localization of genes to G bands. In a summary of the molecular genetics of globin genes in the mouse, Leder *et al.* beautifully explain the methods of recombinant DNA technology and the impact of the split genes and intervening sequences in evolution. Green describes future work in which classical and molecular genetics will be brought to bear to decipher why genes are arranged the way they are on chromosomes. So, the 50th anniversary of the Jackson Laboratory presented 3 kilobase pairs of mouse sequence, leaving the remaining 2.299997×10^6 for the next 50 years.

In a section on differentiation and developmental genetics, Papaioannou's paper on chimeras and Illmensee's on manipulation of the mouse embryo describe mind-boggling experimental achievements and approaches for analyzing how genes control development. Stevens's continuing intriguing study of teratocarcinogenesis exemplifies his ingenuity in finding genes that determine the formation of teratocarcinomas. In 1967, he found that 1 percent of strain 129 males developed testicular teratocarcinomas. Only one teratoma was found in 11,000 F_1 hybrids of strain 129, although in several other strains the effects of multiple genes were indicated. Stevens began looking for these genes and in 1973 discovered the gene "*ter*," which increased the incidence of spontaneous teratomas to 30 percent.

A number of papers deal with medical genetics. McKusick outlines the staggering progress of the last 20 years in defining genetic defects in humans. Lux *et al.* describe the hemolytic anemias in mouse and human that result from abnormalities in spectrin. Scriver compares inborn errors of metabolism in the two species. Coleman details the fascinating experiments on the effects of genes that determine obesity and diabetes in the mouse.

Immunogenetics is covered in three papers. Bodmer discusses histocompatibility gene clusters from several species. In a paper on the future of immunogenetics Snell discusses the biological significance of MHC polymorphisms. Heston describes the development and utilization of inbred mice in cancer research.

The symposium concludes with two papers on retroviruses. Baltimore reviews the Abelson virus, a defective retrovirus that carries a host-gene element, which when transcribed in cells transforms them. Rowe *et al.* describe the finding of integrated retroviruses in the mouse genome. It is remarkable and curious that roughly 0.1 percent of the 2.3×10^6 kilobase pairs in the mouse are thought to be retroviral sequences. These genes are directly or indirectly responsible for the high incidence of mammary tumors and leukemias in some inbred strains of mice.

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Interferon Popularized

Interferons. A Primer. ROBERT M. FRIEDMAN. Academic Press, New York, 1981. xii, 152 pp., illus. $17.50.

Not so long ago interferon research was a highly specialized, somewhat esoteric branch of virology familiar to a small group of aficionados. Most physicians and biologists were likely to have encountered the term "interferon" somewhere in the professional literature but otherwise had little awareness of its significance. To the layperson the term was very likely meaningless. The fact that Friedman deemed it appropriate to write a primer about interferons (and even managed to find a reputable publisher ready to print it) indicates how profoundly the perception of this field has changed in the last couple of years.

Friedman set out to write a book "for the student, scientist, physician, or educated layperson who wishes to know something about interferons." The book is of a rare sort—not quite an authoritative monograph or scholarly review and not really a textbook. In a style reminiscent of articles published in *Scientific American* Friedman explains what interferons are and describes their varied biological functions, activities, and possible medical applications.

Friedman develops the subject in a systematic, logical sequence. He describes the discovery of interferons by Isaacs and Lindenmann some 25 years ago. For the reader with no previous exposure to experimental work with interferons, a short chapter describes assay methods most widely employed in laboratory research. Other chapters describe how interferons are produced and purified. More than half of the book is devoted to a thorough analysis of the various actions of interferons, an evaluation of the role of interferon as a factor in the natural defense against viruses, and a realistic assessment of the possible clinical uses of interferons in viral infections and cancer.

Despite its compactness, the book contains a fair amount of technical detail, much of it highlighted by useful illustrations and summarized in simple tables. The subtitle of the book may be somewhat misleading; this is not a primer suitable for the reader totally uninitiated in modern biology, biochemistry, and immunology. Written in a refreshingly clear style and with a useful glossary of technical terms appended, the book will be most appreciated by science-oriented college students and physicians wishing to learn about the many ramifications of interferon research in biology and medicine.

Those reaching for this small book will not be shortchanged. One of Friedman's accomplishments is that he avoids oversimplified generalizations and cheap promises of miraculous curative powers of interferons while conveying some of his own excitement with this field of research.

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Biological Gerontology

Aging. A Challenge to Science and Society. Vol. 1, Biology. Papers from a conference, Vichy, France. D. DANON, N. W. SHOCK, and M. MAROIS, Eds. Published on behalf of l'Institut de la Vie and the World Health Organization Regional Office for Europe by Oxford University Press, New York, 1981. xvi, 346 pp., illus. $59.50.

This is the first of three volumes on the scientific, medical, and social aspects of aging that l'Institut de la Vie and the World Health Organization plan to produce. The volume, which is based on the proceedings of a conference held in 1977, contains 30 papers on topics ranging from theoretical gerontology and cell biology to the physiological aspects of aging. Most papers are reviews based to a large extent on the authors' own work, and few, if any, contain data not available elsewhere. Despite the international intent and European location of the conference, 43 of the 53 listed contributors are from the United States. One wonders whether this reflects American dominance in biological gerontology or whether other factors are operating.

Several sections of the book are particularly worthwhile. A 60-page section on the central nervous system is excellent. It includes discussion of age-related differences in brain anatomy, blood flow, and neurotransmitter activity as well as