
This monograph represents the first attempt at a study of a complete population of patients with Turner’s Syndrome. Dr. Lindsten has provided us with a well written and very valuable compilation of clinical and cytogenetic data on such patients. It is perhaps unfortunate that the Scandinavian system requires separate publication of research data when these, as in this instance, represent a doctor’s thesis. These important findings would reach a much wider audience if they were published in a standard journal, and then, not as a supplement.

The only criticism worth mentioning relates to the problem of the selection of patients. Dr. Lindsten has recognized the limitation of using a predefined clinical syndrome as the selective factor. As he states on page 9, a population survey for individuals with specific chromosomal aberrations and a clinical examination of these individuals would give more information as to the question of cause and effect. However, this is currently not a very practical approach. Dr. Lindsten’s definition of Turner’s Syndrome can be argued with, in that he includes the presence of malformations while not restricting himself to primary amenorrhea. This definition does not detract from the value of the study, since the data are accurately defined by the description of the patient population.

Perhaps the most interesting finding is the high incidence of patients having an isochromosomal X of the 57 patients studied. XO and XO/XX sex chromosome constitutions were observed in 35 and 7 patients respectively, a ring chromosome of the X in 1, and a deletion of the short arm of the X in another. One patient had an XX constitution, and a chromatin positive individual showed only XO cells in the tissues cultured, but mosaicism was not completely ruled out. In other words, of patients with Dr. Lindsten’s criteria, 56 out of 57 showed chromosomal abnormalities, of which 18 or possibly 19 were mosaics. These mosaics include 9 of the isochromosome carriers and the patients with the other 2 structural aberrations. These data lead one to suspect that a large proportion of the abnormalities may have arisen after fertilization (that is, the XO/XX individuals).

As also mentioned in several other publications, structurally abnormal X chromosomes uniformly appear to complete their DNA replication late, as is found for one of the two normal X chromosomes in normal females. Linkage studies demonstrate that the single X chromosome in XO patients could be of either maternal or paternal origin, and that some of the isochromosomes could be of paternal origin. It is concluded that the gene for the Xg blood group is on the short arm of the X chromosome. The latter conclusions must await evidence of whether or not the genes studied on late replicating chromosomes are active. Genetic studies reveal an increase in twin births in the families of patients, and suggest a deficiency of females in the sibships of this group.

An exact study of the data presented by Dr. Lindsten is essential for all investigators in the fields of cytogenetics and gynecological endocrinology. The

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This is very long book if you have to read it all. There is a short introduction by Dr. B. Waksman and five chapters covering a wide area of immunology. Dr. H. Fudenberg gives a very neat account of the “Hereditary Human Gamma Globulin Groups”. In spite of the ramifications of the studies that have been made on these specificities since 1956, the subject has not expanded so much that it has become impossible to present important facts and personal speculations in a short space. It seems unnecessary for Dr. Fudenberg to have complicated the situation by introducing his own nomenclature which, although it may have its virtues, is not the one upon which an international group of workers managed to reach agreement. The chapter on “Gamma Globulin and Molecular Mechanisms in Hypersensitivity Reactions” by Dr. K. Ishizaka proved a difficult one for the reviewer. The concept here elaborated is that alterations in the y-globulin molecule, induced by its combination with antigen, may be the basis of allergic reactions. Organ specificity with special reference to the lens is dealt with most comprehensively by Dr. S. Halbert and Dr. W. Manski. A full account is given of the properties of lens antigens in different specics and it is pointed out that extension of these studies may lead to an understanding of evolutionary events at a molecular level; work on other proteins is surveyed and the relationship to phylogeny is discussed. Dr. R. Schayer, in his contribution “Induced Synthesis of Histamine, Microcirculatory Regulation and the Mechanism of
Action of the Adrenal Glucocorticoid Hormones”, presents the idea that an inducible form of histamine may be the intrinsic regulator of the microcirculation. Anybody who is interested in the pathogenic effects of fungi will find all the clinical and laboratory details clearly set out and an excellent bibliography in Dr. S. B. Salvin’s chapter on “Immunologic Aspects of the Mycoses”. I would recommend that immunologists might buy this book and lend it to their genetical friends.

Sylvia D. Lawler. London


This book is a transcript of a symposium held in Vienna, on the subject of lipoprotein lipase. This enzyme appears to be of importance in the etiology of certain cases of coronary atherosclerosis. Its control is in good part genetically determined, and this accounts for at least some of the high familial incidence of coronary disease. Several of the participants describe methods of assaying this enzyme in tissues. The application of these methods to cells cultured from affected individuals and normals may have great potential in elucidating some of the genetic mechanisms involved in coronary atherosclerosis.

K. Hirschborn, New York

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This second part of the “De Genetica Medica Opus” is dedicated, as shown by the sub-title, to the genetics of non-pathological human characters. The present volume is only concerned with some of the several topics which might have had a place in it. Those treated are listed here, with original titles and authors in brackets. 1. Human chromosomes (Hromosomologie, by M. Fraccaro); 2. Human growth (Elementi di genetica assoziologica umana normale, by G. De Toni; The genetics of normal human growth, by S. M. Garm); 3. The morphological traits of the face (Die Haut und Das Haar by J. Schulze; Haarfehler der Augenregion, Die Weich-teile der Augenregion and Augenfarbe und Irisstruktur, by U. Schaefer; Nasenmerk-male and Ohrmerkmale, by H. W. Jürgens; Die normalen Merkmale der Zähne, Kiefer und des Gesichtsschädels, by G. Korhaus); 4. Hereditary characteristics of the blood (Immunogenetics, by A. S. Wiener and I. B. Wexler; Les groupes san-guins séröuses, by J. De Grouchy); 5. Human races (Race crossing, by R. R. Gates); 6. Twins as a method of research in human genetics (Lo studio dei gemelli come metodo di ricerca in genetica umana, by L. Gedda and G. Branci).

All who are interested in human genetics will find here a vast amount of information about the inheritance of the above listed morphological and physiological characters of man. The reader will be able to form a clear estimate of the actual stage that our knowledge has reached on the one hand, scarcity of data, inconsistency of analysis, doubtful conclusions and new prospects with regard to metrical characters; on the other hand, plenty of observations, fully efficient analysis, well formulated hypotheses and sure conclusions concerning physiological characteristics of the blood, so that these properties — although the research in this field is continuously and rapidly expanding — provide a sound basis for fundamental applications in both anthropology and medicine. This book has unquestionable merits due to the authority and skill of the contributors, even though some blemishes here and there may be rather disconcerting. In the reviewer’s opinion one notable omission is the lack of a chapter dedicated to the theory of polygenic systems, to which there are frequent references in the book, and to the biometrical methods by which their effects should be analysed. One could have expected greater accuracy in avoiding misprints, especially in those cases in which the confident use of uncorrected formulae may lead to erroneous results. To give some examples only: repeatedly the symbol $L_{\mu}^X$ is used instead of $L_{\mu}^X$ (p. 314); instead of $R_2$ one finds $R_0$ (p. 30, p. 36) or $R_2$ (p. 326); where it is written (p. 316) $dH/dm = d_2/m$ it should be $dH/dm = d_2/m$ (p. 326); where it is written (p. 314) $dH/dm = d_2/m$ it should be $dH/dm = d_2/m$ (p. 326); where it is written (p. 314) $dH/dm = d_2/m$ it should be $dH/dm = d_2/m$; on page 447 it should be read $(X_{i} \times 2)_{m}^{j}K_{m}^{j}$ instead of $(X_{i} \times 2)_{m}^{j}K_{m}^{j}$; there again we find $d_2/m$ instead of $d_2/m$; in the foot-note on this same page there is $S_1 = S_2 \{X_1 \times X_2 \times X_3 \times X_4 \}$ whereas it should be $S_1 = S_2 \{X_1 \times X_2 \times X_3 \times X_4 \}$ according to the scheme of analysis proposed by the AA it should be simply $S_1 = S_2 \{X_1 \times X_2 \times X_3 \times X_4 \}$ instead of $S_1 = S_2 \{X_1 \times X_2 \times X_3 \times X_4 \}$; finally, the proximity of the contribution (more than 1% of the book) on “Race crossing”...

A. Serra. Milan

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which, although rich in interesting information and suggestions, has too many digressions and unnecessary repetitions of aspects already treated in other contributions. The editorial inconsistency in the bibliographies, and the incompleteness of some references could be a matter for slight modification and correction in a further edition of the “De Genetica Medica Opus” which we hope will greatly contribute to the understanding of this basic field of human biology.

A. Serra. Milan


This is the third volume of a series on methodology in Genetics based on a symposium sponsored by the University of Texas and the Genetics Study Section of the National Institutes of Health. The publication of the volume post-dates the symposium by two years. It is arranged in six...
sections on mutation and recombination in bacteriophage, bacteria, fungi, and Drosophila, gene-protein relationships and cytoplasmic inheritance. There is also an appendix on the construction of new chromosomal types, compound X-chromosomes and cytoplasmic inheritance in Drosophila. As in the previous volumes of this series, there is some duality in the treatment of methodology. It surely was not hoped that details of experimental procedures could be conveyed in such a general volume and those papers that attempt to do this fail in their purpose. What seems to be needed is a good description of the types of investigation that can be done. The articles by the late Francis Ryan on mutation and population genetics in bacteria and by Yanofsky on gene-protein relationships in bacteria and fungi are excellent examples satisfying this need.

Some of the articles on the more topical and rapidly advancing subjects of phage and bacterial genetics suffer somewhat from the delay in publication. In some cases the contrast between the elementary level of the articles themselves and the erudition of the ensuing discussions is quite striking. Microbial geneticists will do well to note the remarkable, complex and ingenious chromosomal engineering in Drosophila described by Muller and Oster and Novitski, Lindsley and Sandler. The valuable section on cytoplasmic inheritance underlines our basic ignorance of the mechanisms involved. There still seems to be remarkably little effort in this field at the molecular level. On the whole this volume achieves its purpose, perhaps even better than its predecessors.

H. F. Bodmer, Palo Alto


The field of birth defects is too vast to be adequately covered by a single person. This has both disadvantages and advantages. The main disadvantage is that no synoptic view can be presented which would apportion to each class and type of birth defect its proper and exact biological importance. The main advantage is that, as in the case of this volume, experts can be brought together, each proficient in a particular discipline, to write about the many different facets of the problem. Of the 30 chapters no less than 22 are general and treat aspects of the problem as a whole. A complete conspectus is provided ranging from history to studies of the adjustment of the handicapped child and his family to society. Relevant aspects of genetics are dealt with as well as problems of normal and abnormal structure and differentiation. Physiological and pathological features of pregnancy are described. Three chapters are devoted to the effects of viruses, radiation and chemical toxins, the main known exogenous groups of causes of birth defects. Problems of treatment and genetic counselling receive recognition. The remaining eight chapters refer to specific types of birth defects. The optimum human being has yet to be described and we do not have a definition of the degree of deviation from the optimum which represents a birth defect. The field is very wide and the depth of treatment of individual aberrations of necessity reflects the interests of the sample of authors selected. No major class of defect, however, remains totally unmentioned and in many fields the book serves as a guide to current thinking, though the meagre bibliographies restrict its usefulness in this respect. Although the chapters of this book vary greatly in their level of sophistication, it is unlikely that any worker in human biology will find that it contains no novel concepts or facts.

G. R. Prider, London


This is the report of a “Conference on biochemical and biophysical mechanisms in the production of radiation-induced chromosome aberrations”, which was sponsored by the National Academy of Sciences and the National Research Council and held in San Juan, Puerto Rico in November 1961.

The conference was divided into five sessions headed as follows: 1) General survey and interpretation of effects, 2) Biochemical nature of induced aberrations, 3) Biophysical studies of chromosomes aberrations, 4) Aberrations of human chromosomes and their medical implications, 5) Genetic consequences of aberration induction.

In the various sessions two or more speakers each introduced a specific topic and pursued it until interrupted by other participants. We understand from the preface that participants were actually urged to interrupt in order to obtain frank and detailed informal discussions. Judging from the volume, which is obviously printed from a realistic transcript, most of those present obliged. The result was an informative sequence of exchanges which makes good casual reading but a difficult, if not impossible, conventional review. Thus little is left to the reviewer but to state that the introductory contributions are all provided by obviously competent people. For sheer entertainment the reader can turn to, as one of the several examples, the debate on page 267 in which the interesting hypothesis is made that indiscriminate appropriation of funds to medical laboratories may be responsible for the indiscriminate use by human cytogeneticists of “classical” cytological trends.

M. Fraccaro, Pavia
In the first paper Wildy and Horne present a satisfactory overall picture of the structure of animal virus particles mostly based on work performed during recent years by the technique of negative staining. The advance of knowledge concerning the fine structure of virus particles which followed the introduction of this new technique has been considerable; however the possibility of using the structural features of virus particles as a criteria for a classification is still controversial.

Philipson attempts to organize the dispersed matter available on the early interaction of animal viruses and cells. Such an attempt is questionable especially with regard to the effects on scientists from other fields, to whom this book is presumably addressed. It is dangerous to frame a somewhat rigid structure on sparse and controversial experimental data.

Kilbourne has made a very efficient review on influenza virus genetics. The study of influenza virus genetics is still in its infancy; however Kilbourne’s contribution is a very important one in bringing to order the thoughts and facts on this matter.

Levine treats the effects of X-irradiation on the response of animal cells to viruses. It might have been more desirable to have discussed in greater detail the hypothesis, available on the data, that after irradiation of the host cell the yield of virus increases. The same criticism applies to the review by Kohn on the possible integration of viral nucleic acid into the genome of animal cells. Here the attempt to present some experimental data as indirect evidence of lysogeny in the system animal virus host cell is certainly misleading.

The final paper by Alice Moore consists of the kind of free advice on the best way of discovering human cancer viruses, that has become very fashionable these days. It is puzzling that after several years and dozens of papers and round table reports, not one of these free-lance consultants has actually got the trick.

G. di Majorca, Naples