



International Organization for Chemical Sciences in Development

Pierre Crabbé Memorial Oration

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The death of any human being leaves behind a sudden vacuum, which is keenly felt by the relatives and friends of the dead person. But, in every generation, there are a few men and women who have such an outstanding impact on their times that, when they die, their contribution endures as a lasting monument and continues to be recognised by many people who never knew them personally. Such a man was Pierre Crabbé.

Pierre was born in Brussels in Belgium on 29 December 1928 (Table1). He trained first in Belgium as a Chemical Engineer and then moved to France, where he began his lifelong research work in Organic Chemistry. He took a Doctorate with Professor Dupont in Paris, involving studies of the chemistry and biosynthesis of terpenes, and then moved to Strasbourg as a postdoctoral fellow with Professor Ourisson, continuing on the theme of terpenes.

Table 1 Pierre Crabbé, 1928 - 1987. Education and Employment

	Education
1948-1952	Degree: Technical Engineer of the Chemical Industry School of Chemical Engineering Institute Meurice-Chimie, Brussels, Belgium
1954	Doctorate in Organic Chemistry University of Paris, Ecole Normal Supérieure Prof. G. Dupont
1956-7	Postdoctoral Fellow, University of Strasbourg Prof. G. Ourisson
1957-9	Postdoctoral Fellow, Wayne State University and Mexico City, Prof. C. Djerassi
1967	PhD, University of Strasbourg Prof. G. Ourisson
	Industrial Employment
1960	Joined the research laboratories of Syntex S.A. in Mexico City as Head of Laboratory
1963	Promoted to Assistant Director of Chemical Research
1964	Promoted to Director of Chemical Research
1968	Appointed General Manager of the Research Division of Syntex S.A. in Mexico
1973	Resigned from Syntex to work full time in academia
	Academic Employment
1959-1960	Instructor in Organic Chemistry Institute Meurice-Chimie, Brussels, Belgium
1962-1973	Professor of Organic Chemistry Ibero-American University, Mexico City 1965-1974
1965-1974	Professor of Chemistry, Doctorate Department National University of Mexico
1973-1979	Professor of Chemistry, University of Grenoble, France
1979-1983	Chairman of the Department of Chemistry University of Missouri Columbia, USA

Probably one of the most fateful moves in Pierre's life was his decision to take a postdoctoral appointment with Carl Djerassi in 1957, first as a Fulbright Fellow at Wayne State University in the United

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States and then at the Research Division of Syntex in Mexico City. This brought Pierre in to the very heart of the world's newly-developing steroid industry at a time when the corticosteroids and contraceptive steroids were emerging as exciting new medicinal agents and also exposed him to life in a developing country.

After a brief period back in France at the end of the 1950's, Pierré returned to Mexico in 1960 to work for the Syntex company. His success as an industrial chemist and research manager was marked by his rapid series of promotions, so that within eight years he was appointed General Manager of the Syntex Research Division in Mexico City.

Pierre was a man of remarkable energy and wide interests and a successful career in industry was by no means sufficient to satisfy him. He had started an academic career during his brief return to France in 1959. Once he had settled into his industrial post in Syntex he began to develop a parallel career, working as a professor at the Ibero-American University from 1962 onwards. From 1965 he also held a professorial position at the National University UNAM, where he played a key role in establishing a PhD programme in Chemistry. He supervised five PhD students in this period and also more than 50 undergraduate research theses. The main focus of Pierre's research work in the 1960s was on the chemistry of steroids, supplemented by a continuing interest in natural products. He recognised the growing importance of physical methods in structural chemistry and as well as making use of infrared spectroscopy and the new technique of NMR, he began detailed investigations of the applications of optical rotatory dispersion and circular dichroism in organic structure elucidation.

In 1973 Pierre returned to France to take up a full-time post in the Scientific and Medical University in Grenoble, where he held the Chair in Molecular Chemistry and initiated work on the synthesis of prostaglandins, which was to become another important theme in his research activities. He moved again in 1979, taking up a new challenge as Chairman of the Chemistry Department in the University of Columbia, Missouri, in the USA.

Throughout his academic career, Pierre Crabbé published more than 200 research papers and articles in chemistry journals. He was the author or co-author of 4 books, covering the subjects of terpenes, optical rotatory dispersion and circular dichroism and research in prostaglandins, to which should be added the list of more than 60 patents to his name resulting from his industrial chemistry research.

It was during this period as an academic in the 1970s that Pierre's third and last career began to take shape, in the field of international development in science (Table 2). In 1972 he went to Mali on his first mission as a UNESCO expert and three years later visited Brazil. In 1977 he carried out a survey for UNESCO of Latin American laboratories doing research on natural products, this mission taking him to Brazil, Chile, Cuba, Mexico, Peru and Venezuela.

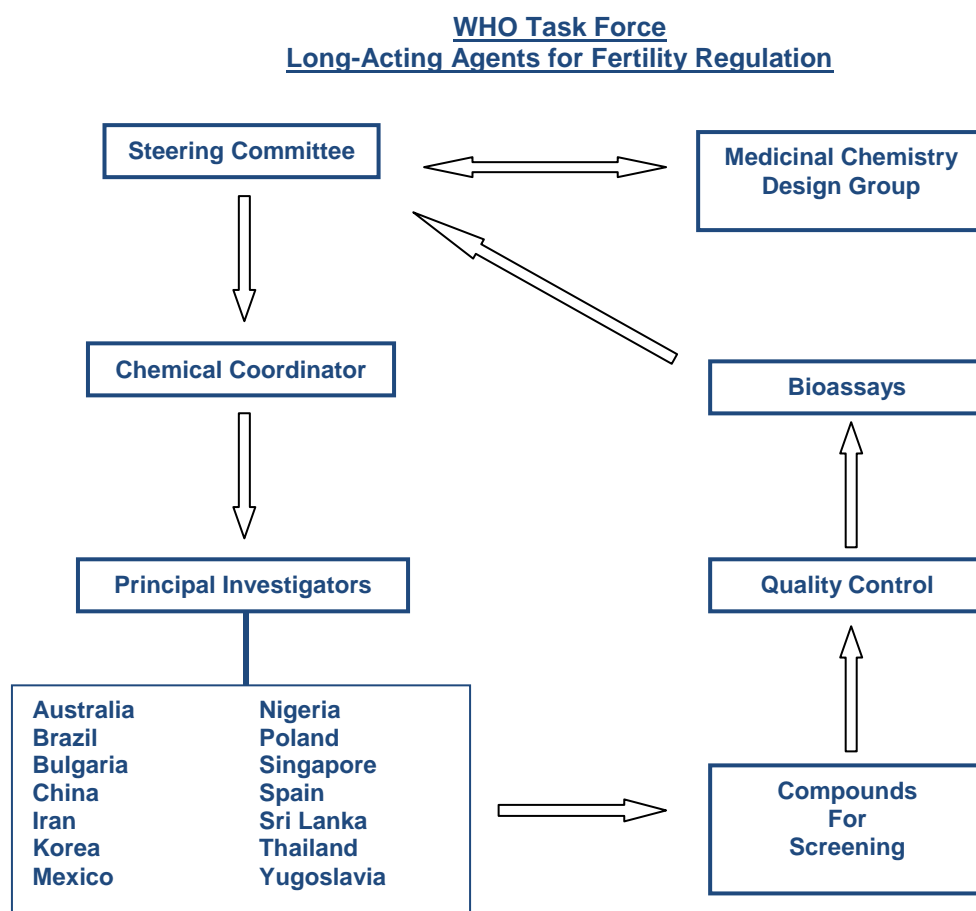
Table 2 Pierre Crabbé: Consultancy in International Agencies

1972	Consultant for UNESCO in Mali
1975	Consultant for UNESCO in Brasil
1977	Consultant for UNESCO in Latin America
1975-1987	World Health Organization Special Programme in Human Reproduction <ul style="list-style-type: none"> • Coordinator of the Chemical Synthesis Programme for Long-acting Agents in Fertility Regulation • Steering Committee member, Task Forces on Long-acting Agents in Fertility Regulation; Methods for the Regulation of Male Fertility; Fertility Regulating Agents from Plants

Of particular importance for Pierre's future career was his appointment as a Steering Committee member by the World Health Organization (WHO) Task Force on Long-Acting Agents for Fertility Regulation. In 1975, the WHO Task Force initiated an ambitious programme to develop new long-acting injectable steroids for fertility regulation in both men and women. Over a period of about five years, more than 400 new steroids were synthesised and were tested through the collaboration of the Contraceptive Development Branch of NIH in the USA. Pierre Crabbé acted as Chemical Coordinator of this work and the highly successful outcome of the project was to have a profound influence on his future approach to science in development.

The design of the novel steroids in this programme was carried out by a team of medicinal chemistry experts assembled for a special consultation by WHO. The plan (Figure1) called for the syntheses to be carried out by chemists working in academic laboratories, mainly located in the Third World. Pierre worked enthusiastically to motivate and coordinate these synthetic teams in more than a dozen countries. All of the newly synthesised steroids were passed to quality control to ensure their purity and then to bioassay. The evaluation of the results by regular meetings of the Steering Committee eventually led to the recognition of a potent, long-acting injectable progestin based on levonorgestrel and a potent, long-acting injectable androgen based on testosterone. Both of these substances are now in clinical trials with WHO.

Figure 1 Structure of WHO Synthesis Programme



This WHO programme can be judged as outstandingly successful, not only in the fact that the chemists delivered active new compounds which may be of clinical value, but also in the way that scientists from many different countries and backgrounds were able to work together in a productive and stimulating way on a problem of global concern. This programme has provided a model for a number of later projects, both in WHO and elsewhere.

Pierre Crabbé was not only a highly successful scientist: he was also a humanitarian with a deep concern for his fellow human beings. In 1981 he and a friend, Dr. Léon Cardyn, published a small book in French, 2 years later re-published in English¹ under the title "The Time for Another World". In it, Crabbé and Cardyn surveyed the broad panoply of human history and the problems currently affecting mankind - especially overpopulation, disease, poverty and corruption. They expressed horror at the continuing scandal of mass starvation and at the general plight of the world's poor and underprivileged:

"The greatest shame of our time is still to accept that every day tens of thousands, perhaps one hundred thousand people continue to die of hunger."

In an idealistic vein, they called for changes in patterns of behaviour by governments and individuals to redress the inequalities they saw.

But Pierre was not just an idealist: he was a visionary who also had his practical and pragmatic side, as befits a man of his scientific background. His wide experience and knowledge of people had encouraged him to believe that it *is* possible to change the world by hard work. He wrote¹ that:

"The power of will is a fundamental human quality leading to success. Some dynamic individuals, usually demanding for themselves, are also demanding for others living with them and working for them. They have a strong belief that people have more in themselves and are capable of achieving more than they realize".

With these words, we can obviously see that Pierre was describing his own characteristics. But equally, from his experiences around the world, Pierre had recognised that many of his fellow scientists shared his enthusiasm and dedication and he had seen that it was possible to use a system of international development aid for science to channel this enthusiasm into practical projects.

It must be stressed that, in talking about international aid, Pierre was very far from seeing this as charity or as a donor-receiver relationship. His personal humility and his view of such work as a partnership is again expressed in his book:¹

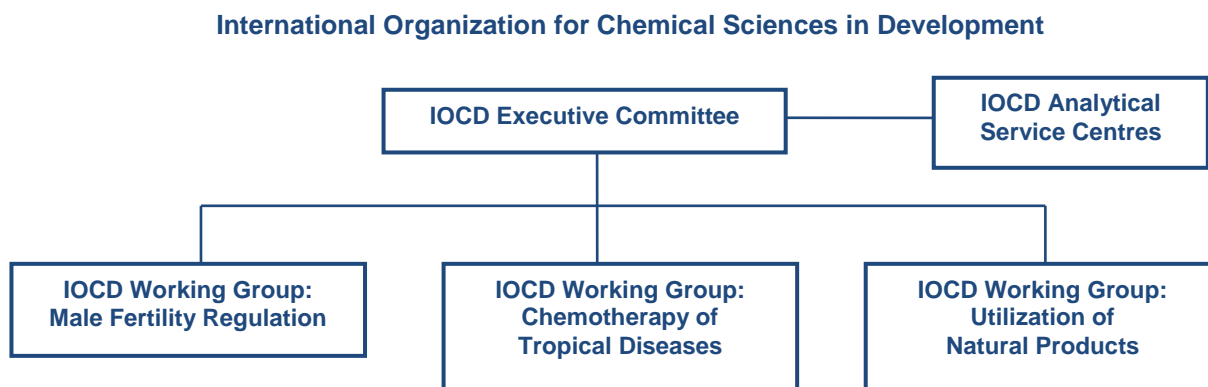
"One does not go to a country to "assist" people, but to work with them in a new kind of endeavour. We should keep in mind that in cooperative programmes we learn more than we teach and receive more than we give."

In 1981, Pierre Crabbé participated in the creation by UNESCO of a new organization – the International Organization for Chemical Sciences in Development (IOCD). He was appointed Secretary General of IOCD and moved to Paris in 1983 to work full time at this post. In 1985, IOCD separated from UNESCO and established offices in Brussels and in Mexico, with Pierre as Director of the agency.

Pierre Crabbé was an extensively educated and sophisticated man, of considerable charm and personal accomplishments. He spoke many languages- English, Spanish and French fluently and with a working knowledge of German, Dutch, Portuguese and Italian. As a result of his commitment and enthusiasm he was able to persuade people in many countries to join him in IOCD: his Council and Executive Committee included several Nobel Prize-winners and some of the most eminent chemists from many developing and developed countries. His charm and enthusiasm were also factors in the success which he achieved in winning funds and material support for IOCD from numerous sources, including international agencies, charities, industries and governments.

The structure which Pierre Crabbé established for IOCD is a reflection of his concerns for global problems and of his experiences in successfully running cooperative programmes (Figure 2). IOCD was initiated with 3 major working groups, covering the fields of Male Fertility Regulation, Tropical Diseases and Utilization of Natural Products, and a system of Analytical Service Centres based in Chemistry Departments in Industrialized Countries, which provide free spectroscopic and analytical measurements for chemists working in Third World Universities. Each of the Working Groups has a Chairman, Vice Chairman and small group of expert advisors and runs programmes in which chemists in the Third World participate in projects to synthesise or to isolate bio-active compounds for screening.

Figure 2 IOCD organizational structure



Pierre worked with boundless energy and commitment to promote and develop the activities of IOCD. He was constantly on the move, visiting scientists, industrialists and politicians around the world to attract their support. He did not neglect science, either, but continued to participate in Steering Committees of WHO and in the Working Group meetings of IOCD. He served on the Steering Committee of the WHO Task Force on Methods for Male Fertility Regulation for several years and was Chemical Coordinator of this Task Force's gossypol analogue synthesis programme. In March and April 1987, there was a large gathering of IOCD scientists in Mexico, overlapping with a joint meeting with the WHO Task Force on Methods of Male Fertility Regulation. Pierre was in his element at these meetings of WHO and IOCD in his various roles as scientist, advisor and organiser, and as always was charming and full of warmth and enthusiasm (Figure 3).

His death just a few months later, on 6th August 1987, in a traffic accident, was a shock and a tragedy to all who knew him. His wife, his three children, his friends and collaborators around the world were deeply shaken by the sudden loss. His organization, IOCD, was also shaken to the core, but the structure which Pierre had built, of Executive Committee and Working Groups, and the commitment to his cause which was felt by all the voluntary, unpaid members of IOCD, proved to be strong and enduring. IOCD has survived and continues to work as a monument to Pierre Crabbé's vision, that scientists of all countries can strive together to work and cooperate in projects aimed at alleviating suffering and promoting a better world. It is fitting, therefore, that we open this International Congress today by giving our applause in appreciation of the life of Pierre Crabbé – the man, the scientist, but above all the idealist who put his humanitarian vision into practice.

Figure 2 Pierre Crabbé (left) with Ebo Nieschlag, Mexico March 1987



1. Pierre Crabbé and Léon Cardyn, *The Time for Another World*. University Printing Services, Columbia, Missouri, USA, 1983.