announced in the lengthy title of his book. He is intimately acquainted with the recent work in breeding, and has, himself, made some valuable contributions to knowledge. As a student at the Royal Botanical Gardens in Peradeniya, Ceylon, and later in Cambridge he has worked with Indian corn and with peas.

The book begins with an introduction in which are briefly discussed: Linnæan species, Jordan's species, variation, mutation, discontinuity of species, the work of Mendel and evolution theories. Later chapters are largely given to a fuller discussion of the topics here introduced. The first half of the book is rather elementary, intended presumably for the general reader. Natural selection, evidences of evolution and 'biometry' are treated in detail. It must not be supposed that the treatment of these topics is purely perfunctory. Even in the driest parts of the work there are sharp and valuable criticisms of the theories of the day. The author pays his respects to the theories of 'protective resemblances,' 'mimicry' and 'inheritance of acquired characters.' He shows the inadequacy of natural selection for the origin of species and prepares the reader for the subject evidently most dear to his own heart—'Mendelism.'

In describing the operation of Mendel's Law our author is at his best. He makes clear some things not generally understood in regard to the position of the 'Mendelians.' Thus (p. 180) he says: "dominance is by no means an universal phenomenon. * * * In a considerable number of instances the heterozygote is found to exhibit an appearance which is more or less intermediate between the types of character shown by the parents."

On page 205 it is shown that new forms arising in the midst of an old-established species need not be 'swamped' by intercrossing. A chapter on 'Recent Cytology' is chiefly an elementary account of the cell, but some discussion is given of the probable relation between chromosomes and Mendelian characters. Weismann's views and those of the 'Mendelians' are contrasted (pp. 261–262). The discussion of the alternating generations of plants as the 'x-generation' and '$2x$-generation' (p. 270 et seq.) will interest some readers, while his remarks on the improvement of the breed in the human race will not be taken more seriously than intended by the author.

The book has few glaring faults. There is no bibliography. This is most unfortunate, since the work is so well calculated to introduce college students to the problems of heredity and evolution. Certainly a few of the more useful works might have been named. On page 92 Davenport's 'Statistical Methods' is referred to as 'Structural Methods.' Dr. MacDougal is called Macdougal (p. 139). Perhaps 'nitch' (p. 286) is not a misprint for 'niche' but an example of reformed spelling. A lack of subheadings makes the book less easily used for reference than it should be.

FRANCIS RAMALEY
UNIVERSITY OF COLORADO

SCIENTIFIC JOURNALS AND ARTICLES

The opening (January) number of volume 8 of the *Transactions of the American Mathematical Society* contains the following papers:

G. A. MILLER: 'Generalization of the groups of genus zero.'

F. MORLEY: 'On reflexive geometry.'

G. A. MILLER: 'The groups in which every subgroup is either abelian or hamiltonian.'

H. F. BLICHFELDT: 'On modular groups isomorphic with a given linear group.'

W. E. STORY: 'Denumerants of double differentiants.'

A. RANUM: 'The groups of classes of congruent matrices, with application to the group of isomorphisms of any abelian group.'

CLARA E. SMITH: 'A theorem of Abel and its application to the development of a function in terms of Bessel's functions.'

W. B. FITE: 'Irreducible linear homogeneous groups whose orders are powers of a prime.'

L. P. EISENHART: 'Applicable surfaces with asymptotic lines of one surface corresponding to a conjugate system of another.'

THE December number (volume 13, number 3) of the *Bulletin of the American Mathematical Society* contains: Report of the September Meeting of the San Francisco Section, by W. A. Manning; 'Projective Differential

Geometry,' by E. J. Wilczynski; 'On Loci the Coordinates of whose Points are Abelian Functions of Three Parameters,' by J. I. Hutchinson; 'Associated Configurations of the Cayley-Veronese Class,' by W. B. Carver; 'Von Helmholtz,' by E. B. Wilson; 'Pierpont's Theory of Functions' (Review of Pierpont's Theory of Functions of Real Variables, Volume I.), by G. A. Bliss; 'The Mathematical Tripos for 1906,' by Virgil Snyder; Shorter Notices: Simon's Ueber die Entwicklung der Elementar-Geometrie im XIX. Jahrhundert and Simon's Methodik der Elementaren Arithmetik in Verbindung mit Algebraischer Analysis, by D. E. Smith; Randall's Elements of Descriptive Geometry and Ferris's Elements of Descriptive Geometry, by L. I. Hewes; 'Notes'; 'New Publications.'

The January number contains: Report of the October Meeting of the American Mathematical Society, by F. N. Cole; Report of the Stuttgart Meeting of the Deutsche Mathematiker-Vereinigung, by A. B. Frizell; 'A New Approximate Construction for π,' by George Peirce; 'Note on Conjugate Potentials,' by O. D. Kellogg; 'Groups of Order p^m Containing Exactly $p+1$ Abelian Subgroups of Order p^{m-1},' by G. A. Miller; 'Note on Systems of In- and Circumscribed Polygons,' by Miss S. F. Richardson; 'Hermite's Works' (Review of Picard's Oeuvres de Charles Hermite, Volume I.) by James Pierpont; 'Projective Differential Geometry' (Review of Wilczynski's Projective Differential Geometry of Curves and Ruled Surfaces), by Virgil Snyder; Shorter Notices: Nielsen's Handbuch der Theorie der Cylinderfunktionen, by F. H. Safford; Mach's Space and Geometry in the Light of Physiological, Psychological and Physical Inquiry, by C. J. Keyser; 'Notes'; 'New Publications.'

The February number contains: Report of the Preliminary Meeting of the Southwestern Section, by A. S. Chessin; 'Selected Topics in the Theory of Boundary Value Problems of Differential Equations,' by Max Mason; 'Note on Fourier's Constants,' by E. H. Moore; 'On the Minimum Number of Operators Whose Orders Exceed Two in any Finite Group,' by G. A. Miller; 'Note on the Orientation of a Secant,' by L. D. Ames; 'On Euler's ϕ-Function,' by R. D. Carmichael; Shorter Notices: Muir's Theory of Determinants, Revised Edition, by G. A. Miller; Schmall's First Course in Analytical Geometry, by Miss E. B. Cowley; Hefter and Koehler's Lehrbuch der analytischen Geometrie, by Miss E. B. Cowley; Teixeira's Tratado de las Curvas Especiales Notables, by C. H. Sisam; The Scientific Papers of J. Willard Gibbs, by E. B. Wilson; Gerland's Leibnizens Nachgelassene Schriften physikalischen, mechanischen und technischen Inhalts, by Florian Cajori; 'Notes'; 'New Publications.'

SOCIETIES AND ACADEMIES

THE AMERICAN CHEMICAL SOCIETY. NEW YORK SECTION

THE fourth regular meeting of the session of 1906–7 was held at the Chemists' Club, 108 West 55th Street, on February 8.

The following papers were presented:

The Alkylation of 4-Quinazolones: M. T. BOGERT and H. A. SEIL.

The Synthesis of Naphthotetrazines from p. Diamino Terephthalic Compounds: J. M. NELSON and M. T. BOGERT.

Note on the Use of Ultra-violet Light in Concentrating Willemite: G. C. STONE.

Ultra-violet light is used during the concentration of Willemite to determine when the tailings are free from the ore, the degree of fluorescence giving a good indication of the amount of ore present in the sample under examination. This method of analysis was illustrated on the lecture table by subjecting samples of Willemite which had been more or less completely extracted to the action of light rich in ultra-violet rays. Of the several samples of tailings examined, some showed no signs of fluorescence, while others showed the presence of sufficient ore to make it worth while to rework them.

The Determination of Sulphurous Acid in Gelatin: A Manufacturer's Position with Regard to the Pure Food Act: JEROME ALEXANDER.