metals do not receive sufficient attention; only two papers have the word metal in their title, and only a few of the other papers are relevant to a study of metals. Another comment is that there is strong evidence in this book of the tendency among rheologists to adopt broader points of view instead of solving very specialized problems with special techniques. For this reason all rheologists will gain by a perusal of all sections of the volume.

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Vapor Pressure of Organic Compounds. T. Earl Jordan. Interscience, New York–London, 1954. ix + 266 pp. Plates. $14.50.

The chemical engineer will find this huge compilation of vapor pressure data useful since it is possible to read the vapor pressures of 1492 organic and organometallic compounds to about ±1 percent from 168 well printed charts that constitute the heart of the book. These charts are supported either by equations or by references to 1145 tables of vapor pressure-temperature points. Unfortunately the book will not be of much value to physical chemists or to engineers who desire to make their own evaluations. There is no indication whether the tables of values refer to calculated or observed values although most of them contain calculated or smoothed results; and since the author has relied on secondary references to a major extent, his book does not provide a guide to the original literature.

The one page of text and a short preface emphasize that fact that the book is a summary of data, in fact, largely a summary of summaries, but no criterions of judgment are mentioned except graphical examination.

Comparison with D. R. Stull's compilation [*Ind. Eng. Chem.* 39, 517 (1947), reprinted in alphabetical order in *Chemical Engineers' Handbook,* J. H. Perry, Ed. (McGraw-Hill, New York, 1950)] of the evaluated vapor pressure data on over 1200 organic compounds and about 300 inorganic compounds is inevitable because Stull's collection is easily available and Jordan has reproduced 908 of Stull's tables verbatim. This is unfortunate because these values contain noticeable errors just below the normal boiling point, owing to a flaw in Stull's original chart; it would have been better if the basic data had been reworked or at least checked before such an extensive reprinting.

It is impossible to make more than spot checks on the values themselves. However, for 1,2-dibromoethane between 0° and 50°C we have a choice of two equations and the chart, but no two of them agree or even cross. At 10°, one equation gives 4.7 mm, the other 5.9 mm, and the chart 6.6 mm. At 50°, the three values are 42.3, 43.4, and 46.0 mm, respectively. The chart for tetraethyl lead (pl. 3, not 2) is said to be based on the work of Buckler and Norrish (0.056 to 6.3 mm) and on Stull's calculated values based on the same experiments. However the chart line does not correspond to Buckler and Norrish's equation but has a much smaller slope, and their experimental points lie 12 to 25 percent below the chart line. The author also missed the four points at 10, 13, 19, and 290.5 mm by W. J. Jones *et al.* [*J. Chem. Soc.* (London, 1935), p. 39].

Several other examples of this essentially noncritical treatment were evident on close examination of the tables and charts. Since the ordinate scales of the charts are linear with the logarithm of pressure and the abscissa scales are linear with reciprocal absolute temperature, a gentle curavature is expected for the plots of all but very low boiling point compounds. Instead, there are one or more straight lines per compound, sometimes with a disconcerting change of slope (for example, benzene at 100 mm on pl. 7).

In conclusion. I feel that the book has little utility, for the physical chemist and chemical engineer are better served by existing compilations, and the organic chemist dealing with relatively unknown materials will profit by the use of Dreisbach's book [*P-V-T Relationships of Organic Compounds* (Handbook Publ., Sandusky, 1952)] of vapor pressure estimates rather than by attempts to interpolate estimates based on Jordan's charts.

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Tissue Culture as Applied. Especially within bacteriology and immunology. Ren Kimura. Munksgaard, Copenhagen, Denmark, 1953. 273 pp. Illus. Danish Kr. 14.

This review is designed to summarize some 260 papers published by Kimura and his associates from the Microbiological Institute of Kyoto University. The procedure is to cite first the pertinent literature available prior to World War II, and then the findings in Kimura's laboratory. The broad range of subjects includes: culture mediums and techniques; pure cultures of tissue cells, cultures from various organisms and from malignant tumors; morphology, metabolism, vital staining and phagocytosis; and bacteriological and immunological studies.

Two general areas (factors influencing growth and immunological studies) encompass the major work of this laboratory. The factors studied for their influence on growth were temperature, desiccation, osmotic pressure, ionic concentrations, chemotherapeutic compounds, antibiotics, radiation, homologous and heterologous blood plasma, organ extracts and hormones, and vitamins. Immunological observations include the effects on cells of bacterial toxins, venoms, viruses, Rickettsiae, and cytotoxins. Antibody production has also been studied. Kimura's encyclopedic assembly of observations serves to point out topics on which experiments have been conducted but does not attempt to evaluate the implications of the findings.

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