BOOK REVIEWS

Blood Data Collated

Atlas of Comparative Primate Hematology. By Hans-Jürg Huser. Pp. xi+405. (Academic: New York and London, September 1970.) 257*s*.

BASED on data collected during the 1960s at the Yerkes Regional Primate Research Center, Atlanta, and the Blood Research Laboratory and the Tufts University School of Medicine, Boston, this work also reviews other published data and the bibliography is extensive. It attempts to fill a gap in human knowledge and to provide a reference book for biologists and those who use primates as experimental subjects.

Data are subjected to statistical analysis by computer methods and sixty variables are considered. Some such as weight are continuous and some such as sex and medication are discrete. Indices for sixteen species are considered statistically and formulae are reached using those variables which are significant. These are given as practical approximations which will, in the light of further data and the knowledge of further variables, be replaced by better models.

Ives and Dack[1] showed that "alarm reactions" influenced peripheral blood counts, and here it is shown that many variables are involved. For example, newly captured animals often suffer from iron deficiency anaemia, either nutritional or caused by parasites. Evidence also suggests that they often suffer from folic acid deficiency and possibly from a deficiency of B_{12}.

Morphological studies of peripheral blood and bone-marrow are made by conventional staining, histochemistry and the electron microscope. Coloured and black-and-white photomicrographs and electron micrographs are of unusual quality and number and are well related to the text. Studies of the haemoglobulins, red cell enzymes, erythrokinetics and the metabolism of iron, folic acid and B_{12} are included and constitute excellent reviews of these fields. As shown, these mechanisms are not necessarily identical in all species and care is needed in the selection of experimental animals. A chapter on morbid haematology is short but both fascinating and informative.

A review of the evolutionary and molecular aspects of the work is a personal view but never dogmatic. It deals with morphology and the "perspective" provided by detailed histochemical studies, with the vexed question of abnormal lymphocytes and monocytes and with the genetical and evolutionary implications of the structure of haemoglobulins and of the red cell enzymes and B_{12} binders.

The appendices are invaluable and contain numerous statistical tables. Methods used for handling and feeding the animals and for histochemical staining, for the enzyme and erythrokinetics studies and for haemoglobulin analysis are fully described.

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[1] Ives, M., and Dack, G. M., *J. Lab. Clin. Med.*, **47**, 723 (1956).

Physics of Biopolymers

Biological Polyelectrolytes. Edited by Arthur Veis. (Biological Macromolecules: a Series of Monographs, Vol. 3.) Pp. viii+291. (Dekker: New York, October 1970.) $19.75; 188*s*.

THIS is a junior companion and in some ways a sequel to the preceding volume in this series—though more reduced in content than in cost. Arthur Veis dedicates the book to the reviewing of the basic biophysics of three classes of biopolymers—globular proteins, nucleic acids, and acidic polysaccharides—as the groundwork for a general approach to an understanding of tissue organization at the level of broad thermodynamic and electrostatic principles.

The very thoroughness of treatment already accorded to proteins in this series closely circumscribes Timasheff's opening chapter on the polyelectrolytic properties of globular proteins. He progresses with authority, however, and provides a plentiful supply of theory going from isoelectric and isoionic points to charge-dependent transport processes. He contains overlap to a minimum but not without sacrifice—it is unusual, for example, to read about electrostatic interactions between proteins without encountering haemoglobin.

A brief introduction to the structure of nucleic acids paves the way for Steiner and Miller to juxtapose the varieties of single, double and multiple stranded nucleic acid structures (while preserving a strange silence on their circular forms). Their approach is more descriptive than that adopted elsewhere in the book and unfortunately skirts the area of dynamic investigation of nucleic acid structures without reference to the work of Eigen's group. The treatment of ribonucleic acids is confined to single stranded structures, risks no more than a passing mention of the cloverleaf model for soluble (*sic*) RNA, and serves to show by omission how rapidly the area has developed in the past three years.

Acidic polysaccharides—that group of rather unfashionable polymers associated with cartilage, gums and slimes—are given a detailed physical examination by Bettelheim. His extensive documentation builds a useful compilation of their comparative physical and hydrodynamic parameters which almost revels in the variety of physical chemistry techniques applicable to these polymers. Notably, their behaviour in solid and gel states is given due emphasis. This ushers in the final contribution by Veis on phase equilibria. He briefly rounds off the volume with an orthodox treatment of complex coacervation and the thermodynamics of demixing processes.

This book has the appearance of having been a long time in production—unless the editor's emphasis on basic groundwork explains why less than 5 per cent of the references cited are post 1967. None the less, the book attempts to tackle that awkward problem of what to do with the electrolytic character of ionic polymers—a difficult task but one which will earn it a number of enthusiastic readers in addition to those for whom "Biological Macromolecules" has now become a standing order.

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Errata

IN the article "Ultraviolet Mutagenesis in Strains of *E. coli* deficient in DNA Polymerase" by Evelyn M. Witkin (*Nature New Biology*, **229**, 81; 1971) cells which contain or do not contain DNA Polymerase were referred to as *pol*A$^+$ and *pol*A$^-$, respectively. This was the result of an editorial error; only genotypes should have been italicized, and the Pol$^+$ and Pol$^-$ phenotypes (including the Pol$^+$ revertants) should be referred to as such.

IN the article "Host Cell Reactivation in Strains of *E. coli* lacking DNA Polymerase Activity *in vitro*" by A. Klein and U. Niebch (*Nature New Biology*, **229**, 82; 1971), the last paragraph on page 83 should read: "Figs. 3 and 4 demonstrate that polymerase deficiency does not influence the repair of UV-irradiated phage DNA in cells which cannot perform HCR. This finding suggests that DNA polymerase is involved in HCR. There does not seem to be a repair mechanism independent of HCR which would act on UV-irradiated phage DNA and depend on DNA polymerase."