With regard to this result, it should be noted that (p. 323) the formula is treated as equivalent to

$$2(\mu_\infty - 1)/3\rho = \text{constant},$$

so that the experiments do not decide between the simpler law due to Dr. Gladstone and that given by Lorenz.

In the second volume we have an important memoir, on the solution of the equations of motion of a homogeneous elastic solid, published in 1860 in *Crelle's Journal*, and some interesting speculations on the relation of thermal conductivity to electric conductivity in pure metals; but the papers which will attract most attention are two on the absolute resistance of mercury (*Pogg. Ann.* cxlix., and *Wied. Ann.* xxv.). The first of these gives the original account of the now well-known Lorenz method of measuring absolute resistance; while the second is a statement of the results of Prof. Lorenz's own experiments made at the request of the International Congress of Electricians in 1882.

The first paper is most interesting; the contrast between the original Lorenz apparatus, as figured on p. 88, and the instrument designed by Professors Viriamu Jones and Ayrton for the McGill University is most instructive. Lorenz, from the beginning, was alive to the merits of his method and to the difficulties of carrying it into practice; the first preliminary experiments, in which the diameters of the tubes of mercury, used as resistances to be measured, were 7 millimetres and 14 millimetres respectively, led to the result that the length of a column of mercury one square millimetre in cross-section, and having a resistance of one ohm, is 107 centimetres, a result surprisingly near the truth when all things are considered; while in his definitive paper the result arrived at is 105·9 centimetres; the value which has been universally agreed upon as representing the result of all the best experiments is, as is well known, 106·3 centimetres.

Space compels only the briefest mention of another interesting paper, "On the Propagation of Electricity" (*Wied. Ann.* tome vii.); but enough has been written to show the high value and real interest of these volumes. Students of physics owe a debt of gratitude to Dr. Valentiner for the care with which he has done his work as editor, and for the labour he has spent in explaining difficulties and in making Lorenz's meaning quite clear.

OUR BOOK SHELF.

Theory and Practice of Art Enamelling upon Metals. By Henry Cunynghame. Pp. xvi + 135. (Westminster: Archibald Constable and Co., 1899.)

THIS book treats of enamels and of their employment in artistic work from several points of view. The introductory chapter, which extends to 33 pages out of the 133 which the volume contains, is mainly historical and archæological. The eight plates which illustrate this section of the book are unsatisfactory, while the text is open to serious criticism. The author is mistaken when he describes the Alfred Jewel in the Ashmolean Museum at Oxford as a ring, and when he affirms that it contains a "Byzantine enamel in a Saxon setting." A strange passage, which is too funny to be missed, will be found on p. 7, where the mosque of Santa Sophia at Constantinople is stated to have suffered the destruction of many of its splendid enamels through the "fanaticism of the followers of Dost Mahommed." The practical and technological details of Chapters i. to iv., with the illustrations which explain the operations described in the text, or represent the tools and apparatus employed, constitute the valuable portion of this treatise. One can discern throughout these pages the skilful and intelligent worker who has fought his way to success. We cannot speak of the final chapter, "The Manufacture of Enamels," with equal confidence. It would be wiser to omit chemical formulæ altogether rather than to give $NaO2BO_3 + 10Aq.$ for borax, $HOBO_3$ for boric acid, Cu_2O for black oxide of copper, Cr_2O_2 for sesquioxide of chromium, and $KOCrO_3$ for bichromate of potash. And what is the meaning of this sentence (p. 124), "Manganese is called in German, brown-stone, and by the French, peridot, after a town near Limoges where it was found"?

The Witness of Creation: Nature Sketches from the Book of Job. By M. Cordelia Leigh. Pp. 167. (London: Jarrold and Sons, 1900.)

WE hope this book will be widely read by the Sunday-school teachers and leaders of Bible classes, for whom it is primarily intended; for they will derive from it many lessons which will create and foster a love of nature in the members of their classes. The chapters in the book originally appeared in *The Sunday at Home*, each chapter being based on a passage in the Book of Job or the eighth Psalm, in which some natural force or object is referred to, such as the sun, snow, rain, wind, ice, the lion, the wild ass, &c.

The poem of Job is full of references to nature, and Miss Leigh has interpreted these references in the light of modern science. For instance, the words "foundations of the earth" suggest remarks upon the earth's physical structure; "Hast thou entered into the springs of the sea? or hast thou walked in the recesses of the deep?" forms the text for a chapter on the sea; and "Canst thou send forth lightnings, that they may go, and say unto thee, Here we are?" heads a short chapter on electricity. This chapter, however, is a disappointing one, and a writer with a real knowledge of what has been accomplished in electrical science could have given a brilliant answer to the poet's inquiry. The texts dealing with physical science are, as a rule, not so well expounded as those referring to natural history objects. The idea of viewing the sublime poem of the Book of Job from the aspect of latter-day scientific knowledge is, however, an excellent one, and we trust the book will be read by priests as well as the laity; for the contents will be found a source of inspiration to all interpreters of Holy Scripture.

La Céramique Ancienne et Moderne. Par E. Guignet et E. Garnier. Pp. 311. (Paris: F. Alcan, 1899.)

THE author of the second section of this work, M. Garnier, is already well known as a writer on ceramic art. Filling the important post of Keeper of the Sèvres Museum, he enjoys ample opportunities of becoming familiar with the development of earthenwares and porcelains and the characteristics of the several kinds. But a couple of hundred pages illustrated by fifty poor process-blocks have not afforded M. Garnier the chance of treating his subject adequately. The essay by M. Guignet on materials and manufacture, though far too slight and unequal in treatment, is good so far as it goes. Unfortunately, he omits much that one expected to find in his pages, *e.g.* the process and rationale of salt-glazing, while he repeats (p. 86) the exploded theory that Josiah Spode, about the year 1800, first introduced bone-ash into the body of English porcelain. Several other Continental writers on ceramics, when they give any account of English porcelain and earthenware, do not