

BOOK REVIEW

J. STRAUB and K. SCHEFFLER (Editors), **Water and Steam: their properties and current industrial applications**. Pergamon Press, 1980, xx + 684 pp. Price £45.00.

THIS book contains the proceedings of the 9th International Conference on the Properties of Steam, held by the International Association for the Properties of Steam in Munich in 1979, 50 years after the First ICPS held in London. Since 1929, the problem has been that the steam engineers' requirements are always in advance of what the scientist can offer, and to this is now added the problem of how best to package the considerable quantities of scientific information which are available so that the engineer can use them.

The first conference was concerned solely with equilibrium thermodynamic properties—, these are still given prominence, but an almost equal share is given to transport properties. For each of these there is a review of the current status of the work of IAPS in digesting and packaging the available data, followed by theoretical studies and papers detailing new measurements of relevant properties, both for ordinary water and heavy water.

Then follows a series of papers, again both review and experimental, dealing with allied properties such as surface tension, refractive index, and ion product. The final section is entitled "power cycle chemistry" and ranges from studies of the behaviour of pure iron in pure water to reviews of the impurities found in a survey of operating steam plants.

Even this cannot show the full range of topics of some 70 papers: for example, room has been found for a discussion of the first ICPS by one of its participants, Professor H. Hausen and for a review of the fluctuation-dissipation theorem by Professor R. Kubo. There are accounts of the meta-stable states of water, of the phase diagrams of steam plus common impurities, and of binary mixtures in which steam is one component.

This wide range of papers reflects the breadth of the IAPS, which is neither a member of ICSU (because of its engineering interests) nor of WFEO (because of its scientific interests). In a world in which the need for stronger links between science and engineering is constantly being stressed, the isolation of the IAPS is evidence of the failure to translate such words into reality.

The average standard of the contributions is high. Although only a limited number of specialists will find useful the whole of the book, many readers of this review will find something of interest. The book is made from camera-ready copy, with the inevitable short-comings in equation-settings and of a mixture of type-faces, but the final product is legible and considerable trouble appears to have been taken with the illustrations. Here and there are some examples of non-standard English, but there are few misprints and the book is serviceably bound. Most readers would benefit if a copy of the book were available to them.

S. ANGUS