CORRIGENDUM

The Physical Basis of Life

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Monsieur Vernotte is a well-known writer on thermal subjects, and those familiar with his work are aware that he does not blindly follow convention without asking the reasons for it. In this book, which deals with the subject that is sometimes described as Heat Transfer, he opens his challenge to tradition by objecting to the traditional names, and selecting eventually that of thermokinetics, so that, between them, thermokinetics and thermodynamics cover the main part of the subject of Heat.

After this, and before we begin on the main subject, we find a stimulating discussion of the question whether the unit of heat is indeed a unit of energy, and whether, therefore, many of us are right in saying that the erg or joule is the proper unit for heat quantities; the author thinks it is not, though it may be used for convenience.

The main part of the book deals with conduction, convection and radiation. In dealing with the first of these, Vernotte sets up the differential equation in the usual way, with a perfectly correct warning that it is only strictly applicable if the thermal constants do not vary with temperature. He claims also that the passage from a difference between two first derivatives to a second derivative is not really valid, though he accepts it in practice. The reviewer confesses to an inability to understand the grounds on which the objection is based.

Having set up the equation, he solves a number of problems; these are well chosen for their illustrative value or for practical use, but they do not illustrate as many methods as might perhaps have been expected in a book of this size. There is no reference to the value of conjugate function methods in two-dimensional problems, nor of the Laplace transform.

Convection is interestingly treated, and the main laws of radiation are brought out.

Altogether, as mentioned earlier, the value of the book is as a stimulus to our own thinking, rather than as a compendium of methods or results, but for its actual purpose it is an extremely successful effort.

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Page 540, last clause of footnote *, viz.: "and secondly, they must originate and develop out of some pre-existing system, or, in plain English, they must work and they must have got there in the first place" should occur in the text immediately after the words "dynamic stability" (line 22).