

MEDICINE

Venereal Disease Rise Seen in British Teenagers

► BRITAIN, like the United States, is disturbed over the increase of venereal disease in its teenagers.

Of 464 prostitutes examined in prison, 36% were teenagers. Of the 145 teenage prostitutes examined, 48.9% had gonorrhea. Previously the British Cooperative Group found the increase in gonorrhea during a one-year period among the 18-to-19-year age group was 27% in females and 36.3% in males.

Dr. C. S. Nicol of St. Thomas' and St. Bartholomew's Hospital, London, reports in the British Medical Journal, Feb. 18, 1961, that about 20% of the strains of gonococci have become partly resistant to penicillin. A higher penicillin dosage or another antibiotic was advised in such cases.

Gonorrhea is easy to cure, Dr. Nicol states, and on this account many patients run repeated risks. In seven large clinics 7,531 cases were found among 5,757 patients in one year, confirming that repeated infection is fairly common.

"The control of venereal diseases," Dr. Nicol says, "must depend on the tracing of infecting and infected contacts."

In Britain a voluntary system is followed with contact slips handed to all infected patients. Best results are obtained, Dr. Nicol believes, when a highly trained social worker assists. Also, he advises that a welfare officer be sent to visit those who start treatments but do not continue them.

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AERONAUTICS

NASA Space Institute To Open in New York

► THE FIRST INSTITUTE for space studies will begin formal operation in New York City this May, the National Aeronautics and Space Administration has announced.

The new facility, designated the Goddard Institute for Space Studies, will serve as an arm of the theoretical division of the Goddard Space Flight Center located at Greenbelt, Md. It will be headed by Dr. Robert Jastrow, who also will maintain his present position as chief of the theoretical division at Greenbelt.

"We expect to profit in our theoretical research program by drawing on the great pool of talent that is collected within the universities and research centers of the area," Dr. Jastrow said.

Those who will be enrolled in the institute will be selected from graduate students working toward a doctorate degree in physics, astronomy or the earth sciences from such schools as New York University, Columbia, Princeton, Yale and the Institute for Advanced Studies at Princeton.

The staff will be made up of NASA scientists working in close association with members of the faculties of participating universities and research institutions, Dr. Jastrow said.

The program will include basic theoretical research in all fields having a bearing on the NASA space science, such as studies on the structure of the earth, the moon and other planetary bodies in the solar system; the atmospheres of the earth and other planets; the origin and evolution of the solar system; the properties of the interplanetary plasma; sun-earth relationships; celestial mechanics; and the structure and evolution of the stars.

A mathematical computer will be the only tool, other than their own mental creative ability and proficiency in their chosen field of study, available to the students and research staff of the new space institute, Dr. Jastrow said.

The computer will be used to check the validity of the theories in the various disciplines that may be advanced by the 50 members that will include the institute's student body and the supervising staff.

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MATHEMATICS

U. S. Scientists Receive Russian Math Data

► UNITED STATES scientists are five months ahead in receiving the latest Soviet mathematical information used in designing missiles and space vehicles as the result of a new compilation of Russian mathematical research just issued.

The joint project is the first of its kind. The cooperative effort of mathematicians in the U.S. and Russia was edited by Dr. J. R. M. Radok of the Polytechnic Institute of Brooklyn. The volume honors the 70th birthday of one of Russia's most prominent mathematicians, Dr. N. I. Muskhelishvili.

Of the 50 mathematical research reports contained in the compilation, 28 are from Russians and seven from the U.S. Other nations represented are Great Britain, Holland, India, Italy, Poland, Scotland and Sweden. There are three from Mainland China.

The project was initiated by the Academy of Sciences of the USSR and the English edition was sponsored in this country by the Society for Industrial and Applied Mathematics.

The pilot project shows that the Russians can cooperate, Dr. Radok said. One report, by the Russian Academician G. N. Savin, deals with the mathematical treatment of the problems of holes in shells. This has practical application to the design of missiles, submarines and missile-carrying Polaris submarine.

Dr. G. I. Taylor of the Cavendish Institute, Cambridge, England, reported on interfaces in coarse media, which applies to oil exploration.

Dr. Muskhelishvili, who won Stalin prizes in 1941 and 1946, is a deputy in the Supreme Soviet, and a poet as well. He is best known for his work in potential theory. This is applicable to such practical problems as the torsion and bending of steel beams, the behavior of elastic materials and other questions relating to mechanics.

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IN SCIEN

MEDICINE

Health Teams Serve Chronically Ill at Home

► HEALTH TEAMS consisting of a doctor, a public health nurse and a social worker are bringing home-care programs to chronically ill patients who tend to lose hope in hospitals.

More than 2,000,000 persons in the United States make use of some kind of nursing service in hospitals, nursing homes, at work, at home or in a public health center.

In the last ten years, Elizabeth Ogg reported in the Public Affairs pamphlet, *Your Nursing Services Today and Tomorrow*, about 50 hospitals and a few public health and welfare departments and visiting nurse associations have set up Organized Home Care (OHC) programs.

"A nutritionist, a physical or an occupational therapist sometimes joins the health team," Miss Ogg said. "Library, volunteer and homemaker services, meals-on-wheels and other community resources may be brought in to help you if you are disabled and homebound."

The pamphlet was written in cooperation with the National League for Nursing, an organization including non-nursing members in communities.

The league has come up with a patient's bill of rights concerning what can be expected of modern nursing service. The rights include that the patient receive the nursing care necessary to help him regain his maximum degree of health and that the nursing personnel who care for him are qualified, through education, experience, and personality, to carry out services for which they are responsible.

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SEISMOLOGY

Estimates Movement in San Andreas Fault

► HORIZONTAL MOVEMENT along the San Andreas fault north of San Francisco has probably not exceeded one and one-half miles during the last three-six million years, Dr. Charles G. Higgins of the University of California in Davis, Calif., reported in the *Geological Society of America Bulletin* 72:51, 1961. The movement of the San Andreas fault is responsible for many of the devastating California earthquakes.

Previous higher estimates of movement since middle Pliocene time were based on studies along the fault scar south of San Francisco, which does not necessarily hold true for areas north of the city, Dr. Higgins reported.

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CE FIELDS

PUBLIC HEALTH

Many Lose Life Savings To Pay Medical Bills

► THE TRAGEDY of the self-respecting man who has to sell his home and use his lifetime savings because he gets cancer at 65 was pointed up by Secretary Abraham Ribicoff of the Department of Health, Education, and Welfare at his first news conference in Washington, D. C.

Charges that social security measures are unnecessary to insure medical care to a great many persons over 65 were refuted by Secretary Ribicoff. He said he knew of no study that could prove how many aging persons could take care of their own health needs.

"The vice president of an insurance company who is a friend of mine," he said, "was opposed to social security plans for medical care to the aging until his father-in-law became ill with cancer."

When the patient's savings were all used up after a year's illness, the insurance man had to shoulder all the expenses of hospitalization and changed his opinions. It is this kind of unpredictable expense that studies do not predict, the Secretary indicated.

Asked whether the Administration's plan for the medical care of our aging population would slow down insurance plans, the Secretary said he believed it would give impetus to private companies.

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BIOLOGY

Nature-Nurture Conflict Again Divides Scientists

► THE CONTROVERSY of whether environment or heredity—nurture or nature—has the most influence on intelligence has flared up again in scientific circles.

The present debate centers around a report by Hilda Knobloch and Benjamin Pasamanick of Ohio State University, Columbus. They found that of 1,000 Baltimore infants, only 1.8% had developmental quotients below 85. Developmental quotients are supposedly the infant equivalent of the I.Q. test used in later life.

Among school-age children, however, 14% had I.Q.'s below 85. The fact that most of the reduced scores occurred in the Negro and lower-class white portions of the population indicated, the Ohio researchers suggested, that environment played the bigger role.

In *Science*, 133:378, 1961, however, Dr. Gordon Allen of the National Institute of Mental Health, Bethesda, Md., questioned whether developmental quotient and intelligence quotient are equivalent measures of the same thing. He also pointed out that the Ohio researchers gave no evidence

concerning the nature of the environmental factors that they believe to be the main determinants of intelligence.

In the same issue, the Ohio investigators stick to their guns and return the charge of "ambiguity" by stating that the geneticists themselves will need to give more than "post hoc data" to support their views.

Although Dr. Allen suggests that a meeting ground between the two camps may be found in studies of inherited metabolic diseases that result in brain damage and lowered I.Q. when certain foods are included in the diet, the behavioral scientists are cool to the idea.

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MEDICINE

Cancers React Differently To Same Radiation Dose

► THE APPEARANCE of a tumor is not a reliable guide to how much radiation is needed to kill it.

Dr. Anna Goldfeder of the cancer and radiobiological research laboratory at New York University has found that mammary tumors that look very much alike often react very differently to the same radiation dose. Cells from such tumors, irradiated and transplanted to test tubes, have shown considerable differences in their abnormal structure patterns.

Dr. Goldfeder also reported at a New York Academy of Sciences conference in New York that normal body tissues from the same person may vary in their responses to radiation.

In healthy, embryonic kidney fragments irradiated and grown in cultures, the white blood cells and certain cells that act as garbage collectors were killed by the same radiation dose that allowed kidney skin cells to go on growing.

The reason that some tissues resist radiation while others succumb, Dr. Goldfeder believes, lies in the quality and quantity of mitochondria, the organelles that appear as granules, rods or filaments in all cells.

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METEOROLOGY

Trees Cut Wind Flow Up to 40 Percent

► HOW MUCH trees that shed their leaves in the fall actually protect from the wind because of their leaves has been measured. Wind flow increases up to 40% near deciduous trees such as oaks, elms and maples after the leaves have fallen.

Ralph H. Frederick of the U. S. Weather Bureau office of climatology in Washington, D. C., reports in *Monthly Weather Review*, 89:39, 1961, that observations of wind flow showed that the wind decreases as leaves grow back on the trees in the spring.

He states the wind flow varies with the number of trees, with tree height and the distance between trees. He suggests that a mathematical formula might be worked out that will show the shielding effect on wind movement due to leaves.

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GENERAL SCIENCE

Japanese Know Science Facts, But Deny Interest

► ONLY ONE out of five Japanese in a public opinion poll admitted that they were interested in science and technology. Nevertheless 71% of those polled knew that the mosquito transmits Japanese encephalitis and 53% knew that the orange contains more vitamin C than apple and spinach.

The general survey of the level of scientific knowledge in Japan carried out last June by the Science and Technics Agency also showed that 84% of the people interviewed knew about the transistor and 42% knew about Salk vaccine for polio. The launching of satellites by the United States and the USSR was known to 83% and 49% admitted to being able to replace a fuse.

Chlorella, the algae proposed for use as food, were known to 15% queried, and the diode, an electronic device, was known to 10%. In spite of these results only 21% of the persons admitted to paying attention to science and technology and only 18% declared that they read science news every day. About 80% expressed no interest at all in science and technology.

The survey included 3,000 adults in 40 cities and 78 villages.

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METEOROLOGY

Many Weather Questions Are Still Unanswered

► MANY QUESTIONS about the atmospheric behavior must be answered before the weather, such as the battering series of snowstorms that hit the eastern United States in February, can be adequately controlled, the U. S. Weather Bureau reported in Washington, D. C.

The most promising method for controlling the weather is to squelch the storm in its early stages. Whirling weather satellites scanning the weather patterns would provide a much better observational system than meteorologists now have for detecting storms.

The first two experimental weather satellites, Tiros I and II, have already been useful in spotting cloud patterns associated with storms when they form.

The Weather Bureau has also been conducting basic atmospheric research during the past five years in its laboratories. High-speed electronic computers are working constantly, imitating the functions of the atmosphere.

Weather men are dealing with tremendous energies when they tackle storms, Dr. F. W. Reichelderfer, chief of the Weather Bureau, said. In one year, winds carry energy equivalent to about two billion atom bombs across the 40-degree latitude.

One of the storms that hit New York City dumped about 40,000,000 tons of snow. If the snow could have been melted to rain by applying heat, it would have required the heat equivalent of 120 atom bombs.

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