are inherited; the antisera produced have, however, some heterospecificity. As specific sera become more generally available and more numerous there should be much clarification of present understanding of the nature and amount of antigenic variations and many of the interpretative problems familiar from red blood cell group serology will be resolved. At present the medical importance of these variations is not well understood and there are no indications as to how the polymorphisms are maintained.

A. C. STEVENSON

The Genetics of Gastro-intestinal Disorders. By R. B. McConnell. (Pp. viii + 282; 47 figures. 70s.) London: Oxford University Press. 1966.

This is the second of the Oxford monographs on medical genetics to appear, the first being the reprint of Garrod's *Inborn Errors of Metabolism*, with a supplement by Professor H. Harris. The series is planned to follow J. A. F. Roberts' *Introduction to Medical Genetics* and systematically cover the genetics of the various bodily systems. The main structure of the book is anatomical, starting with diseases of the mouth and ending with those of the colon; but there is also an introductory chapter on physiology, and final chapters on the liver, general disorders with gastro-intestinal presentation and gastro-intestinal haemorrhage. This anatomical and clinical approach works well and is familiar to the medical practitioner. It means passing from conditions where the genetics are complex, such as ulcerative colitis and Crohn's disease, to diseases which are simply inherited, such as multiple polyposis of the colon, and back again. This will be confusing to those who know little genetics, but should not trouble those who have read Dr. Roberts' introduction.

Dr. McConnell is to be commended for recording what is known of the genetics of many conditions, even where this knowledge is meagre. It is useful to the research worker to know where the gaps lie. He has dealt in great detail with the association of blood groups and disease, and lists for example the findings in 71 separate series of carcinoma of the stomach, and controls, from almost all over the world. In 55 of these there was a significant excess of group A among patients and in only 2 a considerable deficiency. It is interesting to see how often the author is led to suggest that the genetic predisposition to a particular disease is polygenic.

C. O. CARTER

Handbuch der Haut-und Geschlechtskrankheiten.

By J. Jadassohn. Supplementary volume: *Vererbung von Hautkrankheiten*. Edited by H. A. Gottron and U. W. Schnyder. (Pp. xx + 1211; 317 figures + tables. DM 448.) (Subscription price DM 358,40.) Berlin, Heidelberg, New York: Springer-Verlag. 1966.

After an excellent introduction to genetics by Professor G. G. Wendt there follow 13 chapters with all

inherited cutaneous and endocrinological diseases. For the sake of clarity and interest many other relevant diseases which are not known to be inherited are also discussed where appropriate. All the chapters are written by experts in the field and some of them constitute quite excellent monographs. It is difficult to single out any one of them for special praise. Chromosome abnormalities are fully and clearly dealt with by Dr. Hans Niermann. An excellent account of disorders of carbohydrate, fat, and protein metabolism is followed by a complete chapter on nails and hair. Professor Schnyder, one of the editors of this volume, has written articles on bullous disorders, on cutaneous vascular and lymphatic diseases (perhaps the best chapter in the book) and, with Dr. Klunker, on the dyskeratoses. The second of these chapters is supplemented by a lucid and complete description of angiokeratoma corporis diffusum by Dr. David Wise, which really completes the review of this subject. Dr. Helen Curth's article on inherited anomalies of pigmentation is clear and authoritative, as one would expect.

One of the most difficult problems that this book surmounts is caused by the multiplicity of titles, many of them eponymous, that one meets in many rare diseases. The very full index helps in this respect. Another problem in such a large book is to avoid duplication and contradiction but so far as one can see the editors of this volume, Professor H. A. Gottron and Professor U. W. Schnyder, have succeeded in welding these excellent monographs into a comprehensive whole so that they have produced the most complete volume of its kind in print. Quite apart from the excellence of its text and index, the abundant comprehensive references at the end of each chapter and referred to in the index would alone make this indispensable as a reference book to the serious student.

The publishers have done a great service in bringing out this volume.

O. L. S. SCOTT

Genetics of Interracial Crosses in Hawaii. By N. E. Morton, C. S. Chung and Ming-Pi Mi. (Monographs in Human Genetics, Vol. 3. Edited by L. Beckman and M. Hange.) (Pp. viii + 158; 5 figures + 42 tables. S Fr. 39.50.) Basel: S. Karger. 1967.

The authors have attempted to answer the following questions, using data gathered from Hawaii over the period 1958-66: (1) What are the genetic effects of outcrossing in man on the first generation hybrids? (2) Do human populations represent co-adapted genetic combinations that are disrupted after the first generation of outcrossing?

The principal variables studied are the frequencies of post-neonatal infant deaths, neonatal deaths, and stillbirths, together with other traits recorded on birth certificates, including sex, multiple births, weight, and congenital malformations. Ancillary investigations have provided information on adult weight and height.

Of all human populations, the one on Hawaii is one of the most suitable for the complex analysis involved in

answering the above questions, in so far as it can be regarded as consisting of 8 inbred populations and all possible F 1 crosses between these. The records available are extremely comprehensive and provide effective environmental control, thus compensating as far as possible for the lack of experimental randomization of error. Consequently, the population can be analysed as a dialled cross.

Great care has been taken in detailing the collection of the data and their reliability, and the general discussion pertinent to this results in an absorbing account of the history and sociological structure of Hawaii itself. The conclusions reached are: (1) First generation hybrids between races in man are intermediate in size, mortality, and morbidity between the parental groups. (2) At the present time, human populations do not represent co-adapted genetic combinations which are disrupted by outcrossing.

It is unfortunate, however, that the authors have not seen fit to describe in greater detail the statistical methods applied, and that many of the conclusions reached appear to be dominated by a personal controversy.

MICHAEL OAKES

Current Studies in Hemophilia. Proceedings of the 3rd Congress of the World Federation of Hemophilia. Paris, September 7-9, 1965. Edited by J. P. Soulier and F. Josso. (Pp. xiii + 226; 32 figures + 19 tables. S Fr. 42.) Basel, New York: S. Karger. 1966.

The first Session of the Congress was devoted to the detection of the heterozygous (female) carrier of the mutant X chromosome; 11 communications were received. Daughters of affected males are of necessity carriers, but daughters of carriers have an even chance of being carriers or normal. The papers presented dealt with attempts to identify the latter class of carrier by demonstrating a significant reduction of the blood-clotting factor deficient in affected males. Some participants believed that this could now be done. Communications in other Sessions included papers on the mutation rate and on genetic counselling.

G. I. C. INGRAM

Advances in Blood Grouping II. By Alexander S. Wiener and Maurice Shapiro. (Pp. xxiv + 454; illustrated. \$12.50.) New York and London: Grune and Stratton. 1965.

This volume is mainly a collection of reprints of papers by the senior author; 52 contributions are grouped into 10 sections, of which the more significant are those dealing with blood groups of non-human primates, medico-legal aspects of blood grouping, erythroblastosis foetalis, and blood groups and disease. There are also useful sections on studies of individual blood groups. One advantage of having these papers presented as a collection is that the volume carries a subject index.

ARNOLD SORSBY

Les Chromosomes Humains (caryotype normal et variations pathologiques). By R. Turpin and J. Lejeune. (Pp. vii + 535; figures + tables. 54 F.) Paris: Gauthier-Villars. 1965.

This book, by the pioneers of French human cytogenetics, describes human chromosome anomalies as causes of maldevelopment and disease. The first fifth of the text is devoted to a brief historical introduction (by Turpin), to the description of techniques, and to a discussion of the normal chromosome complement (by Lejeune). The rest of the book consists in the main of two blocks, the autosomal anomalies (chapters 4-8, by Lejeune) and the sex chromosome errors (chapters 9, 12, and 14, by Turpin). There are two further general chapters (13 and 15). The authors attribute to the introduction of hypotonic treatment of cells a major role, on the technical side, in the development of chromosome studies. Theoretical consideration concerning the origin of Down's syndrome, and the results of studies of anomalies of sex development led to early chromosome studies of these conditions and to the discoveries of their chromosomal origin. Chapters 2 and 3 on techniques and the normal complement outline procedures of microscopy and of chromosome identification and classification. The subsequent two chapters with trisomy 21, both primary and interchange, with various biological parameters of Down's syndrome, and with the other two autosomal trisomies, of numbers 13 and 18, each chromosome being defined as that which causes the characteristic disorder. There follows a chapter on the syndromes with excessive or deficient chromosome material, one on autosomal interchanges and one on chromosome changes in leukaemia and cancer. Numerical sex chromosome anomalies are considered next under the two clinical headings of ovarian and testicular dysgenesis. In the former group are included triplo-X females, as well as the various syndromes with ovarian dysgenesis (Turner's syndrome, etc.). In the latter is discussed the syndrome of Klinefelter, including the chromatin-negative variety, and other related disorders with numerical sex chromosome changes. Structural anomalies of the X and Y chromosomes, and their clinical correlates and true and pseudo-hermaphroditism, are discussed in two chapters. A short chapter (by Turpin) is devoted to monozygotic twins discordant for autosomal or sex chromosomal complements. The two final chapters consider the origin and general effects of the sex chromosome anomalies (Turpin) and the biochemical dysfunctions found in subjects with chromosome changes, particularly with trisomy 21. This chapter is by H. Jerome.

This book is clearly written, well produced, and the standard of the illustrations, mainly karyotypes, is very high. There are almost a hundred pages of references which cover the field fully to the end of 1963 and, of necessity, less completely for 1964. Since the book was completed, there have unavoidably been a few changes as new knowledge has accumulated, particularly on autoradiography, on chromosome changes in spontaneous abortion, and on sex chromosome anomalies, but these