

polypeptide chain; Duplications, deletions, unequal crossovers, chain elongations and other rearrangements; Gene mutations affecting rates of protein synthesis; Quantitative and qualitative variations of enzymes; The inborn errors of metabolism; The blood group substances; Enzyme and protein diversity in human populations; Gene mutations and inherited disease; Disorders due to specific enzyme deficiencies (inborn errors of metabolism); Enzyme and protein polymorphisms.

#### MOLECULAR POPULATION GENETICS AND EVOLUTION

By Masatoshi Nei (Houston, Texas). North-Holland Publishing Company, Amsterdam-Oxford 1975. Distributed in the USA and Canada by American Elsevier Publishing Company, Inc., New York. Volume 40 in the series, *Frontiers of Biology*, edited by A. Neuberger and E.L. Tatum. Hard cover with jacket, 16.5 × 24 cm, XIII + 288 pp, numerous tables and illustrations. Price: Dfl. 82.00 (US \$ 34.00).

The progress of molecular biology in the last few years influenced population genetics and evolutionary theories to such an extent that a new discipline has resulted, *molecular* population genetics and evolution. Whereas, until recently, only short-term changes in the genetic structure of populations could be taken into account and long-term evolution be simply the object of conjectures, the molecular approach, i.e., the direct study of the genetic material and/or of its immediate products, has brought about many more possibilities and new insights. The classic assumption of a relatively small number of allelic states per locus has come to be modified in favor of a much larger variability. The classic neo-Darwinian theory of evolution has also come to be modified in a number of aspects, and especially with respect to the role of mutation.

These and other fundamental subjects are dealt with by Dr. Nei, who is himself a leader in the development of the new formulations. The monograph devotes two chapters to the mathematical theory of population genetics: natural selection and its effects, and mutant genes in finite populations. Six more chapters discuss empirical data in a rather easy way, that does not necessarily require particular proficiency in

mathematics: evolutionary history of life, mutation, genetic variability in natural populations, differentiation of population and speciation, and long-term evolution.

#### PATH ANALYSIS: A PRIMER

By C.C. Li (Pittsburgh, Pennsylvania, USA). Boxwood Press, Pacific Grove, California, 1975. Hard cover, 14.5 × 22 cm, 346 pp., illustrated. Price: US \$ 10.00.

Although natural phenomena usually involve a large number of interconnected variables, physical scientists may usually control and isolate them, and thus apply experimentation on a few variables at a time. The same is true, though to a lesser extent, of biologists. Social scientists and economists also face phenomena where large numbers of variables may interact, but they may hardly control and isolate them, since they largely have to rely on observed events.

Now, a large number of standardized variables in a closed (and formally complete) system may be analyzed by a form of structured linear regression analysis known as the method of path coefficients. Though largely applied in genetics for now 40 years, having been formulated by Sewall Wright in the early twenties, the method is however poorly known in other fields.

The present book provides a comprehensive approach to the subject, in a plain and enjoyable style, without necessarily requiring a specific proficiency in population genetics nor even in statistics. Although especially directed to social scientists and economists, it will no doubt prove of interest to psychologists and of course to biologists and geneticists.

#### MEIOTIC CONFIGURATIONS

##### *A Source of Information for Estimating Genetic Parameters*

By J. Sybenga (Wageningen, The Netherlands). Springer-Verlag, Berlin-Heidelberg-New York 1975. Volume 1 in the series, *Monographs on Theoretical and Applied Genetics*, edited by R. Frankel, M. Grossmann, H.F. Linskens, D. de Zeeuw. Hard cover, 16.5 × 24.5 cm, X + 251 pp, 64 tables and 65 illustrations. Price: DM 68.00 (US \$ 27.90).