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Book Review

IUPAC Photochemistry-6 (*Pure and Applied Chemistry*, Vol. 49, pp. 223 - 398), edited by A. Gilbert, published by Pergamon Press, Oxford, 1977; 176 pp.; price (hard cover) $ 32.00, £ 18.00.

This slim volume presents the plenary lectures from the Sixth International Symposium on Photochemistry held at Aix-en-Provence in July 1976; it is edited by Dr. A. Gilbert. As usual, the fare is varied and most organic photochemists will find something of interest. N. C. Baird reviews the current capabilities of *ab initio* calculations, paying particular attention to the calculation of potential energy surfaces and to substituent effects on energy gaps. He stresses the importance of using large basis sets and of including configuration interaction and he urges experimentalists to treat the results of calculations with educated caution, J. E. Guillet summarizes his recent extensive work on polymer photochemistry, showing how data may be obtained on energy migration along polymer chains and on molecular mobility and its dependence on temperature, striking variations in photochemical behaviour being found at or around the glass transition temperature. J. J. Turner and his coworkers describe their matrix isolation work on metal carbonyls giving a detailed and closely argued analysis of the spectral changes which occur on irradiation; they also extend their arguments to make predictions of the room temperature solution photochemistry of $Cr(CO)_6$ and $Fe(CO)_5$. There are two articles on visual pigments; one, by K. Nakanishi, describes the use of high pressure liquid chromatography, coupled with a variety of excitation techniques and analysis by high resolution nuclear magnetic resonance, to study the photobleaching of rhodopsin and its dependence on environment. T. Rosenfeld *et al.* carefully examine available evidence, perform experiments over a wide range of temperatures and conclude that the classical *cis–trans* isomerization description of the primary photoevent in vision is correct. D. G. Whitten *et al.* summarize their recent fascinating work on the photochemistry of chromophores incorporated in fatty acid monolayers and illustrate the wide applicability of the technique as an aid to understanding photochemical mechanisms. Their account includes a discussion of their controversial work on water dissociation. P. J. Wagner discusses hydrogen abstraction by triplet benzoyl compounds, H. E. Zimmerman the use of single-photon counting in studies of intramolecular energy transfer and there is more, much more — 14 articles in all. None of the articles are primary sources of information but most of them present readable reviews with good bibliographies. It is unlikely, in view of the catholic coverage, that individuals will buy the book, but it can be consulted with profit in libraries.

M. J. Pilling