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Medical genetics erupted in the late 1950s and early 1960s because the human chromosome number (and anomalies of that number) could be seen with better techniques introduced by Tjio and Levan in Sweden, by Lejeune and Turpin in France, and by Patricia Jacobs and others in the United Kingdom. The U.S. jumped on the bandwagon a year or two later with studies of other autosomal trisomies. Very rapidly came new staining technologies (quinacrine and Giemsa staining) and the most medical technique of all, prenatal diagnosis through cultured embryonic cells (amniocentesis) in the 1970s. Cytogenetics led the way, but parallel to it was the explosive growth for biochemistry applied to the working out of metabolic pathways and their applications to human genetic disorders. Harper shows this in superb detail and we are treated to both the physicians involved and their laboratories, learning how their careers had drifted into medical genetics. Reading this book is both a visual treat and a stimulating mental excursion across the world of academic medicine, a world not known to most geneticists working in laboratories with experimental plants and animals. The author includes photographs of virtually all the major contributors to human and medical genetics. He provides a global outlook so we are not limited to just American and United Kingdom contributions. We learn why some programs flourished in some countries and not others. We find pleasure in his footnotes, which are less a reference to cited works than anecdotal asides on the players in this unfolding story. Harper includes dozens of tables that give chronologies of each new topic or field that develops. He poses challenges in every chapter for future historians to pick up threads he has not explored, so vast is the amount of material that he has tried to cover. In his final chapters, Harper returns to the theme of the aims of medical genetics. Human genetics is not a problem because it has become a basic science, purged of eugenics and no longer focused on saving humanity from deterioration. Medicine, however, has always been a moral science. It treats, it makes diagnoses. Its practitioners have a range of moral responses on what to do in catastrophes as well as in individual cases. Medical schools vary in their moral outlooks, some because they are embedded with religion instead of eugenics and the state so that this alters how they see the use of their services. We run into this with the debates over elective abortion, the use of contraceptives, stem cell research, and the use of IVF embryos, as well as many new challenges that will emerge as the Human Genome Project fragments into utilizable pieces that can be used to diagnose and treat illnesses. Medicine is goal oriented—to diagnose and to treat—and this thrusts it into a moral world that Harper explores. He hopes we have learned from the past and will not allow the excesses of the past to return. He loves his field and knows how easy it can be seduced for the public good, which all too often becomes just another dung heap. Reading this volume is a good way to immunize future practitioners in medical genetics from falling into that mire.

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