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Modern History of Temperature Measurement

Temperature Measurement at The National Physical Laboratory: Collected Papers 1934-1970

EDITED BY C. R. BARBER, H.M.S.O. London 450 pages £14.60

The accuracy and reliability of the millions of temperature measurements made every day throughout the manufacturing industries of the world depend essentially upon the acceptancy of a recognised practical scale of temperature and on the precise establishment of fixed points such as the freezing points of a number of pure metals. The existence of the International Practical Scale of Temperature, first agreed upon in 1927 and revised in 1948 and again in 1968, is nowadays so much taken for granted that its birth pangs and its evolution tend to be forgotten.

Prior to 1927 the only agreed basis was dependent upon mercury thermometers and the scale was limited to the range 0° to 100°C. For some years, beginning in 1911, lengthy discussions took place—interrupted of course by the First World War—between the N.P.L., the Bureau of Standards and the Physikalisch-Technische Reichsanstalt, resulting eventually in the first version of our present scale.

A great deal of the credit for the construction of the International Temperature Scale, and particularly for its subsequent revisions, must be given to the workers at the National Physical Laboratory although, of course, the other national standardising laboratories played their part. This collection of papers published by them over a period of thirty-six years gives a survey of their temperature

researches and, although in some respects the book is largely of historical interest, it does in fact make a more useful contribution, in that it brings together papers on particular subjects and also analyses the present state of knowledge in each section, giving a good measure of additional information that was not included in the original papers.

Two major fields of temperature measurement depend, of course, on the peculiar properties of high purity platinum, resistance thermometry and the use of high temperature thermocouples, and each of these techniques is the subject of several of the papers reprinted, many of them contributed by J. A. Hall and C. R. Barber. The earlier contributions of F. H. Schofield and A. Grace which laid the foundations of the now universally employed technique of liquid steel temperature measurement are also included.

Sadly, the editor of this collection of reprints, C. R. Barber, died suddenly in March 1971. He had become recognised as a leading international authority on all aspects of temperature measurement and its associated experimental techniques. His last contribution to this subject makes a most impressive record of the successful endeavours of the institution with which he was associated for the whole of his career.

L. B. H.