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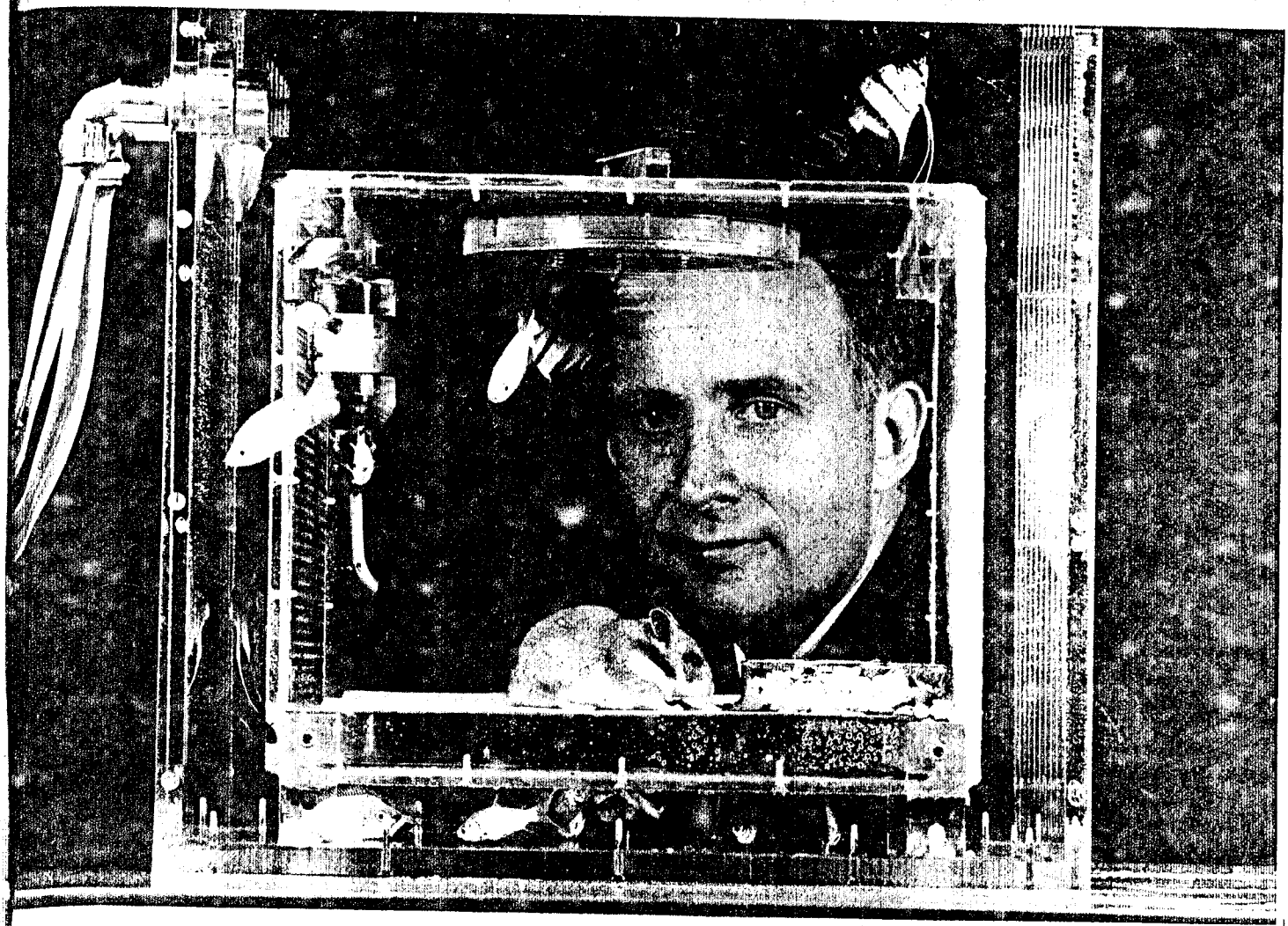
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SCIENCE NEWS LETTER

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General Electric Research Laboratory

Filtered Fresh Air

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E FIELDS

TECHNOLOGY

Insulating System Creates Square Vacuum Bottles

➤ A GOAL that has eluded scientists for more than half a century, a square vacuum bottle, has now been reached because of a newly developed vacuum insulation system.

A major obstacle to "squaring the vacuum bottle," which would give it more storage space, was the need for a filler material that would prevent the walls of a bottle from collapsing under atmospheric pressure and would not transmit too much heat by conduction.

Flat panels of the new system, called P-Zero, have passed the atmospheric and thermal tests with great success, the General Electric Research Laboratory, Schenectady, N.Y., developer of the new system, reported.

The system consists of a thin metal envelope that encloses a specially compacted pad of glass fiber. It has potential applications in the trucking, railroad, chemical and food industries as well as in the manufacture and storage of liquid rocket fuels.

Fundamental studies on thermal insulation by Dr. Herbert M. Strong, Dr. Francis P. Bundy and Harold P. Bovenkerk produced this new system.

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TECHNOLOGY

Computer Shows How Shelley Aped Milton

➤ BECAUSE OF electronic computers readers can now get more accurate versions of literary classics.

By comparing different editions of a writer's work, literary data processing is catching changes and errors. The reader is thus offered a version closer to the author's intent.

The computer is also being used as a never-miss proofreader; its eyes do not grow tired, and its attention never wanders. It can rapidly compile indexes, and concordances which are alphabetical listings of the principal words in a work and cite the passages in which they occur.

Dr. Vinton Dearing, an English professor at the University of California at Los Angeles, is using a computer in his work on the 17th century English poet, dramatist and critic, John Dryden.

A computer has been used to show how the diction of the 17th century Puritan poet, John Milton, was apparently purposely imitated by the 19th century romantic poet, Percy Shelley, to refute Milton's philosophical contentions.

Development of a writer's unconscious thought and the growth of language by charting changes in the meaning of words also have been the subjects of computer study. Other computers have produced indexes and concordances of the Dead Sea Scrolls, the works of St. Thomas Aquinas and other great writings.

Dr. Dearing says the computer is not only freeing scholars from a large amount of tedious, repetitious clerical work but is giving them more time for research and for the enjoyment of literature.

Dr. Dearing points out, however, that a computer deals only with quantity—not quality.

"It cannot decide whether a piece of writing is good literature, nor can it tell us, at the present time, about the personality of the author," he said.

• Science News Letter, 86:297 November 7, 1964

MEDICINE

Cervical Cancer Need Not Injure Baby

➤ IN RARE CASES of pregnancy accompanied by cancer of the cervix or neck of the womb, babies need not be sacrificed for early treatment of the mother unless the malignancy has invaded the womb, an Air Force physician reported.

Six babies were allowed to come to term when the cancers were "in situ," or confined to the site of origin on the outside of the womb, Dr. Calvin N. Ladner told SCIENCE SERVICE.

Caesarian operations were performed when the cancer had become invasive, however, which occurred in 11 cases. All patients were treated, of course, after the babies were delivered.

At Madigan General Hospital in Tacoma, where Dr. Ladner is on the staff, approximately one in 2,200 deliveries occurred when cancer was present, he said. He warned that individual cases require different treatment, and especially emphasized that no woman should allow herself to become pregnant if she knows she has cancer.

"We were able to follow eight of our patients for three years," Dr. Ladner said, "and only one mother had died."

Dr. Ladner made his report to the annual scientific meetings of the Armed Forces Chapter of the American College of Obstetricians and Gynecologists at Andrews Air Force Base, Washington, D.C.

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AGRICULTURE

New Kind of Onion Resists Storm Damage

➤ THE LOWLY ONION can now stand up to the mighty thunderstorms.

A new hybrid, dark golden onion called Sunburst has recently been bred to resist tipburn—a damaging burn on the plant tips caused by ozone accumulated during thunderstorms. Tipburn is a serious problem to many Midwest farmers.

This globe-type onion, developed by biologists at the University of Wisconsin, is bred from two other onions called W4A and W101B. The Sunburst has a dense upright top with leaves that do not break as the plant grows and scales that do not rub off when handled. During storage the onion will shrink slightly, and over the winter months it will not sprout roots.

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AGRICULTURE

Fruitful Results from 'Air Conditioning' Fruits

➤ BY "AIR CONDITIONING" fruits and vegetables with a fine spray of water, a scientist has produced healthy crops, even during a summer with above-average temperatures.

With tiny water nozzles, one-sixth of an inch in diameter, Dr. Robert Carolus of Michigan State University, East Lansing, sprayed tomatoes, lettuce, strawberries and other garden crops. By reducing the water loss from the leaves, a satisfactory water balance in plants was maintained.

Mist irrigation has several advantages over common soil irrigation, Dr. Carolus said. It cools the vegetables, reduces their transpiration and conserves their energy for producing higher yields.

Dr. Carolus found that the "air conditioning" reduced transpiration or water loss by more than 80% when the air temperature was 85 degrees Fahrenheit and humidity 35%.

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PUBLIC HEALTH

Asbestos Workers Live Longer But Get Cancer

➤ ASBESTOS WORKERS used to die young of tuberculosis or pneumonia brought about by poor factory conditions and lack of drugs to control these diseases. Now they live longer but get cancer.

Later effects of asbestosis, or lung disease caused by inhaling asbestos dust, included severe bronchial conditions and enlargement of the heart, Dr. J. C. Gilson, researcher of Glamorgan, Wales, told an international conference on biological effects of asbestos in New York City.

"Still more recently," said Dr. Gilson, "the workers who have developed only moderate degrees of asbestosis have survived long enough to develop the associated bronchial carcinoma."

In addition, and unexpectedly, the researcher reported, malignant tumors called mesotheliomas, arising from the linings of the chest and abdominal cavities, are now occurring in workers after a delay of 40 or more years.

Another speaker from the Pneumoconiosis Research Unit of Glamorgan was Dr. J. C. Wagner, who told the conference that it is not known exactly how asbestos causes disease, nor how asbestos fibers migrate in the body.

Injections of the major varieties of asbestos—chrysotile, crocidolite and amosite—have apparently caused mesotheliomas in the chest cavities of animals.

These pleural mesotheliomas have also been the result of injections of silica, which occurs naturally in asbestas as well as in sand and quartz.

To find out more about the effects of asbestos, Dr. Wagner said there is a need for a joint effort by the experimental biologist, mineralogist and chemist.

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