The Société Française de Chimie (1857-2007) as a Place for Thinking Chemistry in France

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This contribution is related to the adventure of editing a biographic book on 88 French chemists to celebrate the occasion of the 150th anniversary of the French Society of Chemistry (Société Française de Chimie, SFC) in 2007. For its 50th and its 100th anniversaries, the Société published books about its history, including the presentation of the scientific contributions of its first Presidents [*Cinquantenaire, Centenaire*]. More than two years ago, the idea emerged to publish a reference book on its presidents, which finally came out last January, under the name: *Itinéraires de chimistes. 1857-2007.* Some members of the *Club d'histoire de la chimie*, a thematic group of the Société, developed the project and the SFC accepted to edit the book. After a short history of the beginning of the Société, the content of the book and the difficulties met will be presented.

The Société Française de Chimie

In 1857, three young chemists, Arnaudon, Collinet and Ubaldini, began to meet once a week to discuss their work and about the chemical papers and books published in France and abroad. The meeting place was a Parisian cafe, located Cour du Commerce, a passage which started at 130 boulevard Saint-Germain. They were soon joined by young chemists, often foreigners, who worked with Chevreul, Dumas, Sainte-Claire Deville, Berthelot or Balard. They founded a chemical group whose initial statutes were drafted in June 1857 [see Fournier, Fell and Rocke]. The first President, elected in June 30, 1857, was Jacques Arnaudon, a young Italian from Turin, 28 years old, who had been in France since 1855 for training in the laboratory of Chevreul. The President used to be elected for a month, the secretary and treasurer for six months. The Société took its name, the Chemical Society of Paris (Société Chimique de Paris).

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The Société thus started its activities only a few years after the Chemical Society of England, founded in 1841, but before the Deutsche chemische Gesellschaft (founded in 1867), the Russian Chemical Society (1868), the American Chemical Society (1876) and the Chemical Society of Japan (1878).

After the Presidency of Arnaudon, the second President was Anton Rosing, a young Norwegian student of Dumas who then left France for London soon after his period as President of the Société. He then went to Edinburgh and returned to Norway in 1861. The third President was Aimé Girard, who at that time worked in Dumas's laboratory at the Sorbonne and at the Ecole Polytechnique, where he was appointed Curator of collections of chemistry and mineralogy in March 1858. Under the chairmanship of Girard, the Société which was already very structured planned the publication of a chemical revue, and sought a new location, one which best suited to the growing Société. Girard prepared to do what Dr. Quesneville called "the chemical 18 brumaire", a reference to the 18 Brumaire (November 9, 1799), where Napoleon Bonaparte had set up the Consulate. On December 29, 1858, the Société admitted as new members the well known chemists Henri Sainte-Claire Deville, Louis Pasteur, Auguste Cahours, and Paul Dehérain. It was then stated that the Société wished to "change the spirit which was its own since its founding, by enlarging the circle of its scientific activity". On the same day, Jean-Baptiste Dumas was elected a member and President by acclamation, contrary to the statute which provided for an election by secret ballot. The Vice-Presidents were the new members Pasteur and Cahours. At that time, Dumas was already recognised as the most influential chemist of France. The initial small circle of friends was thus dispersed.

However, Dumas did not involve himself in the new Société. In 1859 and 1860, the regular meetings of the Société were directed by Pasteur, who succeeded Dumas at the Head of the Society in 1861. Until 1922, Presidents were elected for one year. This rapid rotation led some to be presidents several times: Pasteur in 1861, 1865 and 1869; Wurtz in 1864, 1874 and 1878; Berthelot in 1866, 1875, 1882 and 1889 before being appointed Honorary President in 1900 to represent the Société at the ceremonies of the *Exposition Universelle*. Between 1923 and the Second World War, Presidents were elected for three years. The mandates then varied from one to three years. Since the adoption of the latest statutes of the Société in 2006, the President is elected by a directorial Board for a three-year term, renewable once. A total of 75 presidents have held the reins of the Société between 1857 and 2007.

After the beginning centred on Paris, the Société gradually developed some activities outside of Paris, at the initiative of Albin Haller creating in 1895 a section in Nancy. Then sections were created in Lyon in 1898, Lille and Toulouse in 1902,

Marseille and Montpellier in 1905. The Société then took the name of Société Chimique de France in 1906.

Scheurer-Kestner introduced a thematic section of industrial chemistry in 1894, but without any success. Thematic sections were created under the Presidency of Champetier. The first was the Division of Analytical Chemistry created in 1958, followed in 1964 by the Divisions of organic chemistry and of physical and mineral chemistry. Following the numerous attempts to strengthen ties between industry and the Société, the last created division was that of Industrial Chemistry in 2006. In 1984, the Société merged with the Society of Physical Chemistry and became the French Society of Chemistry. Finally, it took back the name of Société Chimique de France in 2008.

Itinéraires de chimistes, 1857-2007: the Société Française de Chimie and its Presidents

The editorial choice was to write the biography, scientific contribution and role at the French Chemical Society of its 75 Presidents in around six pages for each, which is quite short, including a short abstract in English. An Index of names is also included. For the first Presidents, we benefited of the insight that is given by elapse of time. But the book also includes biographies of the recent Presidents, as Armand Lattes who has been President of the Society until the end of the year 2007.

The biographies of the Presidents of Honour of the French Chemical Society were included. Eight of them never assumed the Presidency of the Society. As this book was to be devoted to well-known French chemists, the eight French chemists who received the Nobel Prize of chemistry were included. Only one of these was President of the Société, Henri Moissan. Two of them were Presidents of Honour, Victor Grignard and Paul Sabatier. The others, Marie Curie, Irène Joliot-Curie and Frédéric Joliot, Jean-Marie Lehn and Yves Chauvin, never had any responsibilities in the Society. We have, however, refrained from taking into account the Presidents of the Society of Physical Chemistry, which had also a long history, as this would have considerably increased the size of the book and the workload, with the risk of not completing the work in time for the anniversary of the Société.

Many of the Presidents of the Society have the expected profile of personalities known for their expertise in chemistry, often holding other institutional positions. Thus, among the 75 presidents, 44 are Academicians. Most of these were elected in the section of chemistry, but some have been elected in mineralogy (Sainte-Claire Deville, Pasteur), rural economy (Girard, Maquenne, Lindet or André), sci-

ence applied to industry (Portevin, Velluz) or as free academician (Bel, Hackspill, Tréfouël, Henri Moureu, Henri Normant). Berthelot, in 1873, was elected in the section of general physics.

Some of the Presidents of the Société have studied medicine or pharmacy. Some came from engineering schools, others have been trained at University, but not all of them took their baccalaureate, i.e. Scheurer Kestner who regretted it later. Besides those who have accumulated many institutional posts (Dumas), some such Clermont and Le Bel apparently did not seek to make a career, thanks to their personal fortunes. They however cultivated strong networks of friendship with chemists of their time.

Throughout its history, the Société has sought to reinforce its links with industry [Blondel-Mégrelis]. Some industrialists were elected to its head: Scheurer-Kestner, Lauth, Laire, Thesmar, Poulenc, Paul. Many of these manufacturers made recognised scientific works. But Pascalis, from the Ecole polytechnique, was proud to have "no scientific background", he was elected because of his position at the Chambre syndicale des produits chimiques. This work also led us to better understand the growth of different sectors of French chemistry, organic chemistry with the professor Auguste Béhal and its students Moureu, Blaise ou Tiffeneau, or inorganic chemistry around Georges Chaudron and its students Michel and Bénard.

Some affiliations appeared: Alphonse Combes was the nephew of Charles Friedel; Leon Lindet was the nephew of Aimé Girard; Henri Moureu was the son of Charles Moureu. The history of the Société is especially marked by the friendships among the first small group of chemists at the origin of the Société, and by the great friendship and solidarity that has existed between the Alsatian Wurtz, Friedel, and their students Clermont, Le Bel, Combes, Scheurer-Kestner. They dominated the Société during the years 1870 to 1890. They were very influential on the *Bulletin* editorial board, which became the place where atomism was defended by Wurtz. These Alsatian chemists were also among the founders of the French Association for the Advancement of Science (AFAS) in 1872 (Lauth, Wurtz, Friedel, Clermont, along with Girard and Grimaux) and the founders of the Ecole Alsacienne, a famous high school in Paris, in 1874 (Friedel, Clermont, Wurtz, and also Gautier). Grimaux, Lauth and Friedel signed the request for the review of the trial of Alfred Dreyfus in 1898, for which Scheurer-Kestner was heavily involved. In response to this engagement, Grimaux was dismissed from his post as Professor at the Ecole Polytechnique in 1898.

These chemists also played a role at the international level. Friedel was at the head of the Committee for the Nomenclature of Organic Chemistry, whose works

were presented in Geneva in 1892. The commission included Béhal, Bouveault (secretary), Combes, Gautier and Grimaux. Many of them participated in the actions of the International Union of Pure and Applied Chemistry (IUPAC) and Charles Moureu was its first President. Thanks to the involvement of Delaby, IUPAC was able to reorganise its activities after the Second World War.

The activities of these chemists was greater than the strict domain of science. Girard was a scientific journalist in the newspaper *La Patrie*. Girard and Balard were involved in the development of photography (at a time when taking a photo and develop it required a number of chemical operations). Le Bel published a dozen works in the *Bulletin* of the prehistoric French Society and gave to the Society the prehistoric cave of Eyzies, along with his house at, 250 rue Saint-Jacques, in Paris, where the Society is still resident. Many of these chemists have shown interest in the history of their discipline. Thanks to Berthelot, the late nineteenth century, the history of alchemy and early chemistry was rediscovered. Willm helped Dumas to publish the works of Lavoisier. Grimaux was one of the editors of Gerhardt's book. Tiffeneau was also interested in Gerhardt and his relations with Liebig. Delepine published numerous biographies of French and foreign chemists.

The difficulties encountered

The book has 49 authors, from among almost 600 people, i.e. 15% of the members of the Society, who are registered as interested by the history of chemistry. Many of the writers are thus chemists. Many exchanges between authors and five reviewers contributed to make information more reliable, a rather difficult task with such a large number of records covering 150 years of French chemistry.

To support their work, the authors have plunged with delight into archives, classic archives such as those of the Academy of Sciences, Ecole polytechnique, Ecole supérieure de physique et de chimie industrielle de la Ville de Paris (ESPCI), the National Archives for the files of careers of the teaching personnel; or more unexpected ones, such as those of the Bank of France (Pascalis) or the Prefecture of Police of Paris (for the chemists who were inspectors of industrial firms). The *Bulletin* of the Chemical Society of Paris, which became the *Bulletin de la Société chimique de France* in 1907, has been much used source for both the obituaries and the minutes of the directorial board of the Société [Bram and Golfier]. The more recent Presidents have helped by oral testimony or by writing themselves.

However, such work did not go smoothly. I would like to emphasise some problems that were met. Should more space be allocated to famous chemists, such as

Berthelot, Sainte-Claire Deville or Moissan, for whom books already exist, or keep the balance between all of the Presidents, in order to give information on the lesser-known chemists, such as Joseph Riban, Rodolphe Engel or Georges Pascalis? Should the older chemical terms be translated into modern terms, or keep their original form? Should the accounts be harmonised, which might seem necessary for a reference book, or should more freedom be allowed in style? The discussions to resolve such conflicts meant that the book was not published in July, 2007, as expected, but in January, 2008 [*Itinéraires de chimistes*].

This work had originally a single goal: the publication in 2007 of the biographical dictionary of Presidents of the Société. It has, however, allowed correcting erroneous information, such as the holder of the Presidency in 1901, who, contrary to what had been said by Armand Gautier in 1907, was not Berthelot, but Engel [Gautier]. It has produced a better understanding of the growth of certain sectors of French chemistry. It highlights the contribution of the Société to the internationalisation of research, through the IUPAC organisation and by the editing of scientific publications on the European scale. It actually has opened the door to many avenues of reflection on the French chemistry of the nineteenth and twentieth century, for example, what were the links of the Société with the Société de Chimie Physique, what was the role of the Society during World Wars I and II ? How to take into account the involvement of these chemists in the Conseil d'hygiène of Paris? Many other questions appear when reading the book! It should be of interest to compare this work with biographies concerning members of other chemical societies.

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