

patient for a limited period cost up to \$30,000. Still, given the doubts among scientists about interferon's effectiveness, the fact that even \$1 million was budgeted is proof of the drug's unprecedented allure among potential cancer therapies. Like penicillin, interferon is a natural substance, and thus was thought, until recently, to be quite devoid of the side-effects associated with most other anticancer drugs. And like the polio vaccine, interferon has an impeccable pedigree, in that it emerged from the mainstream of biomedical research. Perhaps the best way to put it is that interferon has charisma for scientists and laymen alike.

In addition to interferon's intrinsic attractiveness, there



WASHING A YOUNG RHINOCEROS

Inside its horse-high, bull-strong, hog-tight fence
It will stand beside you in a concrete garden,
Leaning your way
All thousand pounds of its half-grown body
To meet the water pouring out of your hose
The temperature of September.

And as slowly its patina (a gray compounded
Of peanut shells and marshmallows, straw and mud)
Begins to vanish
From the solid ribcage and the underbelly
Under your scrub-brush, you see, wrinkled and creased
As if in thought, its skin

From long underlip to fly-whisk gleam in the sun,
Erect ears turning backwards to learn how
You hum your pleasure,
And eyelashes above the jawbone hinges
Fluttering wetly as it waits transfixed
(The folds at the four leg-pits

Glistening pink now) for you never to finish
What feels more wonderful than opening
And closing its empty mouth
Around lettuce and grapes and fresh bouquets of carrots
And cabbage leaves, what feels as good to desire
As its fabulous horn.

—David Wagoner

were extra-scientific sources of pressure for more research on the drug. First, a number of influential laymen became actively interested in interferon, among them Mary Lasker, Laurance Rockefeller, and Congressman Claude Pepper. Then, too, the increasing costs of doing research and the government's decreasing financial support forced scientists to give priority to problems for which funds were more readily available. In the late 1970s, the large cancer budget, both federal and private, encouraged many scientists to choose cancer-related projects, including research on interferon. Still another incentive was the publicity given the diagnosis of osteogenic sarcoma and chondrosarcoma—a tumor of the cartilage—in Senator Edward Kennedy's son. This put interferon in the headlines, because osteogenic sarcoma was the kind of tumor on which Strander had experimented. The Kennedys offered interferon for the treatment of their son, declined, and the Senator was reported to say that he would not procure for his son a therapy denied other Americans. This comment focused attention on the major obstacle to clinical trials—the difficulty and cost of manufacturing the protein in large quantities.

One person determined to obtain enough interferon for his cancer patients, no matter what the difficulty and cost, was Dr. Jordan Gutterman, a young oncologist at the M.D. Anderson Hospital and Tumor Institute, in Houston. Introduced to interferon at Krim's conference, in 1975, Gutterman has advocated its clinical study ever since. He realized that something dramatic would have to be done to obtain sufficient funds for the purchase of interferon. Although some interferon—produced in Cantell's laboratory in Helsinki—had been purchased with NCI's \$1 million, this supply was already being spread too thin among several research centers. In a recent interview, Gutterman recalled, "There weren't any solid data to justify what was required—a large capital investment. Now, how do you get someone, the government, to put 5 or 10 million dollars into interferon clinical research if no data exists? We were in a Catch-22 situation. How do you get out of it? You get out of it, I guess, the way we did. Mary Lasker said, 'We've got to do something; I'm tired of waiting.'" Without much further delay, the Lasker Foundation provided financial support for the purchase of additional interferon for Gutterman's clinical program. One factor in Lasker's decision to provide the funds is said to be the illness of a close friend who suffered from breast cancer and was not doing well on chemotherapy. Lasker began to realize the limitations of conventional tumor therapy, and was eager to support a new approach to cancer treatment.

In 1976, about the time Mary Lasker was losing patience with the cancer establishment, Rauscher resigned as director of the NCI and became the senior vice president for research at the American Cancer Society's national headquarters, in New York City. Under Rauscher's aegis, the ACS became a major supporter of the experimental use of interferon in cancer.