herborizing outside France, performing activities requested by the Museum. He visited Switzerland, part of the Alps, the north of Italy, part of Greece, some islands in the Mediterranean, and the north of Asia Minor. While in Paris, between 1821 and 1828, in addition to Botany and Entomology, his favourite subjects, he also taught himself Physics and Chemistry, followed later by courses in Geology and Comparative Anatomy. He thus acquired vast knowledge while beginning scientific research by the side of eminent teaches from the King’s Gardens and the School of Mines. His views on the subject of his association with the Botanical Gardens and the Museum of Natural History of Paris are eloquent: “The abundant collections of objects of natural science, the high scientific level of the courses taught there, the interest of the professors in helping me with my studies, all this contributed powerfully to make me love a science that I had already taken up on my own and studied with my own effort”

1 Traducción del español de María Teresa Escobar.
The details of the origin of his interest in this country and his coming to Chile are still uncertain in many ways, though it is known that his arrival was a direct consequence of having accepted the offer made by Pedro Chapuir, journalist and adventurer, who in 1828 was organizing in Paris a group of teachers to set up a school in Santiago sponsored, according to Gay, by the Chilean government.

In the diary he began upon starting out on his voyage to Chile, he mentions failed efforts to reach America until he was told that “a society of persons was being organized in Paris with the intention of founding a university in Santiago de Chile under the special protection of the French and the Chilean governments”; then, he declared that “the pleasure joined to the interest of discovering a country unknown to naturalists, led me without hesitation to accept the proposal they made me of appointing me professor of Chemistry and Physics”.

To understand fully the presence of Gay in Chile it is necessary to recall the interest of the French in exploring southern America, which in his case did not materialize in any form of official sponsorship, though it did mean the support of his teachers and the French Academy. There was also the urgent need of the nascent State of Chile, whose leaders, even before Independence and all the more so afterwards, insisted on the need to set up educational institutions and foster the geographic exploration of the territory.

Hired as professor, Claude Gay saw, beyond the start of a career devoted to teaching, the certain possibility of taking up research in a land almost totally unknown to European scientists. Furthermore, he visualized the materialization of his ambitions, for he had written in his diary, “since I took up the study of the natural sciences, which are truly sublime, I was seized by the desire to travel, which appears to form part of them”.

In fact, as soon as he arrived in Chile he began to visit various sites and to collect specimens, so that in a short time he had formed collections of plants, animals, and rocks.

His expeditions delighted him more than his classes. And on 9 December, 1829 he wrote to Alexandre Brongniart explaining his reasons for coming to Chile and saying that he had “only one day a week available for the benefit of science”. He added that, particularly at the beginning of his stay, he had been able to visit “only the environs of Santiago or make a quick trip to the seaside or the mountains.” However, he had already completed “a good number of observations that will serve to reveal these lands that are so seldom visited by naturalists”.

The zeal and passion that Gay showed for natural history, manifest in his indefatigable activity and devotion to study, not only drew the attention of the few individuals interested in the Natural Sciences living in Santiago. They also reached the ears of the authorities, who had been considering the idea of making a scientific study of the
country, a long-held aspiration, which it had not been possible to materialize for lack of a competent individual to undertake it.

At the time there were no reliable maps, little was known of the precise position of towns and major geographic landmarks; no one had made a systematic study of the natural species, much less worried about geological features or given an accurate account of the climate in the environments where the republic was beginning to develop.

Encouraged by his supporters, in July 1839 Gay wrote a presentation addressed to the Vice President of the Republic, whereby he offered his services to work in preparing a general and particular natural history of Chile; a physical and descriptive geography of the country; a geology describing the composition of all terrains, the structure of rocks, and direction of mines; and complete statistics on production and population. Further to the above, the scientist engaged to make a cabinet of natural history containing most of the productions of the republic, with their common and scientific names, together with a collection, as complete as possible, of all the stones and minerals he might be able to collect; make a chemical analysis of all the mineral waters he might find; prepare statistical tables of all the provinces; make a catalogue of all mines; draw plans of the major cities and rivers, as well as of all the haciendas he could visit; and, lastly, if the government so desired, to instruct two students in all the sciences with which he was concerned. In other words, Gay engaged to perform a monumental task, one that would take up nearly all his life.

Given his reputation, it comes as no surprise that in September 1830 Diego Portales, Minister of the Interior, was authorized to sign a contract with Claude Gay for the scientific journey over the territory. The reasons given included the importance of the mission and the merits of the naturalist to carry it out to the advantage of the nation.

Under the contract executed on 14 September, 1830, Gay was bound to complete a scientific journey over the entire territory of the republic, in the course of three and one-half years. By the fourth year he was to submit a draft of the works offered. He also agreed to set up a cabinet of Natural History containing the major vegetable and mineral productions of the territory. Finally, and considering that one of the objects of the Chilean State in entrusting him with the mission was to “disseminate the riches of the territory of the republic, in order to foster the industriousness of its inhabitants and attract that of foreigners”, the scientist engaged to publish his account three years after completing his work.

Gay would receive one hundred twenty-five pesos monthly for four years; the instruments for his geographic observations; a bonus of three thousand pesos if he made good his promise, and the authorities’ engagement to circulate to the intendentes of
provinces, the governors of departments, and the judges, instructing them to supply all the information he might require for prompt performance of his commission.

In the performance of his commission, the naturalist developed a pattern of behaviour to which he adhered faithfully during his excursions; it explains the ultimate success of his scientific mission. He examined and studied the natural species of every place he visited, collecting specimens of all that proved interesting to him. He was particularly careful to herborize and observe the adaptation of plants in the highest areas of the mountains. He also devoted attention to the accurate position of geographical places, aided by the modern instruments acquired in Europe. Geological studies and charting the area visited were other ongoing concerns. Where they existed, he also proceeded to analyze the water from hot water springs, to determine, among other things, whether they were sulphurous or saline. Other characteristic activities included collecting statistics, documents, and all manner of information about the places and settlements visited. His observations on the climate and meteorological measurements, together with those directed to observing magnetism on land, were another constant of his activity. Lastly, drawing and sketching natural features, as well as geographic features, landscapes, and individuals, also took up his time and became the basis of his Atlas.

Everywhere he went, however, Gay talked to the people and observed their ways of life and working methods; this proved highly useful for preparing his text on Chilean history and agriculture, particularly to obtain information on historical events and identify the particular features of the Chilean people. Even in the text of his Historia, Gay occasionally supports the narrative of the facts with his own testimony of personal acquaintance with protagonists of the facts.

The references, experiences, data, practices, knowledge, and news that the scientist was able to obtain from the inhabitants of Chile are invaluable testimonials because they spring from informal, even spontaneous, conversations that, for that very reason and because of the characteristics of those who furnished them, are of extraordinary value for illustrating the natural and cultural life of this country. They are a palpable sample of the varied, numerous, and prolonged contacts he made with the population of the country over which he travelled for more than a decade in order to write his magnum opus, the Historia física y política de Chile.

**Publication of the Work**

Having completed the stage of research on site, Gay now had to print the result of years of work. Before returning to France, he remained in Chile for nearly two years, collecting additional information on the country, classifying and distributing the objects he had already collected, and busy organizing the Natural History Museum. At this time, he also wrote the Prospectus of his Historia física y política de Chile, which was published in
El Araucano, on 29 January, 1841. There, together with summarizing his scientific work sponsored by the government, he argued in favour of the proposed edition, for its usefulness as well as for the urgency of disseminating the result of his own scientific efforts for the advantage of the inhabitants of the country.

In his proposal, the naturalist explained that he would publish his work on Chile in several sections, namely: flora, fauna, mining and geology, terrestrial and meteorological physics, statistics, geography, history, habits and uses of the Araucanians.

To account for the inclusion of what he calls maps, drawings, and designs in his Historia Física y Política, Gay explains that a work such as he plans cannot lack prints, essential for understanding the description of certain phenomena and aiding the study of everything concerning Geography and Natural History.

The concern of the scientist for leaving a graphic record of his studies was apparent from the beginning of his activities. In his presentation to the government in 1830, he wrote that in the course of the first year of his sojourn in Chile he had undertaken the study of Natural History and Geology in the surroundings of Santiago, resulting in “more than fifteen hundred drawings in colour”, describing species and objects, as well as a map of the capital city. In addition to what might be termed pedagogical reasons, the needs of science were what caused Gay to make his pictures. Indeed, a significant number of the species collected were most difficult to preserve and describe owing to their fine tissues and brilliant colours. It was thus essential to draw and paint them in their naturally fresh condition. At one point he wrote, referring to certain species collected in Chiloé, “I have had to paint them alive and describe them at the same time, in order to show them in all their beauty”.

The urge to leave a graphic sketch of his research had led, as he stated in his Prospectus, to an immense accumulation of more than 3 000 drawings.” In this context he offered to “select those most interesting, which, retouched by our good genre painters and engraved by our most competent engravers”, he foretold, “would make a collection with the two-fold merit of having been drawn from living nature and of belonging to a single botanical and zoological region, aiding the study of this beautiful part of scientific knowledge”.

Back in Paris in October 1842, Gay began the task of having his work printed. In spite of worries connected with the financing of his work, and thanks to his vigour and perseverance, in December 1843 Gay had texts and engravings for printing the first installment of his Historia. The first installment, 130 pages, left the press in March 1844. The first sheets of Gay’s work arrived in Chile the following August. It was anxiously awaited by the subscribers as well as by the government. In this first installment, the author
discussed the civil history of Chile, from the position of Spain prior to the discovery of America to the early days of the conquest of Chile.

The following installments of the publication suffered various mishaps owing to the troubles of his married life, lack of funds, delay of his contributors, together with the difficulties arising from the engraving and printing of illustrations for the Atlas, which held up the presses more than once.

Overcoming all adversities, slowly but systematically, defeating all the obstacles mentioned, the successive installments appeared between 1844 and 1871, finally composing his monumental work. In accordance with available information, 1,250 copies were printed, four hundred for the Chilean government, the balance to be sold by Gay.

The historical part, first to be published, was finished in 1871. The botanical part, the first volume of which appeared in 1845, was completed by 1852. The zoology section, which began to appear in 1847 also continued regularly and its Volume VIII was already printed in 1854. The two volumes of documents left the press in 1846 and 1852, respectively. Agriculture, the last section to appear, had Vol. I in 1862 and Vol. II in 1865. The prints that composed the Atlas had appeared between 1844 and 1865.

Gay’s work on Chile was the result of the decision made by the government at the time of commissioning him to explore the national territory, and by succeeding administrations to support it even in the face of serious difficulties. The Historia física y política that Gay wrote summarizes the knowledge of his time, and from then on would come the work of those who followed him in the task of reconnoitering, delineating, and projecting Chile, including Domeyko, Philippi, and many others. This transforms the French naturalist into an essential referent of national culture and science owing to the magnitude, amplitude, and diversity of his research. Also, however, because of what he observed as the natural and social reality of this country is still present among us, proof of the acuity with which he reconnoitered Chile and characterized its inhabitants.

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