The experimental results reported in this note clearly indicate that wrought and heat-treated HS 21 (and presumably Vitallium, Vinertia, etc.) could serve as a useful substitute for the wrought Co-Cr-W-Ni alloy HS 25 now used in some surgical implants, due to its adequate strength and ductility as well as its superior crevice corrosion resistance. Its higher tensile strength should make wrought HS 21 more acceptable from a fatigue standpoint and its higher hardness and microstructure from a wear standpoint than as-cast HS 21. To be sure wrought and heat-treated HS 21 is more difficult to cold form and machine than stainless steel, yet its vastly superior crevice corrosion resistance makes it a much safer, albeit more expensive, permanent implant material.

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T. M. DEVINE
F. J. KUMMER
J. WULFF
Massachusetts Institute of Technology, Department of Metallurgy and Materials Science, Cambridge, Massachusetts, USA

Short Notice

Polymers in Space Research

Edited by C. L. Segal, M. Shen, and F. N. Kelley

Marcel Dekkar, $24.50 (£11·50)

This volume is based on the papers presented and discussed at the symposium on Polymers in Space Research held at the Western Regional Meeting of the American Chemical Society in Pasadena, California from 15 to 17 July 1968. It is divided into three sections: Recent developments in the synthesis, characterisation and evaluation of thermally stable polymers; properties of polymers at low temperatures; and solid propellants. The majority of the papers are written at a level intended for specialists in the field and give an indication of recent developments within these fields rather than an introduction to the topic as a whole. Furthermore, their emphasis is mainly on the phsycial and chemical aspects and, whilst this is to the advantage of the specialist scientific research worker, it makes them less useful for the technologist who wishes to aquaint himself with the information on polymers which has been generated by the needs of the space programme. Thus while it is possible to recommend this book to those who have a strong interest in one or more of the three major topics it covers, it is not, in the opinion of the reviewer, suitable for more general use.

D.A.W.

Mass Transport in Non-Metallic Solids

Proceedings of the British Ceramic Society, no. 19, March 1971.

This meeting was the third one organised by the Basic Science Division of the British Ceramic Society in the last seven years that has dealt with point defects and mass transport in non-

metallic solids (which in practice has meant ionic solids). This time, however, there was less emphasis on alkali halides and thirteen out of the seventeen papers were concerned with oxides. Most of these were diffusion studies using a wide variety of techniques. The practical application of oxides which have unusually high ionic conductivity, for use as solid electrolytes in fuel cells, was reflected in a number of papers on β-Al_2O_3, yttria and thoria-stabilised zirconia.

One of the most interesting recent developments has been the discovery of planar defects associated with non-stoichiometry in oxides and also found in mixed oxides. These may be strikingly observed by electron microscope lattice imaging techniques. However, the effect of such defects on mass transport is a new area for investigation.

E.L.