the emergence of 'forbidden clones' of immunocompetent cells which evade the normal control mechanisms and attack body components. The abnormal stem cells probably arise by a series of somatic mutations, and this therefore puts this important group of diseases fairly and squarely into the genetic camp. It is well established that auto-immune diseases such as SLE, Hashimoto's disease, and pernicious anaemia have a strong familial incidence, although the precise mode of inheritance is not clear. The genetic predisposition is well substantiated by the remarkable incidence of auto-immune disease in NZB mice. This strain has a 70% incidence of auto-immune haemolytic anaemic and if crossed with NZW mice, the F1 generation has a high incidence of immune-complex renal disease. There is, therefore, no doubt that the predisposition to auto-immune disease is inherited, but precisely what is inherited is unknown.

Genetics has the reputation among some practising clinicians of being unduly concerned with rare, esoteric and untreatable diseases, but if Burnet is right in suggesting that genetic factors including somatic mutation are integral to the development of auto-immune disease, then the relevance of genetics to the practising physician becomes much more important, because auto-immune diseases such as thyrotoxicosis, myxoedema, SLE, Addison's disease, and rheumatoid arthritis form a large part of routine clinical practice. There is no doubt that modern immunology has added a new dimension to the importance of medical genetics. The traffic has, however, not all been one way, as genetic studies have contributed much to modern immunological theory. A recent and striking example has been the study of the rare genetically determined immunological deficiency syndromes which has led to the delineation of the two major immune systems, namely the T cells responsible for cellular immunity and the B cells responsible for humoral immunity.

Burnet also emphasizes the importance of somatic mutation in other fields. It is suggested that repeated somatic mutations lead to cellular loss and inefficiency and that this may be an important part of the ageing process. Somatic mutation may lead to neoplasia and an important function of the T cell system is immunological surveillance aimed at detecting and destroying potentially dangerous mutants. The exceptionally high incidence of neoplasms in the genetically determined immunological deficiency syndromes provides strong evidence in favour of immunological surveillance as a protection against neoplasia.

My only criticism is emotional rather than intellectual. The acceptance of auto-immune disease as a consequence of somatic mutation holds out little hope of major therapeutic advances. Burnet has previously expressed the

opinion that molecular genetics is unlikely to lead to therapeutic advancement. Is modern immunogenetics leading in the same direction, and in Shakespearean terms, is it 'a tale told by an idiot . . . signifying nothing'? The way out could be that environmental triggers, potentially capable of control, may be partially important in causing somatic mutations.

Immunogenetics in the guise of the blood groups was a pacemaker in the development of human genetics. Burnet has clearly indicated that immunogenetics still has much to accomplish, and may well be the 'messenger' which will carry genetics further still into the heart of clinical medicine. This book is certainly stimulating and will surely add new fans to the Burnet Club.

RONALD FINN

The Hunting Peoples. By Carleton S. Coon. (Pp. xi + 413; figures. £3.95.) London: Jonathan Cape. 1972.

Carleton Coon is by reputation one of the most prolific of American anthropologists. His works have included monographs, speculations, controversies, and compilations. Now in retirement, he is continuing his writing habit of a lifetime, his most recent production being 'The Hunting Peoples'. It is in the style that he employs so well, an overview of diverse peoples having in common survival into the 19th century without agriculture and without domestic animals other than dogs. The material is organized by subjects, each being illustrated by reference to a number of peoples—fishing, travel and transport, government. The book is aimed at the general reader and is probably too elementary, too easy of generalization, to recommend it for use in any university course. For readers of this Journal, it is of peripheral interest in that it illustrates the small population size, different marriage systems, and the variety of conditions of life and hence the potential selective variables that may have influenced the gene pool of these groups; it does not however develop the biological implications of such factors.

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