$$\psi_{si} = \frac{1}{h\pi}(\gamma_{si} - \gamma_{si}') + \int \Delta_{s\sigma} T_{\sigma i} d\sigma,$$

(3)

$$\psi_{se} = \frac{-1}{h\pi}(\gamma_{se} + \gamma_{se}') + \int \Delta_{s\sigma} T_{\sigma e} d\sigma,$$

where in both cases

$$\gamma_{sp} = \frac{\partial}{\partial n_s} T_{sp}, \quad \gamma'_{sp} = \frac{1}{h\pi} \int \gamma_{\sigma p} \frac{\partial}{\partial n_s} T_{s\sigma} d\sigma. \tag{4}$$

A similar investigation is carried through for the second boundary problem; here the result is somewhat simpler. The author now proceeds to investigate the relation between the fundamental distributions on a surface and its transform by reciprocal radii, and furthermore gives a detailed discussion of the special cases of the circle, sphere, and ellipse. Certain convergence investigations concerning the Neumann-Robin methods conclude the memoir.

T. H. GRONWALL.

Physical and chemical Constants and some mathematical Functions. By G. W. C. KAYE, the National Physical Laboratory, England, and T. H. LABY, professor of physics, Wellington, N. Z. London, Longmans, Green, and Co., 1911. 153 pp.

THE authors have written this book to supply the need for a set of up-to-date English physical and chemical tables of convenient size and moderate price. In comparison with larger works such as those of Landolt, Bornstein, and Meyerhoffer this little book contains more information than its relative size indicates. In fact for class use where one illustration of a given type is good as another this book is ample. For the investigator desiring information of a very particular nature it may not be sufficient.

In most cases a table is accompanied by a brief statement containing definitions and standard formulas. Many references are given both to standard works and to observers for particular measurements. Interpolations and extrapolations are indicated.

The book contains several hundred tables covering subjects in general physics, astronomy, heat, sound, light, electricity,

magnetism, radioactivity and gaseous ionization, and chemistry. At the end are tables of e^{-x}, four and five-place logarithms, reciprocals, squares, and natural trigonometric functions.

H. B. PHILLIPS.

NOTES.

THE annual list of American doctorates published in *Science* presents, for the academic year 1913–1914, 502 names, of which 241 are credited to the sciences. The following 27 successful candidates offered mathematics as major subject (the titles of the theses are appended): E. S. ALLEN, Harvard, "Su alcuni caraterri di una serie algebrica, e la formola di de Jonquières per serie qualsiasi;" R. D. BEETLE, Princeton, "Congruences associated with a one-parameter family of curves;" Miss S. R. BENEDICT, Michigan, "A comparative study of the early treatises introducing into Europe the Hindu art of reckoning;" B. A. BERNSTEIN, California, "A complete set of postulates for the logic of classes expressed in terms of the operation 'exception' and a proof of the independence of a set of postulates due to Del Ré;" J. A. BULLARD, Clark, "On the structure of finite continuous groups;" R. W. BURGESS, Cornell, "The uniform motion of a sphere through a viscous liquid;" Miss L. D. CUMMINGS, Bryn Mawr, "On a method of comparison for triple-systems;" J. W. GAIN, Johns Hopkins, "Linear combinants of ternary forms;" H. GALAJIKIAN, Princeton, "A type of non-linear integral equations;" H. C. GOSSARD, Johns Hopkins, "On a special elliptic ruled surface of the ninth order;" G. H. GRAVES, Columbia, "Complete linear systems of algebraic curves of least order of genera three and four;" L. M. KELLS, Columbia, "Complete characterization of dynamical trajectories in n-space;" E. A. T. KIRCHER, Illinois, "Group properties of the residue classes of certain Kronecker modular systems and some related generalizations in number theory;" W. C. KRATHWOHL, Chicago, "Modular invariants of two pairs of cogredient variables;" T. E. MASON, Indiana, "Character of the solutions of certain functional equations;" L. C. MATHEWSON, Illinois, "Theorems on the groups of isomorphisms of certain groups;"