

ity; the various deviations from simple Mendelian proportions, hypostasis and latency, sterility and inbreeding. The author also treats of coupling and "repulsion" without being able to make use of the flood of light that Morgan and his pupils have thrown upon these ideas. Indeed, Johannsen at the time of writing the book was not inclined to ascribe to the chromosomes the importance in heredity that is commonly conceded to them in this country.

In his final chapter Johannsen considers certain relations of the results of heredity to man and to evolution. He thinks the fact that culture (euthenics) has no effect on the race makes it not less but the more significant; for the momentary position of the race is the summation of personal qualities. In a sense it is true that the worse the breeding the greater the need for cultivation if any sort of a crop is to be harvested. As for the bearing of the new facts of heredity on evolution Johannsen has little to say and he states that we miss today the genius of a Darwin to establish a theory of evolution in harmony with modern knowledge.

C. B. DAVENPORT

Einführung in die Tierpsychologie. Erster Band, Die Sinne der Wirbellosen. VON GUSTAV KAFKA. J. A. Barth, Leipzig. Pp. xii + 593. 8vo. 362 text illustrations.

Animal psychology, according to Kafka, takes its departure from the same body of facts that sensory physiology does, but differs from this subject in the problems it sets itself for solution. That most of these problems are still unsolved justified the author in his opinion that a good text-book on animal psychology should concern itself with the facts of animal reactions rather than with theoretic matter. The book holds consistently to this view. It contains, after a very brief introduction, an account of the rapidly accumulating material on the sense of touch, the static sense, the sense of hearing, the temperature sense, the chemical sense, the light sense, and the very questionable senses of space and of time, all in invertebrates. The volume is well illus-

trated and is concluded by a bibliography of over five hundred titles in a well-ordered arrangement. As an introduction to the newly discovered facts in animal reactions the volume is in every way serviceable, though from the rate at which the subject is growing the book is bound soon to fall behind the times. As a means of quickening in the student a sense of the general problems in this field of research, it is disappointing. This fault may be excused on the grounds that it is just this side of the subject that the author has intentionally avoided, but it is an open question whether this avoidance is really a virtue. While the volume from its clearness and directness of statement will be found of much use to the student of animal psychology and allied subjects, its failure to deal with the more obvious general problems of this field of science must be regarded as a real defect. Possibly this may be remedied in the companion volume on the vertebrate senses which is said to be in preparation by the same author.

G. H. PARKER

SPECIAL ARTICLES

HEREDITY AND INTERNAL SECRETION IN THE SPONTANEOUS DEVELOPMENT OF CANCER IN MICE

AFTER preliminary studies in 1901 and 1902, and subsequent observations in 1907 suggesting the significance of heredity in the spontaneous development of cancer in rats and mice, we undertook an analysis of the hereditary factors on a larger scale in 1910 in conjunction with Miss A. E. C. Lathrop in Granby, Mass.¹

¹ Loeb, L., *Medicine*, 1900, VI., 286; *Centralbl. f. Bakteriolog.*, I., Abt., Orig., 1904, XXXVII., 235; *Univ. Penn. Med. Bull.*, 1907-08, XX., 2; *Centralblatt. f. allg. Pathol.*, 1911, XXII., 993. Lathrop, A. E. C., and Loeb, L., *Proc. Soc. Exp. Biol. and Med.*, 1913, XI., 34. Loeb, L., *Lancet-Clinic*, 1913, CX., 664. Lathrop, A. E. C., and Loeb, L., *Journal Exp. Med.*, XXII., Nov., 1915, 646, and Dec., 1915, 713. The credit for the first investigations on a somewhat larger scale into the possible influence of heredity on the tumor incidence in mice belongs to E. E. Tyzzer (*Jour. Med. Research*, 1907-08, XVII., 155). The procedure