

*Conductibilité Électrique des Métaux et Problèmes Connexes. Rapports et Discussions du Quatrième Conseil de Physique, Institut International de Physique Solway.* Paris, Gauthier-Villars, 1927. 368 pp.

This is the proceedings of the Fourth Solway Conference on conduction in metals held in Brussels in April 1924. It contains nine more or less comprehensive papers presented by leading physicists interested in that subject, and also the discussions by those attending the conference. The papers run in the following order: H. A. Lorentz, *On the application of electron theory to the properties of metals*; P. W. Bridgman, *On the phenomena of metallic conduction in general and some possible theoretical explanations*; O. W. Richardson, *On another proposed theory of metallic conduction*; W. Rosenhain, *On the structure of alloys*; W. Broniewski, *On electrical resistance and thermal expansion*; A. Joffé, *On the conductivity of crystals*; Kamerlingh Onnes, *On some recent researches on superconductivity*; E. H. Hall, *On metallic conduction and the transverse effects in a magnetic field*; A. Joffé and N. Dobronravoff, *On some experimental tests of the idea of light quanta.*

S. C. WANG

*Lehrbuch der Variationsrechnung.* By Adolph Kneser. Second edition. Braunschweig, F. Vieweg & Sohn, 1925. 397 pp.

In the second edition of his *Lehrbuch der Variationsrechnung* Kneser has followed, in general, the order of development of the first edition. There is, however, much difference in the two texts, and the second edition is certainly an improvement over the first.

Those familiar with the older edition will recall that while chapter headings were given there were no section headings. Consequently when one wished to know what notion was to be discussed in a given section he had either to read it through or else turn back to the table of contents. It is, therefore, gratifying to turn to the first page and find listed the topic discussed in the first section. It is much more gratifying to find that the method of presentation is improved. The reader need only study any chapter of the new edition and then work through the corresponding chapter of the first edition in order to be impressed by this change.

This fact so impressed itself upon the present reviewer that he decided to look up the comments of the reviewer of the first edition (this Bulletin, vol. 12, p. 172). It was found that while that reviewer classed the work as one of monumental importance, he also asserted that it was not lucid. Most of us who have had occasion to use the first edition agree with this comment. There is no doubt, however, that this criticism has been overcome to a very great extent in the new edition. Here the notation has been explained in greater detail, statements of needed existence theorems inserted at the proper places and the illustrative examples explained more fully. While some of the theoretical developments which have taken place since 1900 have been inserted the work has not been complicated.

This second edition will continue to be recognized as one of the most important texts on the calculus of variations.

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