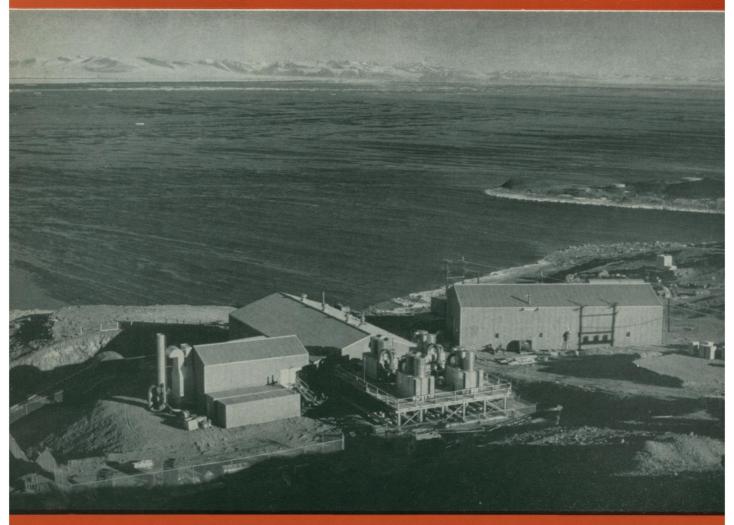
SCIENCE NEWS LETTER

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THE WEEKLY SUMMARY OF CURRENT SCIENCE



Atomic Antarctica
See Page 63

A SCIENCE SERVICE PUBLICATION

Now ready! One of the finest expositions of science that we have ever encountered— **HEAT AND ITS WORKINGS** by Morton Mott-Smith, Ph.D. \$1.00

Heat is one of the most all-pervasive factors in our life and our science. Practically every property of matter is albered by changes in temperature—density, hardness, pressure, strength, electrical conductivity, etc.—so that in everything that happens in our physical world we must reckon with the temperature or quantity of heat present. Heat is also man's most powerful and obedient servant. Without control of it, our civilization would soon fall.

This unusual book by Dr. Morton Mott-Smith is, to our knowledge, the only elementary to middle-level survey of this extremely important area in science. Presented in verbal terms it is a wide yet thorough explanation for the layman or beginning science of basic ideas, theories, and phenomena.

science of basic ideas, theories, and phenomena. Clearly explained for you are practically all the important concepts and theories associated with heat and its phenomena: the physiological sensation of heat and Weber's law; the measurement of heat and the evolution of the thermometer; the nature of heat; expansion of bodies; Boyle's law and Gay-Lussae's law and perfect gases; specific heat, BTU's, calories; latent heat; change of state, expansion and contraction, types of matter; exportation; pressure and heat; the triple point and Tamman's and Bridgman's studies; solutions; the work of Van't Hoff; the Arrhenius dissociation theory; Andrew's isothermals; the behavior of real gases and the liquifica-

tion of "permanent" gases; boiling and Van der Waals's equations; moisture and the nature of wetting; convection and conduction, temperature waves; radiation, the relations of light and heat.

radiation, the relations of light and heat. Since the topic of heat cannot be separated from other aspects of physics, you will also learn very easily and thoroughly a great deal about the properties of matter, the molecular theory of matter, the transmission of radiation, the theory of measurement, conservation of energy, the composition of the atmosphere, thermal means of measuring the age of the earth, side effects of contraction and expansion, elasticity, osmotic pressure, statistical mechanics, relation of color and heat, and many kindred topics.

topics.

Dr. Mott-Smith's explanation is non-mathematical, yet it conveys all the essential facts about heat in sufficient detail for you to finish this most interesting book with a thorough understanding of what is involved. Throughout the book Dr. Mott-Smith uses the experiences of daily life to illustrate his discussion, and he provides explanations for many of the curious effects of heat: how ice cream freezers work; why water can feel warm or cold; how water can be made to boil by pouring a cold liquid over its container; the phenomenon of hot ice, at 168° F.; when water contracts instead of expanding upon freezing; the reason why ice skates work; why metal-

lic substances, despite their high conductivity, are used as insulation against radiation; why cooking is difficult at high altitudes; how barometers and thermometers work; undercooling; why crystals sometimes do not form when a liquid goes beneath freezing point; how watchmakers allow for heat expansion within the works of a watch; why some vessels shatter on sudden temperature changes, while fused quartz does not; how osmotic pressure works, and scores of similar phenomena.

scores of similar phenomena.

We feel that this is one of the finest books-explaining-science that we have ever encountered, let alone reprinted. It is written with great grace and charm, is impecably accurate, and is packed full of information and insights. It fulfills the ideal requirements for a book of this sort: it imparts to you a first-rate background while you are enjoying yourself reading it. Not only is it excellent for an intelligent high school student or beginner in the physical sciences in college, it is fine as a verbal survey for a teacher (with scores of ideas and topics), and it will provide the layman with a basic knowledge that he can probably get nowhere else.

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