

## Book Review

*Works intended for notice in this column should be sent direct to the Book-Review Editor (M. M. Woolfson, Physics Department, University of York, Heslington, York YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.*

**Modern aspects of ligand field theory.** By C. K. JØRGENSEN. Pp. viii + 538. Amsterdam: North Holland, 1971. Price f. 100.000, \$ 29.50.

'Dear mobilists and friends, do not loose (*sic*) courage when meeting a fixist, because all human beings are highly valuable; do not waste too much time on meta-work in committees talking about what work could be done; and try to find out what to do next. It might be the origin of bright and ever-lasting enthusiasm (*sic*)'.

Thus Professor Jørgensen closes his latest book. Not exactly, you may say, what you would expect to find in a treatise on ligand field theory but Jørgensen has long-standing claims to being one of the more unusual, if not idiosyncratic authors concerned with the chemical bond. I have never been quite able to understand how he covers so much ground for we have here the usual *mélange* of theoretical chemistry, coordination chemistry and rather eccentric philosophy. You have to brace yourself pretty hard to stay with it but it can turn out to be rewarding provided you have gone through some more traditional approaches to the subject(s).

The first two parts are concerned with one- and two-electron properties and takes us into theories of atomic and molecular structure. At times we are given some new ideas and insights; Jørgensen is at his best on such matters as Madelung potentials ('the calculation that somebody living in Europe has his electrons attracted to the extent of some  $1.2 \times 10^{18}$  kcal by the nuclei of a girl living in

Polynesia . . .') and electronegativity but his discussion of molecular orbital theory is less than convincing. The third part entitled 'Specific effects induced from experience' contains some interesting sections including some new data on photoelectron spectroscopy and a discussion of the relation between the electron-pair repulsion model for molecular stereochemistry, Walsh's rules and the second-order Jahn-Teller effect. Relativistic effects form part IV and some readers may find the speculations on the post-transition group elements and the superheavy elements to be worth while (oddly, there is no reference to the recent claim, since apparently disproved, for the production of element 114). A final section on 'the world as a theatre' gives us a full-frontal exposure to some philosophical hobby-horses.

The information content of the book is enormous and it is that fact which makes me think that Departmental libraries should find a place for it. But it is also an effective answer to those colleagues who continue to maintain that present-day science is without its characters, and that its logical structure is established to the point of being inhibitory.

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