
Memory and History: The Mexican Community of Chemists Tells Its Story

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A seminar with the name of the title of this proceeding has been organised by the National University of Mexico, the French Institut de Recherche pour le Développement and the Mexican Chemistry Society. The main challenge of the seminar is to give the floor to the protagonists and witnesses of relevant facts in the building of chemistry history in Mexico during the XX century. The first session began on March 12th 2007. The main objective of the seminar was to understand and explain how scientific knowledge is constructed, to elicit its role in the progress of societies, giving elements to establish science policies.

The research in History and Sociology of Science has clearly shown that science is a core criterion for the economical and social development of communities and countries (Kuhn 1983; Ben-David 1997; Bourdieu 2001; Shinn y Ragouet 2005).

However, the history of science in Mexico has been widely studied in relation to centuries XVI to XIX (Trabulse 1983), but only few books have been written about the twentieth century (Garritz 1991). The organizers of the seminar think that this history deserves to be documented and known by the general public. The testimonies should help to characterise the Mexican chemistry practice inside the context of international science evolution and to identify its singularities.

Thanks to the preliminary historical “*periodisation*” investigation, a full set of six periods and topics was identified (Casas, R. and Kleiche-Dray, 2006) and proposed to the members of the Mexican Chemical Society with 50 or more years old.

1. The National School of Chemical Sciences (1916-1935).
2. The petroleum expropriation (1936-1940).
3. SYNTEX and the Institute of Chemistry of UNAM (1941-1975).

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4. Chemists as academics (1941-1970).
5. Chemical Engineering and chemical industry in México (1941-1970).
6. The strengthening and diversification of chemistry industry and education in Mexico in the seventies.

We received answers from 25 members who attended the first session of the Seminar, opened on March 12th 2007 (as is presented in figure 1).



Figure 1. Mina Kleiche Dray (IRD) is introducing the Seminar during the first session. She is accompanied (from right to left) by Alejandro Villalobos, from Pemex-Petrochemistry, José Luis Mateos (Mexican Chemistry Society) and Andoni Garritz (Faculty of Chemistry, UNAM).

After some discussion, an agreement was achieved to the following eight periods and topics:

1. The National School of Chemical Sciences (1916-1935).
2. The petroleum expropriation (1936-1940).
3. Syntex and the pharmaceutical industry (1943-1975).
4. Institute of Chemistry at UNAM (1941-1965).
5. The Faculty of Chemistry at UNAM (1965-1980). The case of the “coopérant français” and the teaching of Analytical Chemistry.

6. Chemists as academics. The formation of groups of basic research (1941-1980).
7. Chemical Engineering and chemical industry in México (1941-1970).
8. The strengthening and diversification of chemistry industry and education in Mexico in the seventies.

It was proposed and accepted to separate the Institute of Chemistry history and the case of Syntex as a model industry with the participation of research as main ingredient. The fifth topic was also considered important due to the influence of France on the development of the Analytical Chemistry area at the National University of Mexico, substituting the Analysis curriculum, and also by the participation of IRD in this research.

After this decision on the topics that will be covered, the starting session developed on topic number 7, and particularly on 'Petróleos Mexicanos, its petrochemical portion' —the public-sector establishment founded in 1940, just after the petroleum expropriation, and still the most important industry in Mexico. Alejandro Villalobos was our witness and the title of his presentation was: "Remembrances on the development of Mexican Petrochemical industry and a proposal to keep on its headway". He focused on the reasons why petrochemistry has declined, as can be seen in the figure 2 of this proceeding.

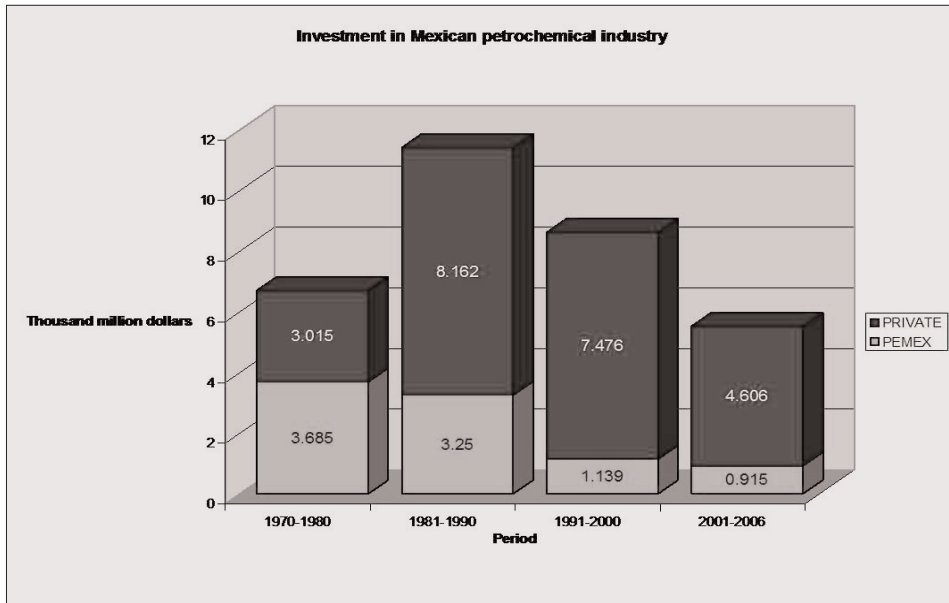


Figure 2. Investment in Mexican Petrochemical industry in periods (Taken from the presentation of Alejandro Villalobos).

Villalobos said that in spite of the world use of hydrocarbons as source to elaborate chemicals since the first decades of last century, the petrochemical industry in Mexico started in 1947 when Guanomex extended its action to the synthetic fertilizer field. In that year ammonia was produced from natural gas by the first time in our country, in an installation in Cuautitlán. It was in 1958 when the Law concerning the exploitation of natural resources was revised, establishing the direct participation and control of petrochemical industry by the Mexican State. Supported on this normative scheme, Petroleos Mexicanos (PEMEX) started from 1959 to 1994 an ambitious programme of development. In about thirty years 7 Complexes and 3 Petrochemical Units composed by more than 60 plants were constructed. Villalobos resumed the importance of Mexican petrochemical industry, including its diagnosis and positioning by product chains. He also made a proposal to continue with its development, limited by diverse structural problems, of prices and raw materials availability, complicated with a short-sighted vision of the governmental authorities.

The subject of the second and third sessions was also related to the seventh topic in the mentioned list, in the second with Enrique Bazúa, talking on 'Evolution of fertilizer industry in Mexico, pillar of industrialization and its present crisis' and Nicolás Rodríguez on 'My work as a Chemical Engineer in PEMEX. The opportunity, the experience and some reflections'.

Bazúa mentioned that in a first stage governmental and private fertilizer industries exist side by side until the creation of FERTIMEX, a unique state company. This booming industry supply Mexican countryside with the necessary items to improve agricultural yield, although phosphoric rock was still imported. Unfortunately, the economical crisis of the eighties brought a new model of development, by which the fertilizers' groups manufactured fewer products and become importers.

In the third session participated engineer Eduardo Rojo with the title 'Industrial promotion of the National Bank of Mexico (Banamex, the petrochemical permission given to Quimica General S. A. and Univex)', and Joaquín Palacios, under the title of 'Engineering plastics'.

Our plan is to start topic number 3 in the aforementioned list, with the participation of the son, José, and daughter, Carmen, of Francisco Giral, an outstanding pharchochemist, in a forth session (on June), followed by Maricela Plascencia and Rafael Gual, witnesses of the Pharmaceutical industry, in a fifth session (on September). From this point we will dedicate to the emergence and development of Syntex, as well as other industries, as Sosa Texcoco, in the forties (see figure 3).

The case of Syntex is remarkable because the tuberose barbasco plant, was found in the Mexican State of Veracruz, with lots of the steroid called "diosgenina"



Figure 3. The “snail”. An enormous solar evaporator (its diameter is 3.4 km) constructed for the Texcoco-valley-subterranean-waters’ concentration of salts, in the industry “Sosa Texcoco”, founded in 1943.



Figure 4. Inauguration of the ‘Escuela Nacional de Química Industrial’ on September 23th, 1916. To the right of the flag Juan Salvador Agraz, first Director.

the transformation of the Analytical Chemistry area in Mexican Universities, several researchers will be invited to cover the periods without survivors, as was the creation of the National School of Chemical Industry (see figures 4 and 5).

which Russell Marker, an American researcher, knew how to transform into “progesterone”, the pregnancy hormone. This fact opened the possibility of industrially obtaining important steroids products, as was the case in Mexico in the decade of the forties last century, with the creation of the initially Mexican industry, Syntex, and the interaction of the researchers of this corporation and others from the whole world with university researchers at the recently created Instituto de Química of UNAM.

After a session (in November) giving the floor to the French and Mexican witness of the participation of cooperants in



Figure 5. The photo of three nice female students in the gardens of the School of Chemistry (Asociación de Egresados de la Facultad de Química).

The Seminar will be open to the participation of external (national and international) sites connected by the videoconference technology from January 2008, when the Mexican educative institutions will be analysed one by one.

Besides collecting the written presentations from each participant in order to build up written archives and publish them, the sessions are also being filmed to share these priceless testimonies with distant and future audiences. A sample of the podcasts can be found in the following URL, <http://podcast.unam.mx/?cat=4>.

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