



Marc Julia

### Marc Julia (1922–2010)

Marc Julia, the internationally renowned chemist, passed away on June 26, 2010 at the age of 87. We wish to give a respectful and affectionate tribute to a man who contributed enormously to the growth and influence of chemistry in France and Europe, training and inspiring a significant number of chemists in France and abroad.

Marc Julia was born on October 23, 1922 in Paris as the son of Gaston Julia, one of the most famous French mathematicians of the 20th century and of Marianne Chausson, the daughter of the music composer Ernest Chausson. He studied at the Ecole Normale Supérieure (Paris) and in 1946 he obtained his Diploma in Physical Sciences. Next, he moved to Imperial College in London where he received a PhD for his work under the direction of Ian Heilbron. Back in Paris, he prepared a second doctoral thesis, this time in the chemistry laboratory of the Ecole Normale Supérieure under the direction of Georges Dupont. He defended his research work in 1949 before a prestigious examination committee composed of Gustave Vavon, Charles Prévost, and Alfred Kastler.

As a consequence of his intensive work and ever-growing reputation, Marc Julia had many scientific appointments at the Ecole Polytechnique (1950–1959), the Ecole Nationale Supérieure de Chimie de Paris (1955–1970), and the Institut Pasteur (1957–1970) between 1950 and 1970. In 1963 he was nominated full professor at the Faculty of Sciences of Paris. In 1970, he became head of the department of chemistry of the Ecole Normale Supérieure and led this department until his retirement in 1992. In each of these prestigious institutions, he left the indelible memory of being a brilliant teacher and passionate and tireless researcher.

Marc Julia was one of the most influential personalities of the second half of the twentieth century working for the development of organic chemistry in France. His achievements in organic synthesis are numerous. He discovered new preparative methods of cyclopropane derivatives allowing an original synthesis of chrysanthemic acid. He was also a pioneer for using radical cyclizations to build five-membered rings and polycyclic molecules. His elegant work using the sulfonyl group for triggering new organic transformations culminated in a new preparative method of alkenes and polyenes: the Julia olefination, a well-known name reaction. He studied extensively prenylations inspired by biochemical mechanisms. His contributions in organometallic synthesis were tremendous and he developed several nickel-, palladium-, copper-, and iron-catalyzed reactions for forming new carbon–carbon bonds. He investigated carbenoid species and exploited ingeniously their electrophilic properties.

noid species and exploited ingeniously their electrophilic properties.

Marc Julia always tried to link the discovery of new reactions to the total synthesis of complex natural products. His syntheses of chrysanthemic acid, of psilocin found in hallucinogenic mushrooms, of lysergic acid occurring in rye ergot, of fredericamycin, and of avermectin derivatives are some successful examples of this strategy.

His commitment and determination to tackle scientific challenges were always associated with considerations of possible applications, preferably in health sciences. Marc Julia often said: “*if this can be useful, it’s better*”. This led him to develop active cooperations with industry at a time when interactions between public and private research were not as strongly encouraged as today. Thus, he had a long and fruitful collaboration with Rhône-Poulenc that led to his most spectacular result: a new process of industrial production of vitamin A, based on his work on sulfones.

When evoking the scientific work of Marc Julia, his close and fruitful collaboration with his brother Sylvestre, particularly concerning the chemistry of sulfur-containing compounds, should not be omitted. In 1961, the two brothers shared the Raymond Berr award of the French Chemical Society and the Chemical Industries Union in recognition of their work.

Throughout his life and beyond his role as university professor, Marc Julia strove passionately to motivate younger people and help them discover the beauty of science. He always emphasized that chemistry is a major science that offers societal and intellectual challenges. His booklet “Electronic Mechanisms in Organic Chemistry”, first published in 1959 and reissued several times, was a milestone in the teaching of organic chemistry during this period and undoubtedly contributed to popularizing modern organic chemistry with students.

He supervised more than 140 theses, and many of his former students or postdoctoral fellows occupy important positions in academic or industrial research. All of them were impressed by the extent of his knowledge, scientific rigor, high intellectual honesty, and communicative enthusiasm for research. He was convinced that the interest of young generations in science must be developed, and actively participated in the educational project “la main à la pâte”, which can be translated as “hands-on”, launched in 1996 by the French Academy of Sciences at the initiative of the Physics Nobel Prize winner George Charpak for primary school children.

Marc Julia worked for the closer integration of the various chemical communities and for the strengthening of the French Chemical Society. As chairman from 1994 to 1998, he promoted a closer relationship with the European Federation of

Chemical Societies, which became EuChemS in 2004. To improve the impact of French and European research, he played an important role in the reorganization of the different European journals of chemistry with the creation of the new European journals; “*Chemistry—a European Journal*” was launched in 1995, and the “*European Journal of Organic Chemistry*” and “*European Journal of Inorganic Chemistry*” in 1997.

Because of his exceptional career, Marc Julia received great recognition from his peers and from France. In 1977 he was elected member of the French Academy of Sciences and was also member of several foreign academies. He received many French and international scientific awards, including the CNRS Gold Medal in 1990. Notably, he was Chevalier des Palmes académiques, Officier de la Légion d’honneur, and Commandeur de l’Ordre National du Mérite.

To all these official distinctions the following must be added: the respect and admiration of all those who had the chance to be, like us, his students, or to be in contact with him. This tribute stands as the mark of deep appreciation of our community for the man, the professor and the scientist, that was Marc Julia.

*Jean-Claude Chottard, Daniel Mansuy*

Université Paris Descartes, Paris

*Jean-Yves Lallemand*

ICSN-CNRS, Gif-sur-Yvette

*Jean-Noël Verpeaux*

École Normale Supérieure, Paris

DOI: 10.1002/anie.201006207