disease or "merely" by psychological distress. The true test of a medical symptom may be the same as that for a literary classic—longevity. Symptoms of organic disease remain constant over generations, while those of psychosomatic diseases come and go like fads.

Shorter, a cultural historian at the University of Toronto, has researched a vast body of European and American sources to clarify this phenomenon. He shows doctors and patients engaged in a *pas de deux* in which physicians not only diagnose patients' symptoms but indirectly induce them. In the 19th century, for example, clinicians proposed the existence of an "irritable" nervous system, and, as this medical knowledge was disseminated, patients (usually "hysterical" women) began presenting themselves as paralyzed by irritated nerves. Shorter does not blame medicine entirely for creating the immobilized female patients of the 19th century. He turns to culture as well, specifically to the family, as another agent that helped a patient "select" his or her psychosomatic symptoms. Alice James and Elizabeth Barrett Browning may have been "paralyzed," Shorter suggests, not only because their doctors confirmed the symptom but also because their lives were constricted—in a sense, already paralyzed—within the Victorian family.

After the 19th-century model of an irritable nervous system was empirically disproved, Sigmund Freud and his followers proposed a new, psychological explanation to account for nonorganic paralysis. Certain cases of nonfunctioning limbs and shifting pains were shown by psychiatrists to be the corporeal expression of psychological repressions that could not be expressed directly. Psychiatry has succeeded in curing many such psychosomatic complaints, but, according to Shorter, contemporary patients manage to escape into new fashionable symptoms, notably chronic pain and chronic fatigue syndrome.

From Paralysis to Fatigue stands in the shadow of pathbreaking works like Michel Foucault's interpretation of the interplay between culture and the body, Philippe Ariès's discussion of the family in history, and feminist critiques of the relationship between gender and psychosomatic disorders—none of which, incidentally, Shorter bothers to acknowledge. A more serious flaw is Shorter's rather simplistic separation of mental and physical disorders, his strict demarcation between the purely organic and the purely psychosomatic. The old doctors may have been truer to life when they shook their heads perplexed, uncertain whether a patient's disorder was physical or mental or, somehow, a bit of both.

CARDINAL CHOICES: Presidential Science Advising from the Atomic Bomb to SDI. *By Gregg Herken. Oxford. 323 pp. $24.95*

C. P. Snow defined "cardinal choices" as those "choices that in the broadest sense determine whether we live or die." Snow was writing at the dawn of the atomic era, when mankind had just made the quantum leap into the ability to annihilate itself. To avoid doomsday, sensible people believed, science and government would have to learn new forms of cooperation.

Herken, chair of the space history department at the National Air and Space Museum, traces the beginning of this era to a letter Leo Szilard and Albert Einstein wrote President Franklin Roosevelt in 1939. The two scientists urged FDR to build the atomic bomb before any other country developed the technology. For the next two decades, however, there would be no direct channel of communication between the nation's scientific community and the White House. Only in 1957 did Dwight D. Eisenhower establish the President's Science Advisory Committee (PSAC). PSAC's influence waxed and waned, depending on the president, the scientists, and the issues. Finally, in 1972, with numerous scientists criticizing his conduct of the Vietnam War, Richard Nixon disbanded the PSAC—showing how much he valued his critics' views.

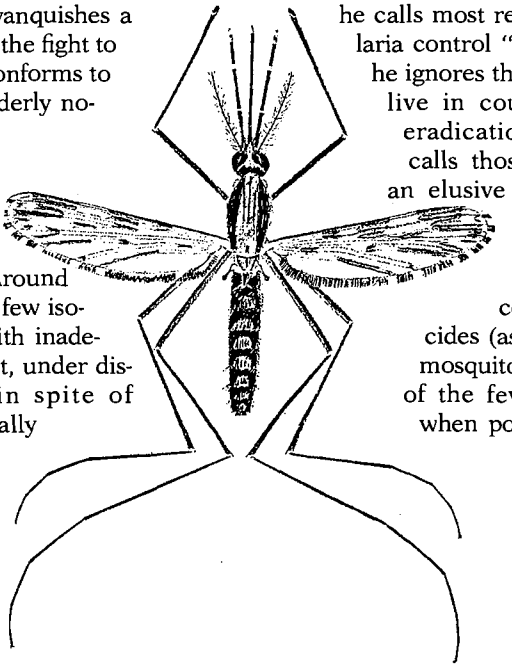
Herken suggests that "the question of 'Who advises?' is hardly less important than that of 'Who governs?'" In 1969, physicist Richard Garwin helped convince Nixon, an enthusiast of supersonic transport, that it was too costly and posed serious environmental risks. (Subsequently, the low demand for the Concorde and its hazardous effect on the ozone have justified Garwin's caution.) In 1983, by contrast, adviser George Keyworth failed to inform Ronald Reagan, who wanted to hear no objections, that the SDI (Strategic Defense Initiative or "Star

Wars") would be almost impossible to build and unlikely to accomplish its objectives.

Almost 50 years separate FDR's decision to develop the atomic bomb and Reagan's 1983 announcement to go ahead with the SDI. Yet during this half century, Herken notes, "presidential science advising seems only to have traveled full circle." Reagan acted on the advice of a handful of individuals, operating in secret, with little discussion or debate. Life-or-death decisionmaking by political leaders today resembles, in Herken's account, a dangerous modern machine run by an antiquated motor. Einstein put it better: After the atom bomb was dropped in 1945, he wrote, "Everything has changed, except our way of thinking."

THE MALARIA CAPERS: More Tales of Parasites and People, Research and Reality. *By Robert S. Desowitz. Norton. 288 pp. $21.95*

First comes the long struggle to identify the cause, then research to find a cure, and finally eradication: Such is the common idea of how medical science vanquishes a disease. But the history of the fight to conquer malaria hardly conforms to any such comfortable, orderly notion of scientific progress.



Two thousand years ago, the Chinese had a drug, Qinghaosu, that could treat malaria. Around the turn of this century, a few isolated doctors, working with inadequate scientific equipment, under dismal conditions, and in spite of colleagues' mockery, finally identified malaria as caused by a parasite borne by *Anopheles* mosquitoes. The result? Malaria today, with 100 to 200 million new cases and one to two million deaths annually, is a more serious killer than it was 30 years ago.

Thirty years ago, says Desowitz, a specialist in tropical diseases, malaria was on the verge of eradication. In 1964, Sri Lanka had only 150 new cases of malaria, a dramatic improvement over the three million cases recorded a few years before. Indian medical statistics contained a similar success story. Yet in both countries the number of cases has climbed back up into the millions again. What happened?

Quite simply, the governments in both countries ran out of funds to maintain the efficient DDT spraying campaigns that once proved so successful. Desowitz becomes a Jeremiah in his denunciation of "malaria politics": Corrupt bureaucrats in both First and Third World countries, intellectual scientists "more concerned with the exquisite intellectual changes of modish science than with seeking practical solutions," and a "drugs-for-profit pharmaceutical industry [that] gives low priority to the diseases of poor people" all come in for his excoriation.

Desowitz may have succeeded in making a dismal situation sound worse than it is. When he calls most recent funds spent on malaria control "money down the drain," he ignores that 1.5 billion people now live in countries with successful eradication programs. When he calls those scientists researching an elusive malaria vaccine misdirected, he forgets that when parasites and mosquitoes become resistant to insecticides (as one strain of *Anopheles* mosquitoes has), a vaccine is one of the few possibilities left. Yet when poor, malaria-ridden countries lack sustained funding for control, prevention, or cure, Desowitz's plea is timely: "The malarious are still with us and they still need help."