

### Book review

---

*Photoelectron Spectroscopy*, by J.H.D. Eland, Butterworths, London, 1974, 239 pages, £6.00

Dr. Eland's book provides a thorough introduction to the major aspects of valence level photoelectron spectroscopy. The first book in this field was that by D.W. Turner and co-workers, which adopted a quite different and complementary approach, dealing essentially only with spectra and interpretations for small molecules.

In his Preface Dr. Eland suggests that he is aiming at the undergraduate, and certainly the treatment is primarily experimentally based and non-mathematical. However, it is doubtful whether many undergraduates would wish to purchase a book which, after all, is dealing with a fairly specialised topic. The reviewer cannot agree that the photoelectron spectrometer will soon take its place in the laboratory beside other spectrometers which are currently used for analytical/structural routine analyses. In any event, the book by Baker and Bettridge which deals not only with UV, but also X-ray photoelectron spectroscopy, and is lower priced, would probably be a better buy for the undergraduate.

UV photoelectron spectroscopy has made minor contributions to organometallic chemistry, particularly in the context of fairly small molecules of reasonably high symmetry, such as metal carbonyls and alkenylsilanes. Only a small portion of the book (34 pages) deals with the applications of the technique in chemistry; the major part of the book (194 pages) deals with principal experimental methods, ionisation, electronic energies of ionic states, photoelectron band structure and dissociations of positive ions. References are given up to the end of 1972. The book is readable and reasonably critical. Currently only a minority of chemists, perhaps those who could loosely be described as the "Oxford group", reproduce spectra showing ionisation energies decreasing from right to left, and it is unfortunate that in Dr. Eland's book we find the same convention.

In conclusion, the book provides a good introduction to the subject, but it does not obviously supercede other texts.

*School of Molecular Sciences  
University of Sussex  
Brighton BN1 9QJ Sussex (Great Britain)*

M.F. LAPPERT