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CELL EXAMINATION— NEW HOPE IN CANCER

BY CHARLES S. CAMERON, M.D.

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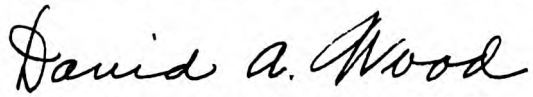
The cure for cancer of the womb in virtually all women stricken with this form of the disease has become an achievable goal. This could mean the annual saving of 16,000 lives — certainly one of the brightest prospects in cancer control today. Behind this bright hope is the development of a detection technique known as the cell examination. Because the technique is becoming more and more widely accepted and used, its potential for saving lives cannot be overestimated. For this reason the Public Affairs Committee asked Dr. Charles S. Cameron, Dean of Hahnemann Medical College, to present the story of the cell examination — its history, various uses, facilities existing today, the many places in which the technique is being used, and proof of its success. As Medical and Scientific Director of the American Cancer Society, Dr. Cameron pioneered the acceptance and use of the cell examination among the leaders of the medical profession. It is no exaggeration to say that many lives may be saved by personal action on information contained in this pamphlet.



M. D.

PRESIDENT, AMERICAN CANCER SOCIETY 1956-57
MEMBER, BOARD OF DIRECTORS, AMERICAN CANCER SOCIETY

the public affairs committee

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BY CHARLES S. CAMERON, M.D.

Dr. Cameron, Dean of the Hahnemann Medical College in Philadelphia, was Medical and Scientific Director of the American Cancer Society from 1947 to 1956. His most recent book, The Truth About Cancer, *was published last year by Prentice-Hall. . . . The art work in this pamphlet was prepared by Bill Dove for Visual Services Inc.*

FOR YEARS scientists, groping with the riddle of cancer, have been on the lookout for a simple, sure, cheap means of detecting it in the early stages.

One thing they know about these mysterious morbid growths that go wild in the body: some kinds of cancer can usually be cured if caught soon enough. Until a certain cure for this insidious disease is found in our laboratories, all efforts to combat cancer must lean heavily on catching telltale symptoms early.

Unfortunately, and this is what makes cancer so deadly, it is too often hard to detect. Sooner or later it will grow to a size that will make its presence felt. Frequently it hides secretly, sending out no sign until it has infiltrated so deeply in the body that it is practically impossible to oust.

Obviously, a procedure that would reveal cancer before it has given rise to symptoms would be of greatest importance in slashing the toll of deaths.

Such a means, in the opinion of many physicians, has now been found. It is being applied on a wide scale in connection with one particularly prevalent type of cancer—uterine cancer, the second most vicious cancer killer of women, of which 16,000 women died last year.

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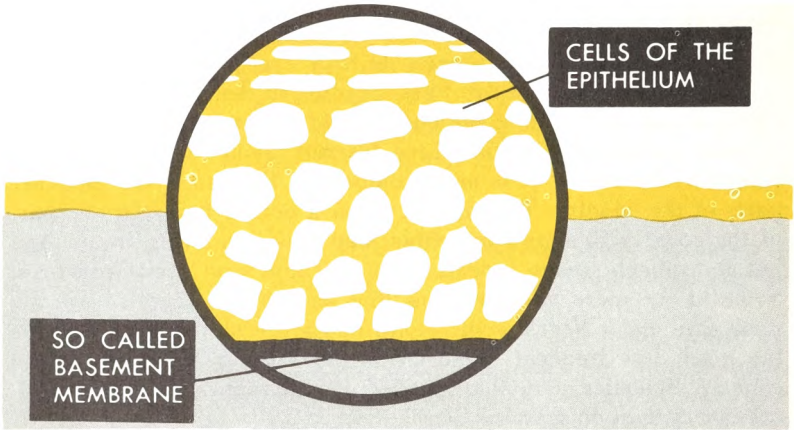

membranes like the lining of the uterus or, particularly, the cervix, shed cells that eventually find their way into the vaginal mucus. If a sample of this is taken, it is possible to detect cancer cells floating around in it. Thus cancers can be found out long before they can be felt or seen.

By withdrawing a little of this secretion in the course of a pelvic examination, putting it on slides and staining the cells with special dyes, the nature of the cells present in the smear can be determined with a high degree of accuracy, especially in cases of cervical cancer.

development of the cytologic technique

The man chiefly responsible for developing this life-saving procedure is Dr. George N. Papanicolaou, who in his lifetime enjoys the acclaim of science as "the father of cytologic diagnosis."

Although his work has been mostly in uterine cancer, the discoveries he made are now the basis for extensive research as to how they may be successfully applied to other parts of the body. Techniques are being developed that point toward some success in detecting cancer in other parts of the body from which cell samplings may be taken: stomach, esophagus, lungs, rectum, even the pancreas.

But as of now, uterine cancer—particularly cancer of the cervix—is the most promising target, because of its nature, accessibility, adaptability, to mass screenings, and the high rate of cure it portends.

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"the Pap smear"

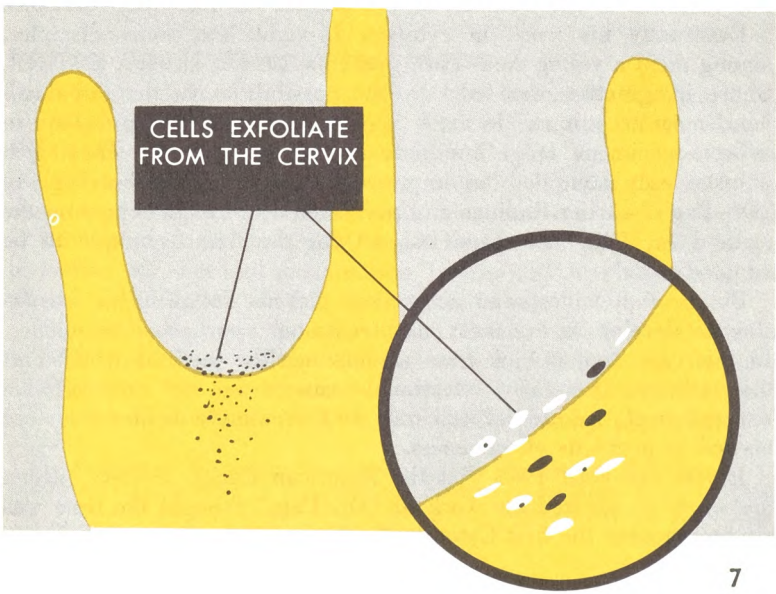
The story of how "Dr. Pap," as he is affectionately called by all who know him, developed the cell test that colloquially bears his name—"the Pap smear"—is a dramatic one.

For years after it was publicly announced, his method of checking for cancer was, like Mendel's law in the 19th century, ignored.

During the 1920's this quiet Greek emigré scientist was working at a research problem that absorbed much of the scientific interest of the day. It had been noted that different kinds of cells were cast off by the uterus and vaginal lining at different periods in the ovulatory cycle. Dr. Papanicolaou observed through his microscope that, floating among the uterine cells whose shape varied according to the stage in the ovulatory cycle, there were occasionally some other curious cells that were different in another sort of way.

The nucleus of a normal cell is about a fifth the width of a cell. These other cells had abnormally large nuclei, more than half as wide as the whole cell. Were they cancer?

Scientists have long been familiar with cancerous tissue under the microscope, and know well its patterns of disordered growth,



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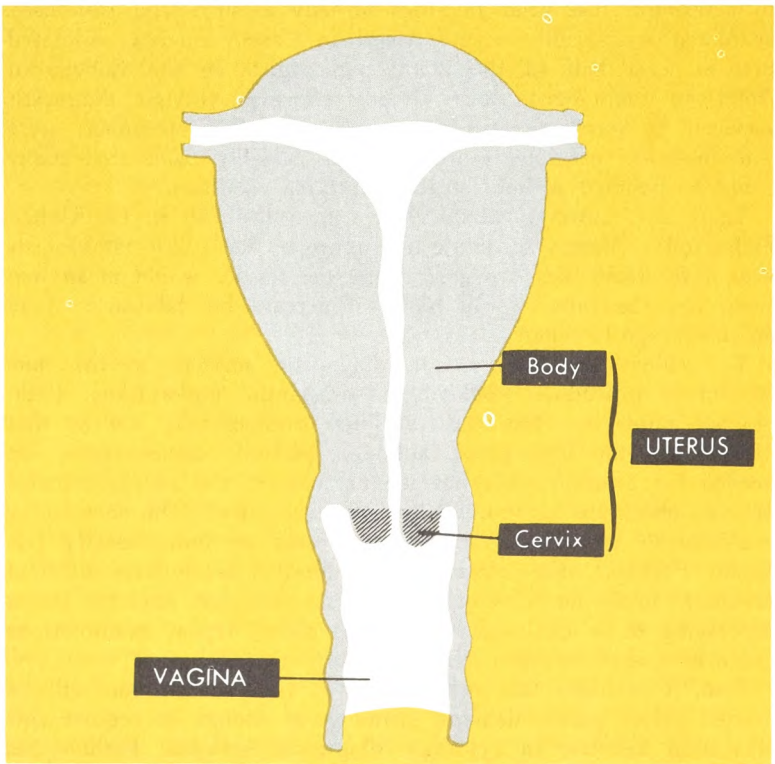
are confident that, after some immediate enlargement of facilities and manpower, additional needs for increase in services can be taken in stride, on an evolutionary basis.

Meanwhile, the American Cancer Society and the National Cancer Institute are joining hands with pathologists and doctors to help enlarge cytologic facilities. They both have given grants to the National Committee for Careers in Medical Technology for the production and utilization of a recruitment film to induce more young people to enter the career of cyto-technologist. In addition, the Society is intensifying its support of training centers for more pathologists in cytology and more cyto-technologists, on whose scientific skills the final success of the program will hinge.



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When this happens, cancer can be controlled as it should be — and as it can be, with the knowledge we now have. As many as 80,000 lives, now estimated to be lost needlessly each year because cancer symptoms go too long unheeded, can be saved.

CANCER'S DANGER SIGNALS



1. Unusual bleeding or discharge.
2. A lump or thickening in the breast or elsewhere.
3. A sore that does not heal.
4. Persistent change in bowel or bladder habits.



5. Persistent hoarseness or cough.
6. Persistent indigestion or difficulty in swallowing.
7. Change in wart or mole.

Go to your doctor to learn if your signal means cancer.

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WANTED CYTO-TECHNOLOGY

HUNDREDS of skilled laboratory technicians will be needed to screen millions of slides, if the cytology method described in this pamphlet is to be applied extensively to save thousands of women from cancer of the cervix and womb.

If you or someone you know would be interested in preparing for service as a cyto-technologist, the *American Cancer Society* stands ready to help you with information and training fellowships.

QUALIFICATIONS:

Applicants for special training must have completed high school, and two years of college or the equivalent. Courses in biology and chemistry are prerequisites.

TRAINING:

Qualified applicants approved by a local committee of pathologists are assigned to a training laboratory for a six-months course in cytology. Fellowships to cover tuition and basic living costs during the training period may be requested from (State) Divisions of the American Cancer Society.

PART-TIME WORK:

In some places, opportunities will be available on a half-time basis, especially to those already exceptionally qualified by teaching experience in biology or extensive studies in the biological sciences.

NEEDED NOW:

In many communities, the demand for cyto-technicians is urgent, and the demand will increase year by year, as more and more women learn of the cell examination's role in early detection of uterine cancer.

WHERE TO INQUIRE:

For further information, phone or write to your local American Cancer Society, or to the National Headquarters at 521 W. 57th St., New York City. Scholarships are also available from the National Cancer Institute, Bethesda, Maryland.

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