

nearest living relative. Thus primates, and chimpanzees in particular, are the ideal subjects for experiments which may throw light on human biology but which are too dangerous to perform on human beings.

Chimpanzees are, however, in great danger of extinction, partly through the pressure of African civilization on their living space but very substantially also because of the capture of young animals, usually by slaughtering the mother, to supply the demands of exhibition and research. The only branch of research which is beyond any possibility of ethical criticism in this respect is that which depends on the study of animals in their own environment, and this will perhaps be the one which will in the long run make the greatest contribution to the understanding of human biology.

If, however, we admit, as we must, to any justification for the more direct use of chimpanzees in medical research, then we cannot but admire the frank introduction to this symposium volume, written by Kratochvil, and the very great efforts made to ensure, by multiple use, that the animals held by the 6571st Aeromedical Research Laboratory, with its unique facilities, make the greatest possible contribution to knowledge.

This symposium is one of a series on primates in medical research, and in this context the contribution of Alepa on chemical suppression of the immune response in mice, though good in itself, is out of place. Alepa has, however, also examined the Gm and Inv antigens of the immunoglobulins of primates as compared with those of man and of one another, while Poulik has carried the comparisons further by means of molecular structure studies.

Goodman has used the Ouchterlony test and immunoelectrophoresis to compare the plasma proteins of man and various primates. He has also made comparisons of the transferrin polymorphisms in apes and man. Hoffmann and Gottlieb have compared the haemoglobins of chimpanzees and gibbons with those of man at the level of the α and β chains, but without fingerprinting or amino-acid analysis.

The subject of the remaining three papers is blood groups, in the strict sense of erythrocyte agglutinogens. Masouredis and his colleagues examine quantitatively in primates an antigen related to the human Rh₀ or D. Moor-Jankowski and Wiener provide a valuable summary of all that is known of blood groups in non-human primates. In collaboration with Kratochvil the same authors discuss the chimpanzee CEF system and its relationship to the human Rh system. It is confusing that these letters have been chosen, but that the factors which they designate bear no systematic relationship to the similarly designated Rh factors in man.

Taken as a whole, this publication brings together a great wealth of information derived from blood studies and bearing on the phylogeny of the primates including man. Further symposia in the series are eagerly awaited.

A. E. MOURANT

WORKING WITH CHROMOSOMES

Primer of Chromosome Practice

Plant and Animal Chromosomes under the Microscope. By G. Haskell and A. B. Wills. Pp. xv + 180 + 38 plates. (Edinburgh and London: Oliver and Boyd, Ltd., 1968.) 45s. net.

THIS book sets out to give a basic training in practical cytology, but devotes one third of its content to elementary theory. In this section, as in all the book, there is much repetition, and the majority of this elementary theory is readily available in nearly all the books on genetics and cytology.

The section of the book devoted to techniques starts with an adequate list of necessary equipment, and a

simple description of the theory and use of the microscope is given.

We then come to the meat of the book, the recipes and techniques used to demonstrate all that has been described. Adequate recipes are given for prefixatives, fixatives and stains, but the actual techniques are described with such latitude of times of treatment and in such loose terms that the elementary student or his teacher, for whom this book is primarily intended, may well see nothing on his finished slide, and no help is given to enable him to find and correct his error. The range of time of hydrolysis for Feulgen staining is given as 10–30 min, with no indication as to whether to add hot or cold acid. One is told to use colchicine solution sparingly because of cost, and to make up a 0.5 per cent solution. Surely the authors do not intend the use of this strength as prefixative, when a solution one tenth as strong is adequate for most species? This chapter, on basic staining and squashing techniques, the first stage to be mastered by any cytologist, is poorly presented and inadequate, and there is some needless repetition of these basic techniques in the following chapters, which include pollen culture, salivary gland chromosome preparations, anther squashes, culturing human leucocytes, and cutting and staining serial sections.

The last part of the book deals with the presentation of data, and elementary statistics, with an appendix on sources of material, and a glossary.

The thirty-eight plates warrant special mention, for they range from adequate, such as that of human chromosomes; through poor, those of meiosis in *Vicia faba* showing very little of what occurs in prophase (including a photograph captioned "Leptotene" which claims to show lengths of pairing chromosomes and therefore would be in Zygotene anyway); to an example of how *not* to present data (unfortunately not quoted as such) showing sex chromatin in man, where the male and female nuclei differ so much in size and density of staining that no comparison is possible. In many cases the features to which the authors refer in the captions are not clearly illustrated.

This book does not contain the precise, unambiguous instructions which are needed by a beginner, and is very poor value for the price asked. I would not recommend it to the beginner, his teacher or even to the more advanced cytologist, for cheaper and far better books are readily available.

J. P. MOSS

PLASMA TURBULENCE

Electromagnetic Fluctuations in Plasma

By A. G. Sitenko. Translated by Morris D. Friedman. Pp. xii + 256. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1967.) 100s.

ELECTROMAGNETIC fluctuations play a central part in plasma kinetic theory, where the long range nature of the interaction makes the concept of particle collisions artificial and, if taken literally, nonsense. Such fluctuations are also important in the interaction of plasma with radiation in its role as a source, a scatterer and a transmitting medium; thus plasma fluctuations are essential to our understanding of plasmas both in the laboratory and in the cosmos.

Sitenko's book, the first devoted solely to the topic of fluctuations in the plasma, is an important contribution to the literature in the field. His approach to the problem is ingenious. While most treatments begin with a kinetic equation in some form, Sitenko begins with a generalized Nyquist noise theorem, relating the fluctuating fields and the fluctuating currents by a spatially and temporally non-local permittivity. The resistive part of the permittivity is related to the spontaneous current fluctuation in the absence of field fluctuations, the reactive part cal-