even science whose origins and motives are tainted by sociopolitical influences can be considered “good” or “normal.” (This premise is, of course, essential to accept before we are even confronted with the ethical dilemma of whether or not we should use the Nazis’ data today.) The problem arises, however, not so much in the theories that are produced by such science as in the application of those theories. The Nazis, for example, thought that alcoholism was a disease, and today we may have isolated a genetic defect which supports that thesis. They, however, as a result of this knowledge advocated sterilization and social isolation of alcoholics, whereas our society is hopeful that such information can be used to help diagnose, treat, or even cure the disease.

This concept leads to the second highly relevant question which confronts us in the book, i.e., that of the scientist’s responsibility for knowledge s/he uncovers. If society can take pure, truthful knowledge and pervert it for corrupt ends, is the scientist responsible for ensuring that this situation doesn’t occur or for withholding discoveries that may be abused? (Assuming, of course, the scientist is free from social corruption, a fact that we have seen is not always true.) Even assuming the objectivity of the scientist, this outcome is dependent on the sociopolitical situation at the time of the research. Surely we cannot hold Fermi, who discovered nuclear fission in 1934, responsible for the ethical dilemmas we face in the nuclear age. We may also assert that the American eugenicists Dugdale and Goddard (cf. p. 99) who did their research in the 1870s and 1910s, are less culpable for the abuse of their work than Fritz Lenz, who did his work in Germany in the ’30s and ’40s. Proctor touches on some of these issues, and alludes to some resolutions, but not in as satisfying or detailed a manner as we might hope.

Racial Hygiene is an extremely serious book which deals with a very difficult topic. Proctor’s work cannot but provoke thoughtful doctors and scientists to evaluate their roles and the power of their work in society. All who read it will learn to appreciate that even more than we are an important part of our societies, they are an important part of us.

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PICTORIAL HUMAN EMBRYOLOGY. By Stephen G. Gilbert. Seattle, WA, University of Washington Press, 1989. 172 pp. $20.00. Paperbound.

The study of embryology is the study of a dynamic process in which structures grow, differentiate, degenerate, and migrate. Consequently, most texts of embryology rely heavily on numerous small diagrams, which illustrate the progression of only the structure(s) being discussed. While this approach is certainly necessary for a thorough understanding of development, the student of embryology can easily lose sight of the forest when studying the trees. A book such as Pictorial Human Embryology is useful to help the student regain perspective on the process as a whole.

The opening section of the volume illustrates the first weeks of development. These diagrams are accompanied by a brief and concise text, which reviews the major developmental events from fertilization through implantation and the complex folding of the embryo in the fourth week. This early embryonic period is not the main focus of the book and, accordingly, the section is quite brief. The text here serves as an excellent...
review, but is insufficient as a primary source; it contains outstanding tables reviewing the origins of embryonic tissues and the fetal and adult fates of the various germ layers.

The next section consists of a series of 16 large drawings of the developing embryo. It traces the embryo pictorially from early implantation (eight days) through stage 19 of the Carnegie Staging System (48 days). The various structures on these excellent color illustrations are clearly labeled.

The book continues with a series of chapters, each devoted to the development of a specific system; each chapter is divided into two sections. The first section contains a succinct description of the development of the system, accompanied by small diagrams illustrating the development of specific organs or structures. Generally, the author presents a "before-after" pair of pictures for the major developmental events of specific organs. The second section consists of a series of large illustrations (with no accompanying text) showing the entire system or embryo at the major stages of the system's development.

All of the major systems, including skeletal and muscular, are discussed. Special sections cover the eye and ear. Circulation is one of the most detailed sections in the book; the discussion of the heart's development contains 44 illustrations of the developing heart at different stages, cut in a variety of planes of section; the pictures integrating the development of the heart and the arteries and illustrating the maturation of the arterial system are excellent. Many texts show diagrams of the developing arteries and veins; in this volume, the development is shown through illustrations that include other structures in the fetus, allowing the reader to appreciate how arteries and veins develop along with the organs they supply. There are also useful tables reviewing the adult fate of embryonic arteries and veins. In addition, the section on the development of nervous system structures is exceptionally thorough and contains illustrations which integrate nervous system development, especially cranial nerve development, with general development. The chapter on muscular development depicts the development of muscles along with their innervations.

In *Pictorial Human Embryology*, most of the illustrations are accompanied by small pictures of the embryo with the plane of section clearly indicated, which is especially helpful for orientation when one is looking at pictures of sections of the strangely folded early embryo. Accompanying most of the larger illustrations are actual-size drawings of the embryo, which include the surface anatomy not seen on the illustrated dissected embryo. These small touches are exceedingly helpful when studying the illustrations. Tables throughout the volume are excellent reviews of the derivations of adult structures and the fates of embryonic structures. For the comparative anatomist, there is a brief appendix contrasting a 28-day human embryo with a shark embryo, a chick embryo, and a frog embryo at equivalent stages of gestation. Another interesting feature of the book is the footnoting of the illustrations; for the interested reader, there are a total of 226 references, most of them to embryology and anatomy journals.

In his preface, the author states that the purpose of this book is to "... serve as an outline and reference which will supplement lectures and texts." When used as such, this volume can be invaluable. Embryology resembles a puzzle with many little pieces; this book will help the student to see how they interconnect into one cohesive picture.

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