Blood: An Epic Story of Medicine and Commerce (review)

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Douglas Starr. *Blood: An Epic Story of Medicine and Commerce*. New York: Knopf, 1998. xv + 441 pp. Ill. $U.S. 27.50; $Can. 38.50.

This history of the origin and development of blood transfusion begins with the dramatic confrontation in a French courtroom in 1992 between people dying of AIDS and high-ranking officials in the French national transfusion service, who knowingly permitted thousands of hemophiliacs to use blood-clotting factors infected with the HIV virus. In the past decade similar accusations have rocked the agencies responsible for the safety of the blood supply in the United States, Canada, Britain, and Japan. Science journalist Douglas Starr chronicles the international tragedy of HIV transmission from the world's blood supply and the economic factors that contributed to it by considering the history of blood and its movement between persons from antiquity to the 1990s. Ambitious in scope and vividly written, the book offers compelling reading.

For Starr, blood is a complex natural resource. Comparing the vital fluid to crude oil, he points outs that blood can be separated or fractionated into derivatives that greatly enhance its economic value. Like the petroleum industry, the blood business spans the globe. Although red blood cells, being a perishable and short-lived commodity, remain mostly within national borders where they are collected, other parts of the blood, especially plasma, are traded among international companies or agencies. This analogy has its limits. As the author observes, crude oil carries little cultural baggage; even more significant, it is not the medium for transmitting dangerous infections. It is more than AIDS that disquiets blood bankers: there is the possibility of as-yet-undiscovered emerging diseases, as well as the threat of such older killers as hepatitis C.

Blood is divided into three parts. In the first section ("Blood Magic"), spanning the seventeenth through the early twentieth centuries, Starr revisits milestones familiar to most students of medical history. These include the seventeenth-century efforts of French physician Jean Denis and English physician Richard Lower, who transfused human beings with blood from animals; the identification of the blood groups by Karl Landsteiner; and the American introduction of direct transfusion (the temporary surgical union of a donor vein with a vein in the recipient.) The second section ("Blood Wars") focuses on the transformation of blood from a scientific curiosity into a strategic material during the Second World War and the decades that followed. The final section ("Blood Money") examines the development of an international blood-products market and the effect of the AIDS epidemic on the industry.

Starr devotes considerable attention to two prime movers in blood developments in World War II and beyond: Harvard chemist Edwin Cohn, who oversaw the large-scale American blood-fractionation project, and physician Ryoichi Naito, a collaborator with Shiro Ishii in obscene germ-warfare experiments using Chinese prisoners during the Japanese occupation of Manchuria. Naito's exploits are fascinating and deeply troubling. After the war Naito, who escaped prosecution for his war crimes, parlayed his experience with freeze-drying technology for plasma preservation into a for-profit blood bank that eventually became the

Green Cross Corporation, a major processor of blood products worth more than $1.5 billion. In the 1980s, Green Cross executives permitted the distribution of blood products contaminated with the HIV virus. In 1996 Japanese authorities raided their corporate offices, jailing the company's distinguished hemophilia expert and several executives until criminal charges could be brought against them.

With a book so ambitious in scope, one is likely to question some of the choices made by the author. I would have expected, for example, more attention to be paid to both George Crile, who pioneered direct transfusions in the United States, and the British social scientist Richard Titmuss, whose book *The Gift Relationship: From Human Blood to Social Policy* (1970) was credited with transforming American blood policy in the 1970s. The work contains many minor errors and misattributions, some of which would have been caught by more careful editing. Blood banker Charles Drew, for example, is identified on page 96 as the first African-American to earn an M.D. at Columbia University; in the paragraph that follows, however, it is (correctly) noted that Drew received his medical training at McGill University and pursued postgraduate studies at Columbia.

Blood is an ambitious and provocative book. Expansive in its approach and engagingly written, it welds the old and the new into an enlightening, if at times unsettling, focus.

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