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# TIME

THE WEEKLY NEWSMAGAZINE



Artzybasheff

CANCER-FIGHTER CORNELIUS P. RHOADS

Some gangsters are vulnerable.

# MEDICINE

## Frontal Attack

(See Cover)

Even as hospitals go, Manhattan's famed Memorial Hospital is not a light-hearted place. Its corridors never echo with the happy sounds of a maternity ward. No one is there because of minor ailments or for a good rest. Most of the patients know that their chances of recovery, though somewhat better every year, are poor indeed. Visitors passing through the lobby often look stunned by grief. Memorial is a tragic place because its patients are victims of cancer.

Room 102L, a short walk down an immaculate corridor, is one of the most

mined campaign against a disease which causes one out of every seven deaths in the U.S. Dr. Rhoads also heads the Sloan-Kettering Institute for Cancer Research, whose 14 stories rise beside the hospital. In this tower of hope, the world's most ambitious cancer research laboratory, highly specialized scientists and technicians experiment endlessly in the war against cancer; from it have come strange new treatments that have, so far, kept many leukemic children alive.

"We can help only 25%," says Dr. Rhoads, "and they have remissions only. Their disease will recur and recur, perhaps in more violent form. Some people ask, 'Why keep them alive, if they must die

individualistic, get together. Driven by wartime urgency, the scientists abandoned their jealousies and rivalries, submerged their temperaments and attacked each problem cooperatively from every possible angle. High-pressure wartime science achieved in a few years what would have taken decades of sauntering peacetime effort. Why not, thought Rhoads, use the wartime method on cancer?

What Dr. Rhoads thinks he is apt to say—loudly, clearly and often to a great many people. His persuasive tongue, a rare gift among scientists, had some effect. In 1945 Alfred P. Sloan Jr., chairman of the board of General Motors, gave \$4,000,000 to set up the Sloan-Kettering Institute, with Rhoads at its head. Other sources of funds promised lavish support. The impressive building was finished 18 months ago, and Rhoads began assembling a staff. "All I can do," he says, "is pick good men, give them opportunities and help them keep pointed at the target."

Among cancer men, who carry on their research work individually and in teams across the country, brisk Dr. Rhoads is not universally popular. A few worry because they think his position gives him too much power over cancer research. Rhoads himself knows that he runs the risk of being called highhanded and arbitrary, the head of a vast research organization that stamps out individualities. But he hopes that Memorial Hospital, with its pathetic patients, will supply some of the qualities of a wartime emergency.

"Some authorities," says Rhoads, "think that we cannot solve the cancer problem until we have made a great, basic, unexpected discovery, perhaps in some apparently unrelated field. I disagree. I think we know enough to go ahead now and make a frontal attack with all our forces. Anyway, that's what we are doing. We'll follow every promising lead, and we know a lot of them. If the ivory tower men solve the problem ahead of us, we won't feel we've wasted our time."

**Gangster Cells.** The "cancer problem," as pathologists call it, is one of the strangest and subtlest that medicine has faced. Cancer is not an outside enemy that can be fought in the open like a foreign invader. It is civil war among the body's own cells, and it runs through all of nature like a red fiber of ruin spun into the thread of life. All vertebrates, including frogs and fish, get cancer. In all probability, the experts say, invertebrates and plants have cancer too.

As a normal thing, the several hundred trillion cells in a human body cooperate loyally, subordinating themselves to the body's higher life. Their functioning and their usually slow rate of multiplication are controlled, most scientists believe, by the chemical hormones which are poured into the blood by a set of regulating glands.

Sometimes, for reasons which medicine does not yet understand, a cell turns out to be different from normal cells. Most such "mutations," less competent than the normal cells, die and are absorbed by the body. But occasionally a variant cell appears that is disastrously competent.



Werner Wolff—Black Star

MEMORIAL HOSPITAL (LEFT) & SLOAN-KETTERING INSTITUTE  
*The civil war is not two-sided.*

cheerful-seeming places in the hospital. Divided by stiff brown curtains into examination booths, it rings on Friday mornings with the voices of children. A little boy with a Tommy gun shoots sparks at a white-coated doctor, and a plump little girl cradles her doll. In a corner, a nurse in a starched white uniform peers through a microscope and makes a click-click sound with a small, sharp-voiced machine. She is counting in some child's blood the deadly white cells of leukemia: cancer of the blood. All the children in 102L of a Friday morning have leukemia, for which no cure is known. All of them, as medicine's knowledge stands at present, will die of the disease.

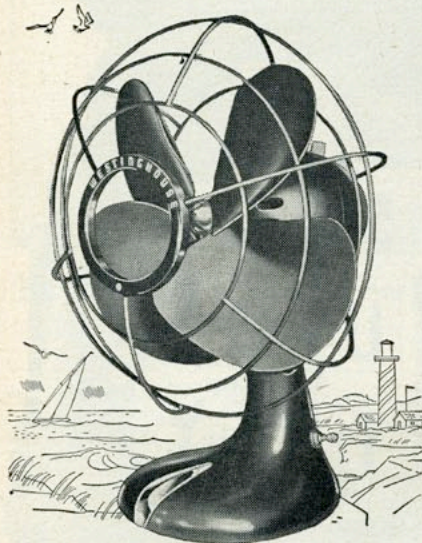
**Tower of Hope.** Last week, as he does every week, a man with short-cropped, iron-grey hair, blue eyes and an easy smile stopped in at Room 102L. Dr. Cornelius Packard Rhoads, director of Memorial, the world's biggest cancer hospital, is an outstanding symbol of medicine's deter-

mined campaign against a disease which causes one out of every seven deaths in the U.S. Dr. Rhoads also heads the Sloan-Kettering Institute for Cancer Research, whose 14 stories rise beside the hospital. In this tower of hope, the world's most ambitious cancer research laboratory, highly specialized scientists and technicians experiment endlessly in the war against cancer; from it have come strange new treatments that have, so far, kept many leukemic children alive.

**The Wartime Method.** Dr. Rhoads's jobs as head of Memorial and of Sloan-Kettering allow him little time for his favorite recreation—sailing. Like most men named Rhoads, he is called "Dusty" by his friends. Born in Springfield, Mass. 51 years ago, he graduated from Harvard Medical School in 1924. He has long been a successful medical scientist, and today he could be mistaken for the go-getting president of a big university.

In World War II, Dr. Rhoads was chief of the Medical Division of the Army's Chemical Warfare Service. The gas program turned out to be "preventive" only; the enemy did not use gas. But the experience made a lasting impression on him. He came away from war work with enormous respect for what can be accomplished when scientists, who are notoriously in-

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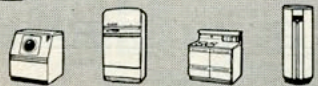
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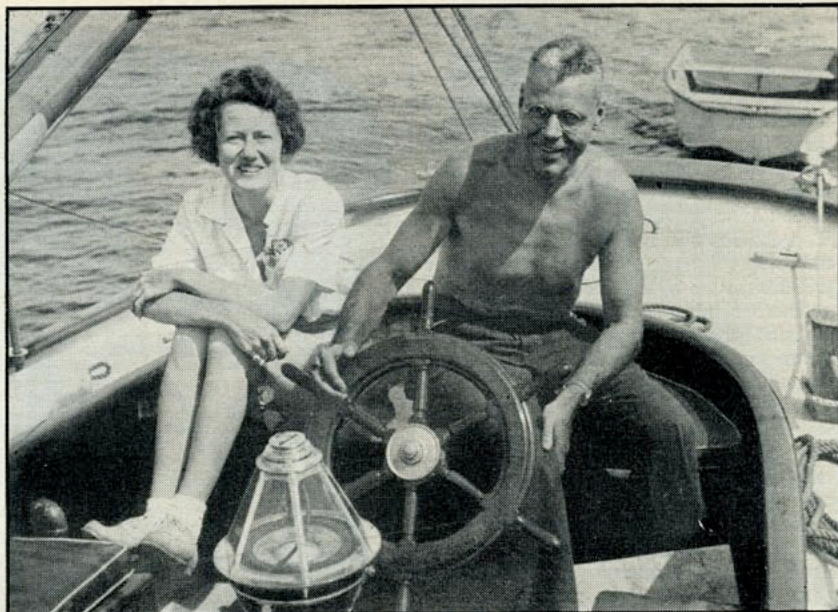
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DR. RHODS & WIFE  
*Also helplessness and depression.*

tern, but in healthy, normal males & females there is a general similarity. In cancer patients, however, there is a striking difference. A new steroid, 11 hydroxy-etiocolanolone, almost always absent in healthy persons, shows up in about two out of three cancer patients.

A remarkable discovery came when a woman from whom Dobriner had been collecting urine for several years suddenly developed cancer of the breast. Dobriner found, on examining the stored extract from her urine, that she had been excreting the uncommon steroid for at least three years before her cancer developed. The tumor was removed surgically and the woman is now apparently in perfect health. But she still excretes the cancer-pointing steroid.

It looks to Dobriner as if the presence of the uncommon steroid may indicate not only cancer but sometimes an abnormal hormone situation that leads to development of cancer. "The endocrine system," he says, "consists of a number of glands that should be in harmony, like a symphony orchestra. We want to prove that in cancer the orchestra is haywire."

Dobriner points out that steroid identification is not a good test for early cancer. It is not sure; it takes too long, and it costs too much (\$10,000 for a complete job). But he is cutting down the time and cost. As he collects more records, other startling facts are showing up. For instance, people with hypertension (high blood pressure) generally excrete a special steroid. No one knows why, but Dobriner hopes to find out. The mysterious steroids from the glandular orchestra are apparently concerned with all the changes in the body's cells. "If you want to know about cancer," says Dobriner, "you must also know about old age, hypertension and degeneration." Thus, cancer research may discover, as a sort of byproduct, what makes people grow old.

**Human Laboratory.** The most important of Sloan-Kettering's laboratories is the great hospital next door, including the Strang Prevention Clinic. Dr. Rulon W. Rawson, head of the Division of Clinical Investigation, explains that, after all, human patients are the best source of information about human cancer. Clinical investigation is a two-way street. Observation of patients, especially their reaction to treatment, gives clues for researchers to follow. When the laboratories develop some new method applicable to human beings, the hospital is the only conclusive place to try it out.

A good example of the interaction of research and clinical study is the work of Rawson's group and of Dr. L. D. Marinelli on the treatment of thyroid cancer with radioactive iodine. Since the thyroid gland eagerly absorbs iodine (which it uses to make a hormone), doctors have hoped that a cancerous thyroid would absorb radioactive iodine 131 in sufficient quantity to kill the unruly cells. Unfortunately, this effort was none too successful. The normal thyroid took up nearly all the iodine. The cancerous thyroid cells, particularly the metastases in distant parts of the body, took up so little that they were hardly damaged by the iodine's radioactivity.

**Trained Metastases.** Dr. Marinelli and his associates worked out a neat method of dealing with this difficulty. First they removed the patient's normal thyroid and with it the original cancer. This left the metastases which, they found, often consisted of cancer cells that retained faint remnants of the normal function of the thyroid. With the normal thyroid gone, the degenerate cells awoke and began to act like thyroids. Stimulated by the proper drugs, they began taking up iodine and making it into thyroid hormones. Then Dr. Marinelli gave radioactive iodine to the patient. The tumors, acting as pinch-

hitting thyroid glands, absorbed it readily, and were in some cases destroyed by the iodine's radiation.

Some types of thyroid cancer do not respond to this treatment. The cells cannot be trained to take up iodine and kill themselves. But many patients have been helped to some extent. In four of them the disease has been definitely checked, though not wiped out entirely.

More important, Dr. Rawson believes, is the proof this method gives that cancer cells are not "autonomous"; that in some cases, at least, they can be trained to resume some of the functions of the normal cells from which they are descended. If they can be trained, perhaps they can eventually be trained to destroy themselves.

**Dread Decision.** The patients in Memorial Hospital are never used as experimental animals. Neither are they denied any treatment, however new, that might possibly do them good. Virtually all patients beyond the help of surgery are willing to have new drugs and treatments tried on them.

In each individual case, the doctors have to make a grim decision. Should they prolong a life that is sure to be "unsatisfactory?" Should they, by prolonging life, place a crushing burden on the patient's family? Should they, in desperate cases when everything else has been tried, use a drug so dangerous that it may kill the patient immediately? Such questions have no single answer. The doctors decide each case separately, considering such matters as the painfulness of the treatment and the patient's chance for happiness during his possible remission.

Some cancer doctors admit that they have almost cracked up thinking about such things, and about their utter helplessness in hundreds of cases. Dr. Rhoads, too, has his moments of depression. He is sure that his method of concerted frontal attack, submerging niceties of scientific temperament, is correct. But he also knows that neither he nor his men nor anyone else in the world has yet found a cancer cure.

**Perhaps . . .** Sloan-Kettering is certainly trying hard. From his office on the 13th floor, Dr. Rhoads can review the work of the world's most impressive array of cancer-fighting weapons: the eggs with their little glass windows, the tubes of cancer tissue on their merry-go-rounds, the rows of deft-fingered girls with the squeaking, doomed white mice, the dangerous viruses, the green and white molds, the thousands upon thousands of chemical agents, the scholarly chemists, physicists, biologists, clinicians all working in unison to defeat the common enemy: cancer.

Perhaps at that moment in Memorial Hospital, a life frayed with pain and dimmed with morphine is flickering down to the cold. Dr. Rhoads is no callous technician. His confident eyes grow sad when he hears of this everyday event. He looks out the window at the cluttered roofs of New York and at a great bridge roaring with traffic. "It needn't be," he says, "not always."