In addition the following expressed regrets at being unable to attend the meeting but in most instances wished to be included in any future society developments:

Alan Berstein, Baltimore
Gurth Carpenter, Los Angeles
W. B. Castle, Boston
L. F. Craver, New York
Elmer DeGowin, Iowa
Louis K. Diamond, Boston
Clement Finch, Boston
Russell L. Haden, Cleveland
Hale Ham, Boston
J. M. Hill, Dallas
Raphael Isaacs, Chicago
O. P. Jones, Buffalo
R. R. Kracke, Birmingham
Philip Levine, Raritan, N. J.
Eugene Lozner, Boston
G. R. Minot, Boston
Fred Pohle, Madison
Paul Reznikoff, New York
N. Rosenthal, New York
S. O. Schwartz, Chicago
Tom Spies, Birmingham
Maurice Strauss, Boston
C. C. Sturgis, Ann Arbor
Laskey Taylor, Boston
C. J. Watson, Minneapolis
Bruce Wiseman, Columbus, Ohio
Ernest Witebsky, Buffalo

Because of the greatly increased interest in the blood groups and related matters, the addition to BLOOD of a new section dealing with problems in immunohematology and transfusions is contemplated; we would appreciate receiving the comments of interested readers regarding this proposed innovation.

BOOK REVIEW

Human Genetics. By REGINALD R. GATES. The Macmillan Company, New York. 2 vols. Pp. 1518, 1946. $15.00

This book in two volumes is a review and compilation of accumulated knowledge in the field of human genetics. As such it is valuable both for its presentation of known genetic traits and also as a convenient starting point for further research. The unusually extensive list of references and the detailed index make this book eminently usable. The material is presented from the broad view of the biologist and introduces corollary evidence from other fields. In general, attention has been focused on the transmission of markedly abnormal conditions. Gates points out that standard genetic symbols (chap. 1) and methods of presentation should more generally be adopted for human heredity studies.

Three chapters will be of special interest to hematologists. The chapter on "Hemophilia and Related Hereditary Conditions" necessitates a fundamental revision of current views, as it shows (1) that heterozygous females (not very infrequently) are partial bleeders; (2) that hemophilia, while generally sex-linked, is (like other abnormalities) dominant in occasional families and probably recessive in rare cases. Sex linkage should therefore not be regarded as an essential diagnostic feature of hemophilia, although this is its usual method of inheritance. Several other types of bleeders are now known, including a dominant sex-linked form in which females are severely affected, as well as dominant pedigrees of epistaxis (nosebleeds), telangiectasis, and capillary fragility.

A table is presented which classifies fifteen inherited hemorrhagic conditions. A discussion of these diseases follows, with citation of original papers.

The second chapter of special interest is entitled "Other Inherited Diseases and Abnormalities of the Blood System." With regard to elliptocytosis (ovalocytosis), it is pointed out that "elliptical red blood

cells in man may be regarded as a reversion or rather the persistence of an embryonic condition" due to a single gene. Sicklemia, stated as fundamentally an abnormality of erythropoiesis, is inherited as a Mendelian dominant. "Thalassemia" is reported as caused by a gene which is a "partial dominant, sublethal in the homozygous (major) condition." The following conditions and their heredity are also discussed in this chapter: acholuric jaundice, eosinophilia, Pelger's nuclear anomaly of the leukocytes; pernicious anemia, hypochromic anemia, methemoglobinemia, Felty's syndrome, high blood pressure, arteriosclerosis, hypotension, Hodgkin's disease, myelogenic osteopathy, varicose veins, thromboangiitis obliterans.

The third chapter of special interest deals with the blood groups and presents the inheritance of the ABO blood types as well as their possible origin and distribution. The inheritance of the secretor factor, the MN factor and Rh factors, is given in considerable detail.

Conclusions reached by workers in human genetics present puzzling differences when compared with experience in other animal material and plants. For example, in human genetics the former sharply drawn distinction between dominant and recessive is said to break down completely, and a sliding scale from strict dominance to recessive characters showing incomplete penetrance (many normal overlaps) occurs. Another odd feature is "anticipation"; this refers to the progressively earlier appearance of an inherited condition in successive generations. Also, numerous cases are known in human genetics in which the same abnormality of character is inherited in two or three different ways in different pedigrees, dominant, recessive, and recessive sex-linked being the usual types. The reviewer believes that increasing knowledge will obviate what seem to be conflicts between human and other animal genetics.

The dissatisfactions engendered by this book can be ascribed not so much to the presentation as to our present state of knowledge.

The field of human genetics is now in what might be called the encyclopedic state (a period concerned largely with the recognition and cataloguing of inherited characters). Progress now depends on the recognition of heritable characters which can be easily classified, are simply inherited, and are widely dispersed through the general population. A larger series of such genes such as ABO blood types and PTC tasters which could be used as markers for more of the 24 pairs of human chromosomes would give human genetics a tool it sadly lacks. The doctor who neglects heredity loses much material which would enable him to interpret his patient's disease in relation to the family history. Increasing knowledge of human heredity foreshadows the time when part of every research group and hospital staff will be specially trained in this field.