assembled, as this was, from pieces done at different times by different translators. Place-names follow several different systems of translation or transliteration, and are often misspelt in addition. Very oddly, some initial Y's are printed as G's (Genisey and Gana, for instance, for Yenisey and Yana). The old bugbear of re-transliterating Western names from Cyrillic has led to Elzmir for Ellesmere (p. 265), Kanfi for Cagni (p. 117), Quarayaq and Qariaq for Qarajaq (p. 124, 125), and many other curiosities. Table 21 (p. 56) contains three numerical errors, three misprints and a misspelt place-name.

These mistakes are just some of those found at a few spot checks. To discover them all would be a long job, for clearly there are very many. One cannot escape the conclusion that they rob the translation of much of its value. No doubt the careful checking and editing needed to make it really reliable would have been so costly that, had this been proposed, the complete translation would quite probably never have been published at all. And that, in spite of everything, would have been a pity. At least the glaciologist with no Russian can now get some impression of any section of Zubov's book of interest to him. But if he wishes to follow up a particular point, he would do well to have the original checked over again by a Russian speaker.

TERENCE ARMSTRONG

L. DUFOUR *and* R. DEFAY. *Thermodynamics of clouds. Translated by M. Smyth and A. Beer.* New York and London, Academic Press, 1963. xiii, 255 p. (International Geophysics Series, Vol. 6.) $10.

To those of us who take delight in a physical interpretation of the various forms of water manifest in Nature, the process of change of state is, perhaps, the most interesting. The initiation of one phase in another, for example cloud drops or snow crystals from the vapour, ice from the liquid, or Tyndall flowers from the solid occurs either at small centres formed by random molecular motion, or at small foreign particles which happen to be present. It is possible, in principle, to describe these events in thermodynamic terms providing we introduce the interfacial tension and surface area as functions of state. In the first six chapters of this book the authors discuss this thermodynamic formalism in some detail. This is followed by three chapters concerned with the conditions under which drops of water, aqueous solutions and ice crystals can be in equilibrium. The book concludes with a discussion of the theory of homogeneous nucleation of water drops and ice crystals, and its comparison with experiment.

In as far as the book is concerned with equilibrium conditions and homogeneous nucleation, it has a somewhat limited interest for those concerned with real clouds, which form under conditions which are often far from equilibrium, and where nucleation processes may be dominated by the presence of foreign particles of variable concentration. Sufficient effort has not been given to a critical appraisal either of the thermodynamic approach itself, or of the experimental evidence in the section on nucleation—which is a field notorious for spurious results. As a result this book will probably appeal only to a small number of specialists in the field.

J. HALLETT

H. WEXLER *and others, ed.* Antarctic research; the Matthew Fontaine Maury memorial symposium. . . . [Edited by] H. Wexler, M. J. Rubin and J. E. Caskey, Jr. *American Geophysical Union. Geophysical Monograph* No. 7, 1962, x, 228 p. $10.

ONE of the symposia held under the auspices of the tenth Pacific Science Congress (Hawaii, 21 August–6 September 1961) commemorated the instrumental part played by the American scientist, Matthew Fontaine Maury, in pioneering "co-operative international studies of the oceans, the atmosphere and polar regions". The intention of the symposium was to review all aspects of Antarctic research initiated during the International Geophysical Year, 1957–58, and to present the more outstanding results of work carried out in that period.