

## MEDICINE

**Breast Cancer Found In Extrovert Types**

► WOMEN who are outgoing and uninhibited are more likely to have breast cancer than others, two English researchers reported.

About 200 patients in an English general hospital, 32 of them with breast cancer, were given a questionnaire based on the Maudsley personality inventory, called MPI for short. This questionnaire consists of 48 questions, 24 to measure extroversion and 24 for neuroticism, or mental disorder.

Extroversion scores were so much higher in the cancerous group that the investigators believe they are an indication of "constitutional deviation." They deem it unlikely that the "observed differences in extroversion are a result of the illness or the stay in the hospital." The patients in the hospital control group were in very similar circumstances to the cancer group.

The body build and hormone secretion of the extrovert could be to blame, although the nature of the association is not clear. Dr. Alec Coppen and Maryse Metcalfe of the Medical Research Council, Neuropsychiatric Research Unit, Carshalton, Surrey, England, reported in the *British Medical Journal* (July 6).

Extroversion has traits in common with "substability," which has been found to be related to factors in the body build, and with urinary excretion rates of certain steroids, substances of hormone origin. The substable personality is described as warm, concrete, industrious, sociable and naive.

• *Science News Letter*, 84:34 July 20, 1963

## GENERAL SCIENCE

**Air Conditioning Helps If You Use It Right**

► AIR CONDITIONER owners would be much more comfortable on hot, sticky days if they were better conditioned in the use of their machines, experts say.

An air conditioner helps in four ways—it cleans, cools, dehumidifies and circulates the air. Often, however, only one or two of these are necessary, and a simple fan or dehumidifier will do the job.

Here are a few points to keep in mind:

First, do not try to air condition your whole house. Kitchens, bathrooms and laundry rooms are not used often enough to make it worthwhile. Instead, an exhaust fan should be installed in these rooms and used only when necessary. Likewise, do not waste an air conditioner on basement rooms; a dehumidifier is usually enough. Basement rooms are cooler than the rest of the house anyhow.

Second, whatever air conditioning you do have, whether it be a one-room window type or a central air conditioning system, should be left on all the time in hot weather.

Only when you go away for a weekend or longer should it be turned off. Otherwise, leave it turned on at low power. The reason for this is that an air conditioner has to work harder to bring the tempera-

ture down than to keep it at a low level once it is there.

Third, place exhaust fans as near as possible to stoves, showers and electric clothes dryers. The air, moisture, and odors from these three prime sources of heat and humidity should be sent directly outdoors, never into other parts of the house. Instead, air from the air conditioned parts of the house should be sent to these "hot spots" on its way to the outside.

Finally, do not overcool the air. This results in on-and-off operation and high moisture condensation. Do not buy a bigger air conditioner than you need, and do not run it full blast unless you are really hot.

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## PUBLIC HEALTH

**Experts Tackle Problems Of Nation's Alcoholics**

► THE PLIGHT of the country's nearly five million alcoholics was considered at the first conference on alcoholism to be sponsored by the Department of Health, Education and Welfare. Forty-one organizations were represented.

A carefully selected group of judges, clergymen, physicians, educators, social workers and others, including a representative of the licensed beverage industry, discussed research, education, treatment and rehabilitation in four work groups during the all-day meeting.

The conference explored additional measures that the department might take. Major accomplishments of the U.S. Public Health Service and the Vocational Rehabilitation Administration were discussed.

Out of four and a half million dollars to be spent next year, nearly one million dollars will be spent on vocational rehabilitation of an estimated 1,400 alcoholic persons through state agencies.

Alcoholics Anonymous and the American Psychiatric Association were among the organizations represented. The number of alcoholics is increasing by an estimated 200,000 a year.

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## BIOCHEMISTRY

**Overdose of Digitalis Offset by Citrate Salts**

► HEART IRREGULARITIES caused by an overdose of digitalis can be treated with citrate salts.

This new treatment, so far used only on animals, is reported by medical investigators from the University of California, Los Angeles, Medical School and Cedars of Lebanon Institute for Medical Research. They believe it can be applied to humans without the serious side effects of other drugs now used.

Drs. Eliot Corday, Robert B. T. Skelton, Herbert Gold and F. F. Barbieri found that the citrate salts are able to neutralize toxic effects of excessive doses of the heart stimulant, digitalis, and correct abnormal heart rhythms such overdoses may cause.

An excessive dose of digitalis may produce an erratic heart beat, perhaps causing the heart to race madly. These disturbances may persist until the substance is excreted from the body, which may take as long as three or four days.

Such abnormalities from digitalis poisoning are associated with a death rate as high as 65%.

It has long been known that if the calcium content of the blood is reduced, toxic effects of digitalis on the heart will be corrected. Potassium salts and a chelating compound (EDTA) have been used for this condition. But these drugs may cause serious side effects in patients, such as nausea, skin rash, kidney damage and blood clots.

The effect of the citrate salts apparently is to "grab" the calcium in the blood, which results in correcting abnormal heart rhythms instantly. To maintain normal rhythm, the salts must be dripped into the veins for a prolonged period, however, until the digitalis is excreted.

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## ENGINEERING

**Fluid Switches Studied For Use in Computers**

► A NEW TYPE of switch flipped off and on by liquids or gases is under study for use in computers and control devices.

The switch would replace electronic ones that break down under high temperatures and heavy radiation.

Dr. Charles Taft, assistant professor of engineering at Case Institute of Technology, Cleveland, is directing the study to find the best design for parts and circuits using fluid control.

Many control systems have fluid valves but conventional models have many moving parts that wear and stick.

Case engineers employ a method of controlling a fluid by a fluid. The Diamond Ordnance Fuze Laboratory in Washington, D. C., discovered this method of using one jet to control a stronger jet.

The Case fluid switch resembles a stick drawing of a man. At the head, the main jet enters and can be moved from side to side by control jets in the position of outstretched arms. The jet leaves through either of the legs, which serve the yes-no (on-off) function of an electric switch.

The Case experimenters are using compressed air, although any type of liquid or gas may be used in the valve.

A set of five fluid switches takes up about as much space as a 25¢ piece. The switches are cheap to build, and can amplify power from 10 to 5,000 times. They can operate at high temperatures and in heavy radiation fields.

Since there is no conversion needed from fluid to mechanical action, a fluid signal can be used to activate another fluid.

Case engineers pointed out, however, that fluid switches are slower than electronic elements and get slower as the switch size increases and the fluid becomes thicker.

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