

tune with each other. Related research, however, is still required in studying annual cycles of humidity and in finding what departures of average piano tuning from standard are tolerable to listeners.

R.W.Y.

Influence of Humidity on the Tuning of a Piano. By Robert W. Young. *J. Acous. Soc. Am.* 21: 580, November, 1949.

Mathematical Biophysics

Beginning with the work of Mendel or, more accurately, with its rediscovery at the turn of the century, there has been a steady increase in the application of probability theory to genetics, carried out in recent years by Haldane, DeWinton, Sansone, Mather, Geiringer, and others. Hilda Geiringer, in an article appearing in the June issue of the *Bulletin of Mathematical Biophysics*, treats the linkage theory for the case of tetraploids (four analogous chromosomes) and establishes the corresponding genotype distribution for succeeding generations, assuming certain probability distributions for various genetic events, and an initial distribution of genotypes.

The *Bulletin's* other June features include a paper by John Z. Hearon on the kinetics of biological systems. It deals with equilibrium states within a cell which result from a system of consecutive chemical reactions where the products of one reaction are involved in the next. Cellular structure imposes geometric restrictions on the system, in which diffusion forces are operating. A previous paper considered a closed system in which no substance entered or left the cell; the present paper extends the results to open systems involving sources and sinks from and to the outside.

N. Rashevsky has contributed two articles, the first being a diffusion problem which treats quantitatively the phenomenon of the noncorroded area shown by two spheres in contact with each other while immersed in a corrosive solution. The second relates the mathematical theories of the central nervous system and of social behavior. A neural mechanism previously postulated by H. Landahl in the theory of learning is taken as the framework within which "choices" of actions are made.

Russell H. Kesselman's contribution deals with tissue growth and cancer incidence. Assuming certain relations between the birth and death rates of cells, the presence of growth-promoting factors, the availability of food in the surrounding medium, and the presence of the toxic products of metabolism, formulas are derived for the rates of growth and decay of a tissue.

The paper of Joseph G. Hoffman on the mitotic index is primarily a critique and generalization of the older view that the mitotic index is proportional to the duration of mitosis. A more general expression for the relation is derived for the case of exponential growth of the population which is shown to reduce to simple proportionality if the product of the growth constant and the duration of mitosis is small.

The Bulletin of Mathematical Biophysics. Vol. 11, No. 2, June, 1949, the University of Chicago Press. Taken from a review by A. Rapoport.

2 LEADING PHYSICS BOOKS

UNIVERSITY PHYSICS

by SEARS and ZEMANSKY

For the one-year introductory course **with calculus** gradually introduced.

COLLEGE PHYSICS

by SEARS and ZEMANSKY

For the one-year introductory course **without calculus**.



SEND FOR NEW CATALOG OF
ADDISON-WESLEY BOOKS

ADDISON-WESLEY PRESS INC.
CAMBRIDGE 42, MASS.

WANTED

Infrared spectroscopist, Ph.D., with general knowledge of theory of polyatomic spectra and ability to do experimental research; routine work not expected; publications encouraged. Salary open, but not serious issue for well qualified and recommended man. Write

Chairman, Physics Research

Armour Research Foundation of
Illinois Institute of Technology

35 West 33rd Street
Chicago 16, Illinois