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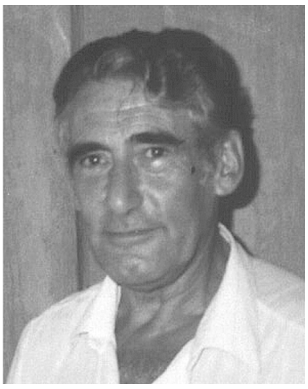
BIOGRAPHY AND BIBLIOGRAPHY



Professor FÈLIX SERRATOSA (1925-1995)*

Doctor Fèlix Serratosa, a reputed Chemistry Professor, died on January 11, 1995 in Barcelona, after a prolonged liver illness. Through his publications, attendance to chemical meetings and invited lectures, Dr Serratosa became a world-wide recognised authority in Organic Synthesis. His high human quality brought him to became a friend –in some cases at a level that could be qualified of intimate– of well known Chemistry Professors such as E. J. Corey and R. Hoffmann (both of them Nobel laureates), D.A. Evans, K.B. Sharpless, E. Vögel, etc. In the following lines, information is afforded on several aspects of his teaching activities, research publications, «science policy» opinions, and humanistic and religious interests.

Teaching

From a formal point of view, the academic position of Dr Serratosa was that of a *Profesor de Investigación* (Research professor) in the Spanish *Consejo Superior de Investigaciones Científicas* (CSIC) but along his scientific life he was, in a way or another, closely involved in University teaching.

Dr Serratosa complemented his oral teaching with the publication of some books. *Heurisko. Introducción a la Síntesis Orgánica*, published in 1975, deserves to be considered as the *first modern book* on organic syntheses because other books with a similar underlying «design philosophy» (the «disconnection approach») were published later on: Turner's book in 1976; Warren's first book in 1978; etc.

In the middle of the eighties, when Serratosa was considering the preparation of a fully revised and amplified edition of *Heurisko*, Elsevier Science Publishers established contact with him and the final result was the publication of *Organic chemistry in action. The Design of Organic Synthesis* (Elsevier, 1990). In this book the principles, the strategies and the methodologies for designing organic syntheses, and the «heuristic principles» governing them, are presented in a simple yet rigorous way; throughout the book, special emphasis is made on the «Lapworth-Evans model» of alternating polarities.

Organic chemistry in action includes also a copy of the instruction manual of the program CHAOS (Computerisation and Heuristics Applied to Organic Synthesis), and the corresponding diskette, both of them prepared in collaboration with Josep Xicart. CHAOS, which runs on a IBM PC and compatibles, was written for beginners as a heuristic aid for designing organic syntheses.

The first edition of *Organic chemistry in action* had an excellent acceptation and was exhausted in less than a year. This led Elsevier to press Serratosa to prepare a revised second edition, a charge that he accepted in spite of his declining health. Serratosa died leaving the revision at a very advanced stage and thanks mostly to the efforts of Dr Núria Casamitjana and Dr Josep Xicart (with some help from the present writer) a completed and fully revised manuscript could be presented to Elsevier. The second edition of *Organic chemistry in action* was published in 1996.

In this exhaustedly revised second edition, some completely new material and even completely new chapters were introduced and the former Chapter 11 and Appendices 2, 3 and 4 devoted to computed-assisted organic synthesis were rewritten and constitute now part B of the book. This Part B is co-authored by Josep Xicart.

Research

Dr Serrratosa research was carried on at the CSIC laboratories in Barcelona and/or at the Universitat de Barcelona (UB)

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and Universitat Autònoma de Barcelona (UAB) (from 1977 on exclusively at the UB). Together with a large number of co-workers, he published just a hundred research papers in scientific journals such as T*etrahedron, Tetrahedron Letters, Journal of Organic Chemistry, J.C.S. Chem. Comm.*, etc. Most of the papers reported work from the twenty-three doctoral theses that he supervised.

Organic synthesis was the general *leit-motive* underlying most of his work and in this context an early paper singly authorised by him («An Acetylenic Approach to Patulin Derivatives», *Tetrahedron*, 1961, *16*, 185-191) is especially significant. Within the Spanish chemical research of the time, the paper represented a very innovative and refreshing work and, within the international chemical community, an incipient retrosynthetic analysis was described for the first time (three years before that the concept were explicitly formulated by E.J. Corey). This paper appears as reference number one in Theilheimer's *Trends,* 1961, *Vol. 16*.

The only systematic study directed to explore the synthetic utility of mono–, bis– and tris-(α-diazoketones is that of Serratosa's group. As a result of their efforts a new procedure for the preparation of cyclopropanes was set up and interesting compounds as semibullvalene and bullvalene itself were synthesised.

Another field almost exclusively investigated by Serratosa and co-workers is that of acetylenic diethers. Several diethers were prepared and among them di-*tert*-butoxyethyne deserves especial mention because –up to now– is the only really stable (using here the word «stable» in the common parlance sense) member of the series: its preparation is described in the 1987 volume of the reputed series *Organic Syntheses*. From this diether the full series of cyclic oxocarbons (deltic, squaric, croconic acids and related compounds) was prepared.

In an important paper published in 1986 (E. Carceller, M. Ll. García, A. Moyano, M.A. Pericàs, and F. Serratosa, «Synthesis of Triquinacene Derivatives. New Approach Towards the Synthesis of Dodecahedrane», *Tetrahedron*, 1986, *42*, 1831-1839) the published (and unfruitful) «strategies» for the synthesis of dodecahedrane, $C_{20}H_{20}$, were carefully analysed and a new synthesis *via* the «narcissistic coupling» of a triketone ([5.2.1.$0^{4,10}$]decan-2,5,8-trione) was proposed. This particularly elegant synthetic project gave rise to a lot of excellent chemical work and, although unsuccessful, it helped to consolidate Serratosa's international prestige in the field of polycyclic cage structures.

Dr Serratosa received several honours and distinctions: from Col.legi Oficial de Químics, *Award «Alquimia-1966»*; from Ministerio de Educación y Ciencia, *«Encomienda con placa de la Orden Civil de Alfonso X, el Sabio», 1967*; *Award «Fundació Catalana per a la Recerca», 1991*; from Generalitat de Catalunya, *Medal to scientific excellence «Narcís Monturiol», 1992*.

Science policy

When convenient, Dr Serratosa defended openly and publicly (and in certain circumstances, even bravely) his ideas on what could be called «science policy». In this context, writings 17, 20, 21, 25, 28 and 32 in the adjoined relation «Essays, Scientific Divulgation» can perhaps be singularised. He was a passionate defender of pure, basic or fundamental research; one of his favourite sentences was that of J.J. Thomson: «Research in applied science provokes improvements; research in basic science provokes revolutions». In his last contribution to the subject (above-mentioned paper 32) he proposes six theses and in thesis number 1 he says: «S*cientists must, above all, produce Science ... for the same reason that poets produce Poetry or philosophers produce Philosophy ...*».

Humanistic and religious interests

Serratosa's humanistic and religious interests were ample and varied, as shown by his book *Khymos* and the adjoined list of essays. Here again, perhaps some contributions (publications 1, 3, 4, 9, 15 and 36) deserve especial mention. He did not accept Snow's «two cultures» division and taking as reference point Terentium's classical formulation «*Homo sum; humani nil a me alienum puto*», he was in favour of the existence of a *single humanistic culture*.

As a consequence of his interests in non chemical fields, Serratosa has been, up to now, one of the few professors belonging to a Faculty of Science who has been invited to be a member of doctoral evaluation committees in the Faculties of Philosophy and of Geography and History.

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