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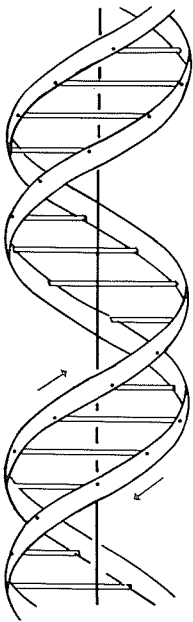
them continued their work on breeder reactors). After the war, President Charles De Gaulle formed France's Atomic Energy Commissariat (CEA)—enlisting both scientists and politicians—charged with developing nuclear fission for energy and weapons. Joliot was named its first high commissioner. A Communist and an outspoken foe of the development of French atomic weapons, he was dismissed in 1950. Soon the scientists were no longer in power. Yet “whether the scientists willed it or not,” Weart concludes, from the start the CEA had conducted research, including the development of breeder reactors, that “logically culminated in the production of enough plutonium for bombs.” In February 1960, the French exploded their first plutonium bomb above the Sahara desert.

**THE MEDUSA AND THE  
SNAIL: More Notes of a  
Biology Watcher**  
by Lewis Thomas  
Viking, 1979  
175 pp. \$8.95  
L of C 79-1199  
ISBN 0-670-46568-2

As in his previous collection of essays, *The Lives of a Cell* (which won a 1974 National Book Award), Lewis Thomas ruminates on a variety of topics ranging from disease to the essays of Montaigne, from zoos to warts. In “Medical Lessons from History,” he disputes the premise that modern medicine originated in the mid-1930s with the introduction of sulfonamides and penicillin. Its roots, he says, go back 100 years earlier, when nonsensical human experimentation (e.g., bleeding) was discredited by physicians who began to observe that some diseases were “self-limited [and] got better by themselves” and that doctors’ cures often did more harm than good. Thomas, president of Memorial Sloan-Kettering Cancer Center in New York City, argues that today’s *major* research efforts should be in the broad area of basic biological science, not in applied medicine, because doctors do not yet have the “high degree of certainty about the basic facts” that successful applied science requires. And he is critical of the contemporary American obsession with health: “Chewing gum is sold as a tooth cleanser. Vitamins have taken the place of prayer. . . . The new danger to our well-being . . . is in becoming a nation of healthy hypochondriacs, living gingerly, worrying

ourselves half to death." Yet, no matter what his subject, it is clear where Thomas places his faith—in science and in mankind (warts and all).

**THE EIGHTH DAY OF CREATION: Makers of the Revolution in Biology**  
by Horace Freeland Judson  
Simon & Schuster, 1979  
686 pp. \$15.95  
L of C 78-12139  
ISBN 0-671-22540-5



The year 1953 brought a new approach to biology that rivaled the transformation of physics after Max Planck introduced the quantum theory (1900) and Albert Einstein published his theory of relativity (1905). The revolution was set off by the discovery by James Watson and Francis Crick of the molecular structure of DNA (deoxyribonucleic acid), which determines individual hereditary characteristics. It has led to today's research into cell differentiation and "genetic engineering." In this richly detailed chronicle, Horace Freeland Judson, former *Time* science reporter in Europe, traces the DNA story from Johann Friedrich Miescher's discovery of nuclein (a complex of DNA and the protein normally associated with it in higher organisms) in 1869, through the Watson-Crick collaboration, to Crick's later work on the way that the "information" in the DNA molecule is translated into the making of proteins and Max Perutz's recent work on the structure of the protein hemoglobin. In the quest for DNA's secret, Watson, a young American, joined Crick in England—after being turned down for graduate study by Harvard and the California Institute of Technology. When they made their "find" in 1953, Crick was only 36, Watson 25. Along with Maurice Wilkins, who specialized in X-ray studies of DNA, they were awarded the Nobel Prize in 1962. The DNA discovery provided a coherent outline of life's processes in the simplest of single-cell creatures. Yet, Judson notes, the molecular biologists' early confidence that the outline could be stretched to include higher organisms was premature: the mysteries of cell multiplication and diversification have proved more difficult to solve than was anticipated.