THE COAT COLORS OF MICE. A MODEL FOR MAMMALIAN GENE ACTION AND INTERACTION. By Willys K. Silvers. New York, Springer-Verlag, 1979. 379 pp. $29.80.

This detailed monograph on pigmentation in mice is of value in drawing together the data and conclusions of a large number of studies over a period of many years. Apart from their intrinsic beauty, the coat colors of mice have played an important role in the elucidation of many fundamental genetic and developmental problems. More recently they have been sought as analogs for a variety of human genetic defects. Silvers has performed an invaluable service in compiling and synthesizing a vast amount of material, including his own distinguished contributions to the subject, which will be very useful to researchers in the field and makes for good browsing among non-specialists.

From being valued only by mouse fanciers and breeders, coat color mutations came into prominence as genetic tools at the beginning of this century. Among the pioneers was J.B.S. Haldane who first demonstrated the existence of gene linkage in mammals by his studies of non-random segregation at the albino and pink-eye loci. Subsequently many other mutations have been studied, and, with the rise of biochemical genetics, efforts have been made to elucidate the fundamental biochemical basis for various coat colors. This book provides a balanced coverage of the classical descriptive studies and of the subsequent attempts at molecular understanding.

To a practising physician, taking color photographs of mice (of which there are many in the book) may seem a trivial pastime, but its very real connections with human health are becoming increasingly apparent. Silvers discusses at length the beige (bg) mutation in mice which has proved to be a valuable model for the Chediak-Higashi syndrome. In both there are the same abnormalities of pigmentation and lysosome function. Indeed, one of the fascinations of coat color genetics is that so many unexpected connections reveal themselves and suggest fresh avenues for research. Why, for example, do genetic defects in pigmentation so often also affect fertility and hematopoiesis? The author concentrates almost entirely on the problems of pigmentation but is at pains to point out the related effects of the mutations he is describing. On laying down the book one is left with the strong impression that far more is known about coat colors by way of description than by way of explanation, and that the study of pigmentation will be rewarding aesthetically, scientifically, and in the long run medically.

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BECOMING A PHYSICIAN: DEVELOPMENT OF VALUES AND ATTITUDES IN MEDICINE. Edited by E. Shapiro and L. Lowenstein. Cambridge, Massachusetts, Ballinger Publishing Company, 1979. 288 pp. $22.50.

The study of medical education in the United States has had an exciting and varied history since the emergence of the landmark Flexner Report in 1910. The federal government has long had an interest in the quality of medical education and approaches toward influencing the training of physicians to meet societal goals. Professional educators have used medical schools as experiments in new, more effective teaching strategies. Finally, sociologists have seen the medical school as a
model of the socialization process, in which students acquire the attitudes, skills, and knowledge of the profession which they are about to enter. This book reflects these different approaches to medical education, as it includes papers ranging from the effects of stress on physicians to an assessment of the government's influence on residents' career choices.

Until the 1970s, the focus of research had been on the medical school and its students. Increasing importance is now being placed upon the role of the residency program and experiences after the completion of training on the development of physicians' attitudes and career goals. Appropriately, this book is equally divided among undergraduate medical education, postgraduate study, and practicing physicians. There is also a section on public policy and medical education, and a fine introductory chapter summarizing research from 1910 to the present.

Of particular note is a paper by D.H. Funkenstein that provides sound evidence that "economic incentives and ideology are more compelling for most students" than the medical school and its faculty in determining career choices. However, J. Stelling and R. Bucher point out that subtle features of a residency program, such as a common "bullpen" office in the first year, may profoundly affect group cohesiveness and future career patterns.

Finally, many medical students and physicians may find a perverse satisfaction in seeing the brutality of medical training scientifically documented.

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The Genetic Mechanism and the Origin of Life. Edited by Lawrence S. Dillon. New York, Plenum Publishing Corp. 1978. 563 pp. $39.50.

This book considers evolution at a molecular level and attempts to trace the development of genetic mechanisms from times prior to the origin of the cell until modern times. Viruses are used as models for precellular stages, and, while this may be somewhat controversial at the present time, they probably represent the only tools we have for looking. The biochemistry of DNA is considered in three chapters which are then followed by a short discussion of the evolution of the genetic code. DNA and RNA viruses are considered, both double stranded and single stranded, as examples of the operation of the genetic mechanism. Although the eukaryotes are not considered, this book will be of interest to all those interested in the molecular mechanism of genetic action. It will be of most interest to those who work with viruses, will not serve as a general textbook for students, but might be useful as a reference because of Dr. Dillon's unique approach to the questions. The final 25 pages contains a discussion of Dr. Dillon's notions of molecular evolution, using viruses again as his tool. It is followed by over one hundred pages of references which are complete, to say the least, and form a rather large selection of the literature on viral genetics.

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