by the number of papers quoted in the bibliography of the book under review: approximately 10 000. In this new set of tables the authors have wisely divided the book in two major sections: A table of isotopes in the familiar style occupies the first 152 pages. It contains atomic number, mass number, abundance, half life, type of decay, major radiations and principal modes of production for about 1824 nuclei, both stable and radioactive.

The following 393 pages give level schemes and detailed information in graphical form for isobars of different mass numbers. The figures are supplemented by tables giving many details on radiation, angular correlations, conversion coefficients, spins, magnetic moments, etc., in a condensed but clear form. The bibliography, reaching to January 1966, follows, and the book closes with a useful collection of miscellaneous tables of numerical data continuously needed by investigators working on nuclear problems, such as energy conversion factors, conversion coefficients, standard energies of substance, x-ray levels, etc.

In a book such as this it is very important to condense the information in portable form and at the same time leave it intelligible. This result has been achieved, in my opinion, very successfully by using a judicious method of presentation combined with typographical ingenuity, appropriate paper, and a well studied format. It is surprising how portable can be a tome of 594 pages containing probably $10 billion worth of information.

I have no doubt that the book will be the standard reference for years to come, as were its predecessors, and I look forward now to the parallel evolution of the particle tables.

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Emilio G. Segrè, professor of physics at the University of California, Berkeley, shared the 1959 Nobel Prize for the discovery of the antiproton.

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You can neither win nor break even

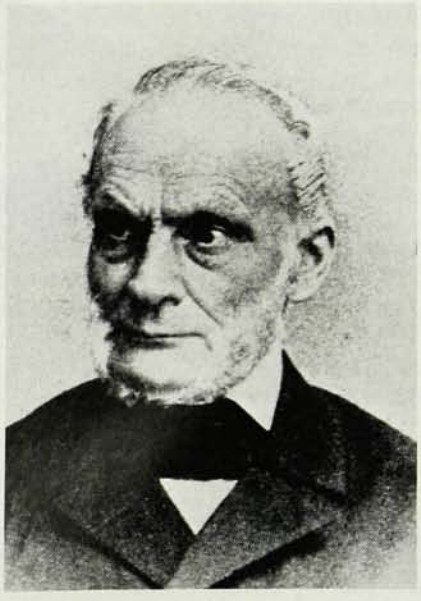
ENTROPY AND LOW TEMPERATURE PHYSICS. By J.S. Dugdale. 206 pp. Hutchinson, London, 1966. Paper 15 s

by R. Bruce Lindsay

Though thermodynamics is nowadays frequently dismissed by many physicists as the concern primarily of chemists and engineers, it remains one of the greatest theories ever invented, with important applications in every branch of science. It is agreeable to note another book on the subject written by a physicist. The author of the volume under review is professor of physics at the University of Leeds in England. He has chosen to develop his treatment of the subject from the standpoint of the concept of entropy, in which he says he became particularly interested while he was a student of the late Sir Francis Simon of the Clarendon Laboratory at the University of Oxford.

Although there is indeed a good deal about entropy in the book, examination discloses that it is in the main a condensed but clear, conventional treatment of thermodynamics from both the classical macroscopic and microscopic statistical points of view. The discussion of classical thermodynamics emphasizes to a certain extent the history of its development, but on the whole the analysis is straightforwardly didactic.

Quantum-statistical considerations are introduced in the middle of the book, and the essential formulas are reproduced. There is, however, practically nothing in the way of quantum-mechanical background. Thus the Pauli exclusion principle is mentioned only casually without detailed discussion. Most of the statistical applications are to gases though specific heats and magnetism of solids are briefly discussed.



RUDOLF CLAUSIUS (1822–88). His famous statements of the first and second laws of thermodynamics are:
1. Die Energie der Welt ist constant.
2. Die Entropie der Welt strebt einem Maximum zu.

One of the interesting features of the book is its emphasis on the third law of thermodynamics (Nernst heat theorem). The title is justified to the extent that about 40 pages are devoted to low-temperature physics, with a 20-page chapter describing experimental methods for obtaining and measuring low temperatures.

The author's style is clear and his analytical deductions are accurate. The book should appeal to advanced undergraduate and graduate students of physics with the usual mathematical equipment. The bibliography is unfortunately rather sketchy for the purposes of the serious student.

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