

ENGINEERING

Plastics Reveal Plumbing

Transparent pipes are being used in experiments to study the home plumbing system. They are expected to aid in making out future plumbing codes.

► CLEAR plastic pipes which you can look right into will not go into the plumbing of your "dreamhouse," but the National Bureau of Standards said that they may help overcome one serious housing problem and aid in untangling some jumbled and costly plumbing laws.

The transparent pipes are being used in full-scale home plumbing systems set up at the Bureau in Washington. By peering into the pipes and even taking motion pictures, Bureau scientists hope to be able to tell city code writers what they should permit and what they should ban in plumbing codes.

"The thousands of conflicting plumbing codes existing in the United States today not only cost the public millions of dollars annually, but are also seriously hindering the nation's housing program," a Bureau statement charged.

These codes in some 1,500 cities are so different that manufacturers cannot standardize many plumbing products. What meets one code may not meet another. Because of this legal conflict, the Bureau is making its study in cooperation with the Uniform Plumbing Code Committee at the

request of the Housing and Home Finance Agency.

Using the plastic pipes, Bureau scientists have studied the operation of traps, the curved sections of drainage pipes under lavatories or bathtubs, and different venting systems for home plumbing systems.

Traps use water to seal the pipe and prevent back-tracking of gas and sewer odors, but the seal may be broken by what is called self-siphonage. Vent pipes are installed to reduce the suction from fixture drains. How close to the trap these vents

must be is a critical home plumbing problem. Different city codes permit anything from two to eight feet.

Experiments with the laboratory plumbing showed that the shape and size of the stopper outlet in your sink or tub are important in holding the seal. Small changes in the size and shape, it was pointed out, may cause a big change in the rate of discharge.

It also was found that short-turn drainage fittings are better than long-turn fittings and that large internal diameters are needed in traps.

Stack-venting and wet-venting were approved by the scientists. In stack-venting, the drains of several fixtures use one vent, at a saving in plumbing cost. Wet-venting systems use the drain of one fixture as vent of another. This economical arrangement has been forbidden by some municipal plumbing codes, but the studies showed that it is practical with only simple restrictions.

Science News Letter, May 14, 1949

MEDICINE

Find Cancer Electrically

► AN electrical detection method may become a mass cancer screening tool of the future. The method is relatively simple, takes about 25 minutes for each test, and has an accuracy rating of about 85%.

It was devised by Dr. Harold S. Burr, professor of anatomy at Yale University, and Dr. Louis Langman of the depart-

ment of obstetrics and gynecology at New York University College of Medicine.

So far, it has been used only with women patients to detect cancer of the female genital tract. Drs. Burr and Langman feel, however, that the principle applies to all forms of cancer and they are now planning the necessary research for applying the test to other kinds of cancer.

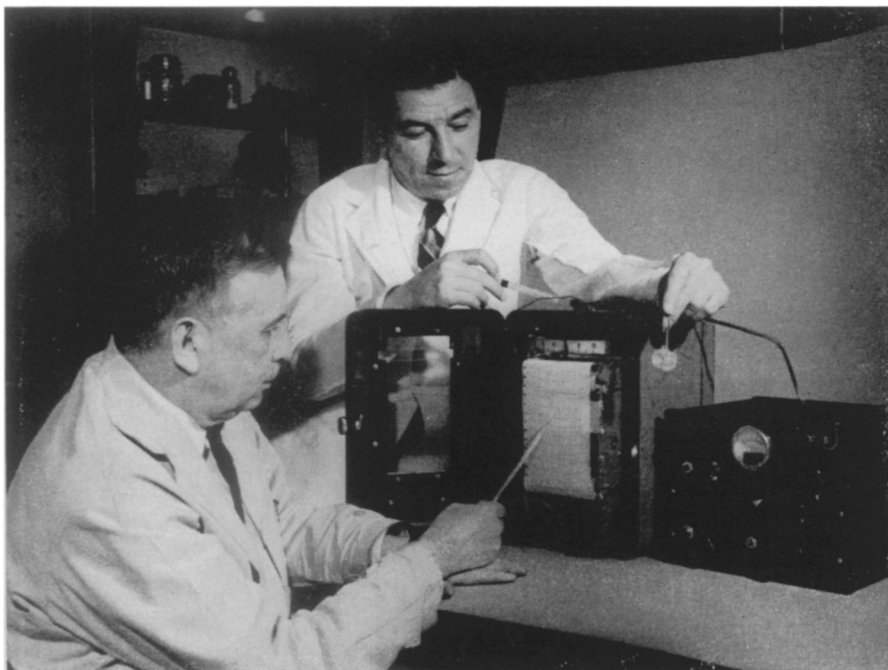
The test has been given during the past two years to several hundred women at Bellevue Hospital. Cancer was detected in 74 of 75 women diagnosed by other procedures as definitely having cancer. Of 616 women diagnosed as no cancer by the electrical detection method, other methods proved definitely that 611 did not have cancer.

Certain conditions other than cancer, such as pregnancy, may give the same reading on the test as cancer does.

"These tests," the two doctors state, "suggest that the new technique offers an excellent method for screening suspected cases of malignancy (cancer)."

The test is based on: 1. the fact that living systems, such as the human body, possess electrical activity; 2. the idea that electrical manifestations, such as those from the heart which give electro-cardiograms for diagnosis, are evidence of an electrodynamic field in all living beings; and 3. the theory that this field, through its inherent forces, imposes design on all living matter.

Since the design has gone awry in cancer, Dr. Burr reasoned that there must be a detectable electrical difference between cancer tissue and normal tissue. To test the theory, it was necessary to design special electrical equipment. Cecil T. Lane, associate professor of physics at Yale, helped the



CANCER DETECTION—Examining their specially-designed electrical apparatus for detecting certain kinds of cancer are Dr. Harold S. Burr (left) of Yale University and Dr. Louis Langman of New York University.

medical men with this problem by working out equipment using a microvoltmeter. Connected on one side are the electrodes

which are attached to the patient's abdomen and on the other side is the photoelectric recorder.

Science News Letter, May 14, 1949

MEDICINE

Find New Factor in Blood

➤ A NEW factor has been found in human blood. You have it. Practically everybody has it. It is so universally present that when the blood of 2,500 women was examined only 5 (0.2 per cent) were found to lack it. It is reported in the journal *SCIENCE* (May 6), by Drs. Philip Levine, May Backer, Milton Wigod, and Ruth Ponder, of the Blood Testing Laboratory, Ortho Research Foundation, Raritan, N. J., and the Nassau Hospital Laboratory in Mineola, N. Y.

Discovery of this new blood factor was due, however, to the fact that one woman

did lack it and because of that her blood was incompatible with that of her infant, resulting in illness in the baby. The new factor which 99.8% of the population has is named for this one woman who did not have it. It is called by its discoverers the Cellano factor.

A list of Cellano negative blood is being prepared. Such blood would be essential for use in transfusions of those rare persons whose blood is incompatible with Cellano positive blood and also for their babies who may be ill as a result of having Cellano negative mothers.

Science News Letter, May 14, 1949

MEDICINE

Remedies for Fungus Ills

➤ REMEDIES which speed up the cure of common fungus infections of the skin, hair and nails were reported to the meeting of the Medical Society of the State of New York in Buffalo, by Dr. Frederick Reiss of New York.

Accepted fungus-killing agents were combined with a skin-penetrating chemical which resulted in more rapid cures than was possible with other fungicidal remedies. Dr. Reiss' "new vehicle" was particularly effective in stepping-up the cure of ringworm of the nails in which they become white, thickened, soft and brittle.

Ringworm of the scalp responded dramatically to another remedy, podophyllin, which comes from American mandrake or

May-apple root. This is an old Indian remedy which some years ago went on trial as an anti-cancer drug.

Results with podophyllin were remarkable. A cure was obtained in one patient in a week, Dr. Reiss reported. Others began to improve in three or four days, the Wood light test showed.

Trial of a compound containing nitrogen, zinc and sulfur was successful in most treatments of the parasitically-produced skin diseases. Dr. Reiss found it was especially valuable in the cure of a condition which is characterized by scaling, patches on the shoulders, chest, upper back and upper abdomen.

Science News Letter, May 14, 1949

NUTRITION

Spinach Not Most Disliked

➤ ALTHOUGH much-joked about spinach is high on the list of foods pushed aside and not eaten by college freshmen, it is better liked than broccoli and asparagus.

The latter two vegetables were eliminated from the diet, either because of dislike or allergy, 35 times by the 595 freshmen whose eating habits were studied by Drs. Clara B. Young and Clara A. Storvick, of the School of Home Economics, Oregon State College. Liver was eliminated 77 times and heads the list of disliked foods.

The college boy eats more nourishing meals than does the co-ed. He eats better if he eats in a boarding house than if he gets his meals in a private home. The

contrary is true of girls; they eat better in a home.

The college freshman, in general, is well fed. Nearly two-thirds of the students eat a fair diet, 19% have good diet and only 17% have poor diet.

The popular picture of the college freshman as living on candy bars and cokes was exploded by this survey. Average intake of sweets was found to be the equivalent of two candy bars a week, the range being from none to as many as 28 bars weekly. Average consumption of carbonated beverages was approximately three glasses weekly; some drank none while the most was 21 glasses a week or three a day.

Breakfast is neglected by some students. Although 76% eat breakfast every day, 15% ate breakfast only one to six times a week and 9% did not bother with breakfast at all.

In general, the student who does not eat breakfast has a poorer diet than those who eat this morning meal. Of the 452 who start the day with breakfast, 22% have a good diet and only 14% a poor diet, the rest being in the "fair" pigeonhole. Of those who eliminate breakfast, 43% eat a poor diet and only 4% a good diet.

Details of the food-habits survey of college freshmen are reported in the *JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION* (April).

Science News Letter, May 14, 1949

BIOLOGY

Explode Theory That There Are Less Live Male Births

➤ THE widely-held idea that boy babies are less likely to survive the pre-birth period and be born alive was exploded by study of the 5,787 fetuses in the collection of the Carnegie Institution of Washington, the result of miscarriages in the third to the seventh month of pregnancy.

There is no tendency for a higher proportion of males among the younger fetuses, reports Dr. Christopher Tietze, in *HUMAN BIOLOGY* (Sept. 1948). He found no evidence that the sex ratio at the beginning of pregnancy is materially different from the approximately 106 boys to 100 girls who survive to a safe birth.

"Hypotheses based upon a heavy excess mortality of males during the previable period would seem to be in need of revision," Dr. Tietze concludes.

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ACOUSTICS

You Speak More Slowly in Large than in Small Room

➤ YOU SPEAK more slowly in a large room than in a small one and you raise your voice so that you speak louder in a small room with less reverberation.

This was shown when 23 men read 12 test phrases into a microphone connected with a meter that registered the intensity of the voice and the length of time of reading. The experiment was conducted in eight rooms of differing size, shape and reverberation time.

Shape of the room did not affect either the speed of reading or the voice intensity. But both the size of the room and the reverberation, due to the sound treatment of the rooms, were important.

Results of the experiment were reported to the meeting of the Acoustical Society of America in New York by Dr. John W. Black, of Kenyon College, Gambier, Ohio.

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