

MEDICINE

Prostate Cancer May Be Twice As Prevalent

► **CANCER** OF the prostate gland may be much more common and strike men much earlier than was previously believed to be the case.

Dr. Perry Hudson, assistant professor of urology at Columbia University's College of Physicians and Surgeons in New York, made a survey of 104 inmates of a New York flophouse who had no symptoms of cancer obvious enough to take them to a doctor.

He found that 30% of these men, all over 45, had cancer of the prostate. He also discovered that the disease began in these men at ages ranging 10 years sooner than had previously been believed.

Before this survey it was generally believed that only 15% of men over 50 had prostate gland cancer.

Dr. Hudson said, however, that before these figures should be applied to the whole population, he would continue his investigation for a total of 1,000 cases.

The test for prostate cancer was made by taking a small sample of tissue from the part of the gland where 85% of the cancers occur. This was examined under the microscope. Dr. Hudson also discovered that two-thirds of these cases were tumors which had not spread beyond the prostate and thus were still in a position to be cured by surgery.

Science News Letter, April 5, 1952

PSYCHOLOGY

Upbringing Affects Success in Marriage

► **A LITTLE** girl dressing and undressing her doll or fondling her woolly dog is preparing herself for future motherhood if experiments conducted with rats apply also to humans.

Experiments indicating that the so called "maternal instinct" is not all inborn were performed by Dr. Bernard F. Riess, of the American Museum of Natural History and Hunter College, New York City, and were reported to a meeting of the Eastern Psychological Association in Atlantic City.

White female rats were brought up from the time they were weaned to maturity in cages from which everything they could play with or manipulate had been systematically removed. They were not even permitted to touch food pellets, nesting material or other animals.

When the animals became adult and had young, they did not nurse a single pup. Nest building was almost completely absent and other types of normal maternal behavior were greatly reduced. Maternal behavior cannot be considered entirely instinctive or due to changes in body chemistry, Dr. Riess concludes. The manner of upbringing has a lot to do with it, his study shows.

The way the male is brought up also determines whether he will make a good mate or will remain an "old bachelor," the meeting learned from Dr. Frank A. Beach and J. Kagan of Yale University.

When young white rats were allowed to mingle with female rats of the same age at a time when immaturity made complete mating impossible, the habit of treating the female only as a companion persisted in adulthood. These males were less likely to mate as adults.

Science News Letter, April 5, 1952

INVENTION

Gas Turbine Motor Drives Plane Propeller

► **TWO OR** more gas turbines may be used to drive a single propeller, according to a new invention by Frank M. Owner, Stanley W. Mansell and Francis C. I. Marchant, Bristol, England. The patent is numbered 2,589,853, and was assigned to the Bristol Aeroplane Company, Ltd.

Science News Letter, April 5, 1952

PSYCHOLOGY

Value of Mental Tests In Spotting Mentally Ill

► **WHETHER** MENTAL tests can serve to spot those individuals suffering from mental disorders was contested at the meeting of the Eastern Psychological Association in Atlantic City.

Success of the tests at Hillside Hospital, Glen Oaks, N. Y., was reported by Dr. Milton S. Gurvitz. He studied 100 successive cases diagnosed as schizophrenics solely on the basis of psychological tests. Fifty of these were tested by the person who made the diagnosis, but the other 50 were tested by internes and were not even seen by the diagnostician. In 96 of the 100 cases, the clinical diagnosis by the physician was found to agree with that made by the tests although there was some disagreement about the type of schizophrenia in ten of these cases.

The psychotic person cannot always be distinguished from the normal individual on the basis of even an elaborate battery of mental tests, was the conclusion of two other psychologists.

They compared the test results of two individuals both above average in intelligence and both alike in age, sex and veteran status, but one normal, making good social and personal adjustment, and the other hospitalized as a schizophrenic.

The test scores were studied by two clinicians who had never seen the persons studied and also a seminar of 12 clinicians skilled with the tests. They were unable to say which person should be in the hospital, Dr. Roy M. Hamlin and Richard L. Newton of Western Psychiatric Institute and Clinic, Pittsburgh, Pa., told the meeting.

Science News Letter, April 5, 1952

IN SCIENCE

BIOCHEMISTRY

Mental Illness Linked To Copper in Blood

► **A NEW** approach to some mental diseases seemed indicated by findings of a man who is able to measure the minute amounts of metals and other elements found in the human body.

In a study of 40 cases of manic depressive and schizophrenic patients, Dr. Bert L. Vallee of the Massachusetts Institute of Technology, Cambridge, Mass., found almost double the amount of copper in the blood of most of the mentally ill patients.

Dr. Vallee urged caution in reporting his findings. They indicate, he pointed out, that mental illness has a basis in changes in man's physical system. Most psychiatrists, he contended, believe that mental illness is not a physiological process.

There is, normally or otherwise, Dr. Vallee said, only a minute amount of copper in a person's body.

Dr. Vallee also discovered that in persons who have leukemia, sometimes called cancer of the blood, the white blood cells contain only about ten percent of the normal amount of zinc.

Science News Letter, April 5, 1952

VITAL STATISTICS

Secrecy on Birth and Death Certificates Health Problem

► **THE CASE** for and against disclosing information on birth and death certificates was discussed recently by health officers, newspapermen, lawyers and social workers.

Arguments against disclosing such information are: Embarrassment, if not damage, in the case of illegitimate birth or adoption; the danger of false information being filed to avoid such embarrassment.

This last danger is important from the standpoint of health protection of the entire population. Statistics on the number of deaths from various diseases and on complications at birth must be accurate so that medical and public health scientists will know the strength of the disease enemies they are fighting.

But full information may be needed for just settlement of insurance claims and acceptance of certificates as evidence of citizenship. The citizen needing information from his birth record, moreover, should be able to get it with a minimum of delay and red tape, it was pointed out at the forum held under the auspices of the American Association of Registration Executives in Washington.

Science News Letter, April 5, 1952

CE FIELDS

PSYCHOLOGY

Phone Delivers Messages Faster Than Operator Relays

► THE EFFICIENCY of the telephone, radio and other modern communication systems far exceeds that of the human operator.

Figures showing how the operator acts as a bottleneck to hold up the flow of information were presented to the meeting of the Eastern Psychological Association in Atlantic City by Dr. J. C. R. Licklider of the Massachusetts Institute of Technology.

Even a poor telephone circuit can transmit about 20,000 bits per second, a "bit" being the mathematical unit of information. The human mind cannot begin to take in and relay all of this information, Dr. Licklider told the meeting.

He tested college students and graduates on the speed with which they could relay information of various kinds—digits, letters, nonsense syllables, patterns of dots and spoken and written messages. They passed the information on verbally or by pointing.

The highest rate was less than 40 bits per second for all the different kinds of material received.

"It appears safe to conclude," Dr. Licklider said, "that, except possibly in the cases of eidetic imagery and absolute pitch, the human channel-capacity is less than 100 bits per second."

The capacity of a television channel is higher than 10,000,000 bits per second.

"As an information relay, the human operator is indeed a bottleneck," Dr. Licklider concluded.

Science News Letter, April 5, 1952

ORNITHOLOGY

Need Experience in Seeing For Visual Discrimination

► IN ORDER to tell a circle from a triangle, you have to first learn how to see.

This is demonstrated by an experiment in which ring doves spent their first weeks with their heads inside a plastic hood. The head covering admitted diffused light but prevented the birds from perceiving the form of any object.

The hood was put on the birds before they opened their eyes (at three or four days old). When they were ten weeks old a hole was cut in the hood so that the birds could see with one or with both eyes.

Then the birds were trained to distinguish a circle from a triangle and jump to one form and not the other.

It took the birds brought up in a hood "significantly" longer to learn this trick

than it did pigeons reared in a normal manner. The covering produced a slight cloudiness in the fluid of the birds' eyes and reduced their visual acuity a little but these effects were not significant and did not cause the slower learning, according to Arthur I. Siegel, of the American Museum of Natural History and Queens College, who reported the experiment to the Eastern Psychological Association meeting in Atlantic City.

Science News Letter, April 5, 1952

CHEMISTRY

Check Stocks of Explosive Chemicals

► COLLEGE, HIGH SCHOOL and industrial laboratories will be checking their stocks of potassium and sodium chlorate, potentially explosive chemicals, as the result of an explosion of 400 pounds of chlorate at Howard University, Washington, D. C., that killed four janitors moving it after at least 16 years in storage.

Science News Letter, April 5, 1952

PSYCHOLOGY

Camera Shows You Can't Will Dice to Fall Your Way

► WHETHER OR not a person can "will" sixes to turn up on throws of dice depends on who tallies the throws.

The influence of the individual scorer's beliefs on the results of this much publicized experiment in ESP (Extra-Sensory Perception) was reported by Drs. R. S. Kaufman and F. D. Sheffield, of Yale University, to the Eastern Psychological Association meeting in Atlantic City.

The claim that the mind has power over dice was tested by a group of Yale students, part of whom believed in ESP while the rest were disbelievers.

The dice were thrown by a mechanical device which throws 96 dice at a time, the number reported to be most satisfactory by Prof. J. B. Rhine, Duke University "father" of ESP.

The ESP followers and the disbelievers made independent counts of the way the dice fell. The count of each person supported his own beliefs—the believers obtained evidence of ESP influence over the dice, the disbelievers found significant evidence in the opposite direction.

Meantime the Yale investigators had a hidden camera and photographed each throw of the dice. The camera findings showed that both were wrong; there was no evidence that anyone can will the dice to land in a particular way. Neither will the attempt to do so cause them to land in any other way.

"The results of previous ESP experiments cannot be trusted if the method of observation does not involve a permanent record made by a machine," they conclude.

Science News Letter, April 5, 1952

MEDICINE

12-Million-Volt X-rays To Treat Cancer Patients

► A 12,000,000-VOLT electrostatic generator, three times more powerful than any other in operation, has been completed at the Massachusetts Institute of Technology, Cambridge, Mass. Designed primarily to bombard and probe into the secrets of the nuclei of atoms, it will also be used for treatment of some deep cancers and research into cancer.

Insofar as treatments are concerned, the new Van de Graaff generator supplements two 2,000,000-volt generators which already have been used on about 300 cancer patients. It is too early, Dr. Hugh F. Hare, chief radiologist of the Lahey Clinic, said, to evaluate the results although 157 seem to be well after about 20 months.

Each generator shoots twice the amount of X-rays as would be produced by the world's entire supply of radium into the cancer tumors. A rotating chair holds the patient. The tumor is at the central point. The rest of the patient's body tissues receive only small amounts of radiation.

Within six months to a year, one of these 2,000,000-volt machines may be used to give a victim of leukemia, cancer of the blood, radiation over the entire body. The patient is himself a doctor. It first has to be discovered, through experiments with dogs, whether the healthy parts of the body can take this radiation. Also, the patient has not yet quite made up his mind to undergo the treatment.

Science News Letter, April 5, 1952

PSYCHOLOGY

Shock Reduces Tendency To See Things in New Way

► TREATMENT WITH electro-shock therapy reduces the tendency of a person to see things in a fresh way, members of the Eastern Psychological Association learned at a meeting in Atlantic City.

A group of patients at Payne Whitney Clinic, New York City, were asked to look at drawings used by psychologists to test perception. The figures are ambiguous; that is, they may appear one way or another and normal individuals looking at them will find that they suddenly shift from one appearance to another and back again. The rate of shift was measured for the patients and also for a group of normal students.

Then some of the patients were given electro-shock therapy. The reversal rate for treated patients dropped. For normal individuals, the rate increased with practice. For the patients who were not given shock, the rate remained the same.

The experiment was reported by Dr. V. R. Fisichelli, of Hunter College and F. V. Rockwell and Lenore Clarke of the Payne Whitney Clinic.

Science News Letter, April 5, 1952