

# reviews

## Introducing HLA

Heather M. Dick

*The HLA System: An Introductory Survey.* (Monographs in Human Genetics, Vol. 7.) By A. Svegaard *et al.* Pp. viii+103. (Karger: Basel, London and New York, 1975.) SF/DM 38; \$14.75.

THIS is an excellent little volume which sets out with a refreshing lack of pretentiousness to give a simple introduction to the HLA system. The authors certainly achieve their main purpose and offer a text which will be invaluable to those who wish to gain access to exciting new developments.

The HLA antigens are no longer the specialised subject of a few devoted transplantation workers. The wide range of problems in biology and clinical medicine which can be related to the major histocompatibility system is evidence of the explosion of knowledge which has occurred in this subject.

After a clear exposition of the components of the HLA system, in particular the genetics, we are led straight into the most recent and exciting work on the similarities between human and mouse immune response mechanisms. The section on biochemistry is brief—reflecting the paucity of information on this aspect until very recently, but introducing the reader immediately to newer and more rewarding developments on the structure of HLA substance. The practical applications of studies on HLA antigen frequencies are dealt with adequately enough for the general reader.

The authors are perhaps too modest in not including more of their own excellent work on the statistical and technical problems of estimating associations between specific HLA antigens and diseases. They also shy away from a detailed discussion of the mechanisms which might be responsible for such associations. Although they list several impeccable reference sources dealing with this problem, it would probably be helpful to readers who are not intimately involved in the current work to have the arguments for and against the suggested hypotheses presented in some detail. Perhaps the authors felt they had already made it obvious that their preference was for the genetically de-

termined "immune-response gene" hypothesis, but it would not weaken their argument to expose the other hypotheses of molecular mimicry, or HLA as virus receptor to the cold light of print.

The final section on methodology is adequate to provide background information for those not directly concerned with technique, although the difficulties of explaining MLC typing to an uninitiated audience are painfully obvious. There is a very full bibliography to complete the text.

The material presented is up-to-date and the authors are to be congratulated

on presenting a useful and readable volume which includes so much contemporary material. Textual misprints are a minor source of annoyance. The occasional lapses from colloquial English by the team of Danish authors might have been edited out, but do not detract in any way from the value of the book. Certainly, this reviewer could not hope to do as well in Danish. □

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## Hückel model

*The HMO Model and Its Application.* Vol. 1: Basis and Manipulation. By Edgar Heilbronner and Hans Bock. Pp. xv+454. (Wiley: London and New York; Verlag Chemie: Weinheim, February 1976.) £16; \$35.20.

THIS is the first volume of a three-volume treatise which is intended to acquaint "the practically oriented chemist having a relatively modest mathematical background" with the principles of the Hückel molecular orbital (HMO) model and with the simple techniques with which it can be used to obtain approximate but very useful qualitative results without recourse to a computer. Volume 1 contains all the theory and applications, and 250 problems; volume 2 will contain the solutions to the problems; and volume 3 will contain HMOs and derived quantities for simple  $\pi$ -electron systems.

This all seems splendid, but I cannot recommend the practically oriented chemist to rush out for his copy, and I doubt whether he would if I did. One reason is that this volume alone costs £16, so that the whole set is going to add up to a lot of money. Furthermore, for all that the authors claim to "fit the intuitive conceptual world of the chemist", there is not really very much discussion of the chemistry. Coulomb integrals, for instance, appear as numbers, with due acknowledgement to Streitwieser but no attempt to relate

their values to the chemist's notion of electronegativity, which indeed is not mentioned anywhere. More seriously, the treatment of reactions is now badly out of date, the book being an unrevised translation of the 1968 German edition; it is a great pity that the opportunity was not taken to add, for example, an account of the frontier orbital method, which has proved so fruitful in recent years.

Other criticisms, which I make with some reluctance because I am in sympathy with the authors' intentions and find a great deal of useful material here, are that the style is intensely turgid and polysyllabic, and that some mathematical derivations are given in painful detail, whereas other results are quoted without the proof which might quite easily have been given. Finally, I disagree myself with the authors' policy of saying very little indeed about the deficiencies of the HMO model and about the way they can be overcome in more elaborate methods.

I do not underestimate the difficulty of putting molecular orbital theory over to the non-mathematical chemist. This is not a bad book by any means, but it is too heavy, too expensive and too late.

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