

DOCUMENTS AND MINUTES OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
MICHAEL J. S. DEWAR**

The special committee of the General Faculty to prepare a Memorial Resolution for Michael J. S. Dewar, Professor of Chemistry & BioChemistry, has filed with the Secretary of the General Faculty the following report.

John R. Durbin, Secretary
The General Faculty

**IN MEMORIAM
MICHAEL J. S. DEWAR**

Michael J. S. Dewar died on October 10, 1997, in Gainesville, Florida, at the age of 79. His beloved wife of fifty years, Dr. Mary Williamson Dewar, a talented scholar in her own right, preceded him in death in 1994. As suggested by their dear friend, Nobel Laureate Sir D. H. R. Barton, the two of them probably are now "united in a never-ending discussion on the intellectual meaning of life." Two sons, C. E. Steuart Dewar and Robert B. K. Dewar, and three grandchildren survive them.

Born in Ahmednagar, India, on September 24, 1918, where his father was a civil servant for the Crown, Michael Dewar was sent to England at the age of 8 to obtain his formal education. After matriculating at Winchester, where one of his "fondest" memories was the cold showers he took each morning, Michael received his B.A., M.A., and Ph.D. from Oxford University (Balliol College), the last in 1942. Considering his excellence in all academic subjects, it is a somewhat amazing and very happy circumstance that he chose organic chemistry for his career. As a young chemist in an industrial chemistry position, Michael authored his first highly influential book, *The Electronic Theory of Organic Chemistry*. This remarkable monograph was the first to treat organic chemistry in the context of molecular orbital theory, which was in its infancy at the time. His genius was so overwhelmingly apparent that he was appointed directly to the Chair in Chemistry at Queen Mary College of the University of London (1951), bypassing all of the customary junior positions. Some of us who knew him later still have difficulty envisioning this intense, highly creative, and research-oriented genius in the demanding administrative role of Chairman, but he was indeed highly successful even in this unlikely role.

Michael then shocked the world's chemical establishment, especially that in Great Britain, by accepting the Kharasch Chair at the University of Chicago in 1959. He never concealed his amusement at having contributed so greatly to the "brain drain" across the Atlantic. He again stunned the scientific community in 1963 by moving to The University of Texas at Austin to accept the very first Robert A. Welch research chair and to exploit the new and "powerful" computer (less powerful than most current personal computers) at our university. What Michael and his research group did with this computer in developing his semi-empirical molecular orbital methods is nothing short of astounding. Michael was to spend the most productive and probably the happiest years of his career here at the University of Texas. His final move, to the University of Florida as Graduate Research Professor, came in 1989. He retired in 1994 as Professor Emeritus at Florida.

Michael's research career spanned a truly astonishing six decades. He authored six books and about 600 research papers, while training more than 180 collaborators. He broke onto the international research scene in 1943 with a paper that is still talked about with near reverence. In that paper he not only elucidated the structure of a natural product (stipitatic acid) that had confounded the experts in the study of natural products, but he also conceived of an entirely new aromatic system (tropolone), which would help found the new research area of non-benzenoid aromaticity. He followed that triumph by proposing the intervention of a π -complex in the benzidine rearrangement, an insight that evolved into the Dewar-Chatt-Duncanson model for such complexes involving transition metals.

It was in the decade of the 1950s that Michael published his classic series of six nearly impenetrable but tremendously important theoretical papers on perturbation molecular orbital (PMO) theory—back-to-back in the *Journal of the American Chemical Society*. The staid old *Journal* was by no means enamored of theoretical chemistry and even less inclined to publish a long series of papers. However, Michael was not accustomed to even *hearing*, much less *taking*, “no” for an answer, and he ultimately and probably predictably prevailed in this issue. Then, shortly after coming to Austin, Michael began to bring to fruition his dream of executing chemistry on the computer with his now famous semi-empirical programs SCF-MO, MINDO, MNDO, DEWAR-PI, AM1, AND SAM-1. Michael was especially proud of the fact that whereas experimentalists at that time could not detect transition states, these fascinating species represented no major problem for his theoretical methods.

In reviewing his scientific career, in an article entitled “Some Comments on A Semiempirical Life,” (*The Chemical Intelligencer*, January, 1997), Michael posed the rhetorical question, “What has been my most important contribution to Chemistry?” He answered it with “I was the first organic chemist to really find out what quantum theory is about and to use it to interpret chemical behavior.” This is a statement that stands unchallenged and characterizes his unique role as a scientist who had an encyclopedic knowledge of organic chemistry and the theoretical underpinnings of the subject.

It is a measure of Michael's status as a true genius that he had such a tremendous impact on the application of mathematical techniques to the understanding of molecular properties. This accomplishment was in spite of the fact that his formal training in mathematics left much to be desired, at least in his opinion. Thus, as stated in his autobiography, *A Semiempirical Life*, published in 1992, he found “the lack of any instruction in mathematics both strange and deplorable,” when he was a student at Balliol College.

The honors accorded to Michael in his long and distinguished career are far too numerous to mention here, but include the Tilden and Robert Robinson Lectureships of the Chemical Society (1954, and 1974, respectively), the Davy Medal of the Royal Society of London (1982), the James Flack Norris Award of the American Chemical Society (1984), the Tetrahedron Prize for Creativity in Organic Chemistry (1989), and the American Chemical Society Award for Computers in Chemistry (1994). It is especially notable that he was a member of *both* the National Academy of Sciences and the Royal Society of London, a status achieved by extremely few scientists. In view of the significance of his contributions to chemistry, it is regrettable that the Nobel Prize was not to be among Michael's many honors.

Michael will be remembered by many for his heroic vision of chemistry, his sparkling intellect, and his good humor. He will also be recalled as a scientist frequently involved in controversy and as one who sometimes treated his adversaries in what might kindly be described as a prickly manner—one writer (NLB) of this resolution was himself occasionally a target of Michael's aggressive criticism. One vignette that perfectly captures this side of Michael was described by E. Thomas Strom, in the January, 1998, issue of the *Southwest Retort*. In 1970, Strom was in the audience for a talk by Dewar in which Michael asserted that the Woodward-Hoffmann Rules were obviously foreshadowed by work reported by M. G. Evans in the 1930s and thus were basically derivative rather than innovative in nature. This remark caught the attention of Roald Hoffmann, who was a prominent occupant of a front-row seat for the talk. His was the first hand to shoot up after the presentation, and he asked if the Rules were all that obvious, why didn't Dewar himself devise them. Michael's acerbic and succinct response was, “I suppose I should have, really.”

The many graduate students, postdoctoral fellows, and visiting scholars who studied with Michael remember him in yet a different way. They knew him as a person of unlimited and uncontrollable energy, where this energy was provided by an inexhaustible passion for and fascination with research that encompassed an amazing variety of topics. Many of his co-workers were treated to the scene of seeing Michael fling himself back in his office chair and laughing as an interesting new result was presented to him. With respect to such occasions, it was well known among his colleagues that Michael never described research, whether his or that of others, as brilliant or important. Rather, the greatest compliment he would give to a piece of work was to describe it as “amusing,” or in rare cases, “extremely amusing.” All of his students learned to consider his use of such terms as the highest possible compliment and strove to merit this accolade. Clearly Michael saw research as an adventure to enjoy and not as a vehicle to be used to elevate his own status. His influence on the field of chemistry has been of major importance and his scientific legacy will continue for years to come.

We would be remiss if we failed to mention yet another aspect of Michael’s persona: The social events that he and Mary hosted and their unexcelled generosity to their guests. Their cocktail parties were without peer, and one cannot forget the sight of Michael cruising through their living room, a pitcher of Manhattans in one hand and a pitcher of martinis in the other; one’s glass was never empty. Those guests who did not imbibe alcohol were not left to fend for themselves, because sparkling water and orange juice were always close at hand; they did, however, have to serve themselves! And their dinner parties were memorable for the quality of food and wine that was served to their fortunate guests. Many of their acquaintances do not know that Michael was a remarkably good chef, particularly when it came to Chinese and Indian cuisine; indeed Michael developed a sufficient number of customized recipes for Chinese dishes that a self-published cookbook resulted. His accomplishments in the kitchen are probably a reflection of his roots as an experimental organic chemist, despite the fact that he forswore the laboratory bench for the computer in the latter stages of his scientific career! As Michael was wont to say, “Organic chemistry is the best preparation for anything.”

This Memorial Resolution was prepared by a special committee consisting of Professors John C. Gilbert (Chair), Allen J. Bard, and Nathan L. Bauld.

Distributed to the Dean of the College of Natural Sciences, the Executive Vice President and Provost, and the President on May 28, 1999. Copies are available on request from the Office of the General Faculty, FAC 22, F9500. This resolution will be posted under “Memorials” at: www.utexas.edu/faculty/council/