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Materials Chemistry

The material culture in the chemistry lecture and cabinet of the National Preparatory School at the end of 19th century

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Abstract

The aim of this paper is to analyse the chemistry lecture and cabinet in the Escuela Nacional Preparatoria at the end of 19th century. Nowadays, the ENP is part of the Universidad Nacional Autónoma de México's high school subsystem. On one hand, the study to show the material culture of the ENP's Chemistry cabinet, as part of the Chemistry lecture and the lecturer's academic formation. On the other hand, the books that were used during the lectures between the years 1867 and 1900.

Introduction

The educational project that emerged with the 1867 Organic Law of Public Instruction, the Escuela Nacional Preparatoria constituted the basis of the new national project. From the professional training point of view, the ENP constituted the academic background for all professional studies. Thus, for example, to study Pharmacy in the Escuela Nacional de Medicina, or to study to become a Mining Engineer in the Colegio de Minería. However, what it was development of the Chemistry lecture and cabinet are described and analyzed during the first years of ENP's academic life, as well as the material culture of the Chemistry cabinet.

Chemistry lecture

In this study plan, contemplated five years of studies, the teaching of mathematics predominated from the first years, as well as Physics, Natural History, and Chemistry, and, of course, the humanities subjects, as a part of the positivist philosophy that supported the studies. The Chemistry lecture was situated in the fourth year. Leopoldo Río de la Loza taught the Chemistry lecture between 1871 and 1872, and designed the ENP's lecture cabinet. The Chemistry cabinet was a hall with shelves and work tables. There were instruments and artifacts for the experimental practices of this discipline. The texts he used were Introduction to the study of Chemistry, that he published in 1862, and Pelouse and Fremy's General Chemistry, from 1865.

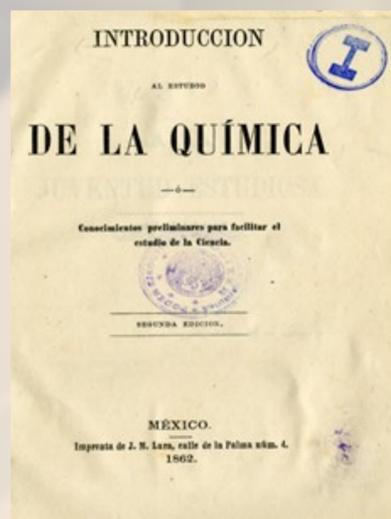


Figure 1. Río de la Loza, Introducción al estudio de la Química, 1872.

The lecture and the cabinet

The Chemistry lecture was theoretical-practical; in the experimental side. The lecture plan designed by Río de la Loza pointed out a teacher's course accompanied with experimental practices. These experimental activities aimed mainly the experimental observation, before the students, of a specific chemical process or the description of a law. In this stage, the Chemistry cabinet acquired the following instruments: Gerardt's device, analysis cups, Bunsen's eudiometer, Dubosc's stethoscope, Gay Lussac's stove, crystal jars with hoods, oil lamps, Bezelius' lamp, minerals from the country, Mohr's pipettes, test tubes, chemist's pictures, amongst others. In this request for material, the following substances were also included: acetone, allyl acetate, allylic alcohol, aluminum, ammoniac arsenate, copper bromide, barium cyanide, cobalt cyanide, strontian chlorate, strontian, amyl ether, methyl ether, bismuth iodide, aluminum fluoride cadmium sulfide, cobalt sulfate, amongst others.

Figure 2. ENP's Chemistry Cabinet, XIXth century.

Conclusions

During its foundation, the Escuela Nacional Preparatoria became the center for the diffusion of new ideas; new generations of students, that impelled the modernity of the society at the end of the 19th century, were formed, giving an impulse to important changes in the development of science, culture, industry, and general society. The teaching of sciences, particularly, allowed to socialize the goals for the modernization of the educational system.

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