

GENERAL SCIENCE

Cite Work on Mental Illness and Cancer

► **WORK THAT HELPED** to revolutionize the care and treatment of mental illness has won for Dr. Nathan S. Kline, director of research, Rockland State Hospital, Orangeburg, N. Y., the \$10,000 1964 Albert Lasker Clinical Research Award.

Two California physicians will share the \$10,000 1964 Albert Lasker Basic Medical Research Award for significant contributions to knowledge of the relationships between viruses and cancer. They are Drs. Renato Dulbecco, resident fellow, The Salk Institute of Biological Studies, San Diego, Calif., and Harry Rubin, professor of virology, University of California at Berkeley.

Dr. Kline's award was for his discovery of the usefulness of drugs called the monamine oxidase inhibitors in the treatment of severe depressions. After experiments at Rockland State Hospital with iproniazid, which was first reported in the treatment of tuberculosis, Dr. Kline and his associates confirmed the drug's euphoric effect on the severely depressed.

Dr. Kline's work opened up the era of anti-depressant drugs. Their use, by private physicians, psychiatrists and mental hospitals, has enabled hundreds of thousands of persons to return to normal life. More than four million persons a year in the United States alone are now treated with anti-depressant drugs.

The work of Drs. Rubin and Dulbecco for which they were honored proved that for many generations cells can carry a foreign nucleic acid, whether ribonucleic acid (RNA), or deoxyribonucleic acid (DNA), that is responsible for its malignant properties.

Their outstanding work promises to contribute decisively to the eventual understanding of the nature of cancer, and to speed the day when research will eradicate this most dreaded of all diseases, their citations said.

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MEDICINE

Some Clots Disappear Of Their Own Accord

► **WHILE SOME BLOOD CLOTS** that block an artery lead to death, others may go away of their own accord.

Duke University researchers are trying to understand why holes appear in these disappearing clots and normal circulation is restored.

This unexplained occurrence could hold the secret for new methods of treating victims of heart attacks, strokes and other vascular diseases.

"If we can find the answers to the phenomenon of 'spontaneous' venous clot alteration," said Dr. William G. Anlyan, dean of Duke's School of Medicine, "it may lead to new anticoagulants, substances that dissolve clots or prevent them from forming, and new ways to open up clogged vessels."

Since suitable materials for artificial arteries were developed several years ago, Duke researchers now hope to find mate-

rials for artificial veins that can have valves built into them.

Valves can become defective from infection, accidental injury or even from the increased pressure that may occur during pregnancy, the researchers said. This can lead to an abnormal collection of fluid in the feet and legs.

They estimated that a half million persons in the United States suffer from chronic vein diseases.

Another curious phenomenon about heart attacks will also be studied at Duke. In animal experiments, the death rate can be reduced dramatically—70 to 50%—if the researchers tie off the part of the venous system which corresponds to a blocked artery. An investigation is being conducted for application to humans.

The research is part of a project on surgery and blood vessel disorders made possible by a \$334,205 grant from the National Institutes of Health, Bethesda, Md.

Assisting Dr. Anlyan are Dr. Donald Silver, one of the principal investigators, along with Drs. Frank Bassett, Donald McCollum and Delford L. Stickel.

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DENTISTRY

Enzyme Chewing Gum Made for Astronauts

► **ASTRONAUTS** cannot brush their teeth after meals, but a new sugarless enzyme chewing gum has been developed for their use to prevent staining of teeth and the formation of tartar, which often leads to enamel breakdown and tooth decay. The gum, called Trident, represents 20 years of research.

Research to evaluate the effectiveness of various enzyme combinations was conducted by LaWall and Harrison Research Laboratories, Philadelphia, under a grant from the American Chicle Company, a division of the Warner-Lambert Pharmaceutical Company.

In previous studies using enzymes in toothpaste, mouthwash and lozenges, it was found that prolonged contact with tooth surfaces was most efficient in combating tartar. This led the dental scientists to switch their emphasis to chewing gum, in which the enzymes could be released uniformly for a protracted period.

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ARCHAEOLOGY

History of Apes To Be Traced

► **DETERMINING** when the first ape ancestor arose from the more primitive primates is a primary goal of an expedition heading for Egypt.

The expedition, which is from Yale's Peabody Museum of Natural History, will be stationed about 60 miles south of Cairo in an area called the Fayum Depression. There scientists hope to learn whether or not monkeys or apes lived in Egypt during the Miocene period 13 to 24 million years ago.

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IN SCIENCE

SURGERY

Hair Transplants Used In Correcting Baldness

► **BALDNESS** might not be one of man's big worries in the future.

Transplants of many small sections of hairy scalp have been used successfully to make hair grow in 53 patients who suffered from baldness, reported Dr. Samuel Ayres III, University of Southern California School of Medicine, Los Angeles.

The technique is at times dramatically effective in correcting male pattern baldness, he said. This type of baldness is a receding front hair line that develops into a bald spot on top of the head bordered on the sides and back by hair.

Dr. Ayres said some skin grafts he used had only two or three hair follicles, although the average graft had 10 to 15 hairs. The total number of grafts required for covering of bald areas may range from only 20 to over 500, he said.

However, several months must go by before definite cosmetic results can be seen, he said.

Common thinning of the hair in women is not remedied by this treatment, but modified male pattern baldness that occurs in some women can be. Other conditions such as bald spots due to burns and cuts can be handled by transplantation, Dr. Ayres stated.

Dr. Ayres reported the transplants in the Archives of Dermatology, 90:492, 1964.

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EDUCATION

Nation Suffers Lack in Knowledge of Economics

► **EXPERTS AGREE** that economics education in the United States is in deplorable condition and needs improvement.

Americans lack knowledge about advancements in agriculture, the chemical industry and other manufacturing processes, said Dr. Arthur F. Burns, president of the National Bureau of Economic Research, Washington, D.C.

In U.S. high schools, only 20% of the graduates now complete a regular course in economics, a survey by the Joint Council on Economic Education indicated. A large part of this deficiency is due to the small number of qualified economics teachers.

For instance, in the case of one city which planned to use 300 persons to teach economics, only 17 with sufficient training could be found.

To promote better understanding of economics by both students and the general public an educational film "Productivity: Key to America's Economic Growth," has been produced with a grant from the Alfred P. Sloan Foundation.

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CE FIELDS

SEISMOLOGY

Fault's Movement Causes Winery Damage

► THE EARTH, creeping at the rate of half an inch each year along the San Andreas fault in Hollister, Calif., has already broken down two winery buildings and is slowly twisting a third.

Concrete walls one-foot thick are buckling and floors are being cracked in a winery building sitting astride the major fault. The San Andreas fault is a large break in the earth's crust, running roughly parallel to the Pacific Ocean from north of San Francisco to Mexico. The oceanic, westerly side of the fault is moving slowly north.

Elaborate recording devices have been set up in the building to study the earth movements. It is the only place in the world where creeping earth on a large fault is being closely measured.

When the first and then the second winery at this same location in the Cienega Valley were demolished, winery operators were mystified. It was not until 1956 that the fault was found to be the cause.

For the past eight years seismologists from the University of California seismographic station have been recording movements of the earth and the fault in the winery building. The U.S. Coast and Geodetic Survey has established a network of sensitive instruments along the fault.

The fault is not creeping at a constant rate, seismologists observed. Rapid movements may last for a few days, or they may take as long as two weeks. The average movement takes about a week, but intervals between movements may be weeks or months. Each movement takes place down a definite line, and each shift amounts to a fraction of an inch. When the earth is creeping, there is no jerk and the motion is very smooth.

No one at the winery has ever felt the earth creeping, reported Peter Becker, master vintner and winery superintendent at Almaden Vineyards. But the overall movements have caused extensive damage to buildings and vats.

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PSYCHIATRY

Human Vampires Are Not Simply Horror Myths

► THERE ARE SUCH THINGS as human vampires—these real vampires are mentally maladjusted living humans, not members of the "undead" who get out of their coffins at night to prey upon innocent victims. They are rarely discussed in scientific literature, although there are reports of "Dracula's disciples" having craved or drawn blood from others.

Vampire-like behavior and fantasies are more common and important than their

relative absence in literature would suggest, report Drs. Richard L. Vanden Bergh and John F. Kelly, both of Denver, in the Archives of General Psychiatry, 11:543, 1964. However, cases of pure vampirism are rare.

Drs. Vanden Bergh and Kelly define vampirism as the act of drawing blood from an object and thus gaining sexual excitement and pleasure. Usually a love object is involved.

The researchers related as an example the case of a 20-year-old prison inmate who would trade homosexual favors with other men for the opportunity of sucking their blood. They also told of a patient who had cut himself repeatedly to drink his own blood while fantasizing that he was puncturing the neck vessels of another person.

Previous reports on vampirism have stated that the dynamic basis for such perverse behavior is oral sadism, or the need to inflict pain by chewing or biting. Although many cases support this view, the scientists believe that other bases, such as fear of castration and aggressive hostile wishes, are also important in explaining vampirism.

The scientists said that the myths and legends of vampires are not products of one culture but have their roots in a number of past civilizations. These legends can be traced as far back as Greek and Roman mythology and were developed in Europe, Asia and parts of Africa.

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GENERAL SCIENCE

Award for Research To Women in Science

► AN AWARD of \$500 for research or course work is offered to women scientists by Sigma Delta Epsilon, a graduate women's scientific fraternity.

Any scientifically minded woman, preferably over 35 years old, is eligible if she holds a degree from a recognized institution of higher learning and has demonstrated outstanding ability and promise in research in one of the mathematical, physical or biological sciences.

Applications, obtained from Dr. Lura Morse, University of Minnesota, should be submitted before Feb. 1, 1965.

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TECHNOLOGY

While Talking, Dial Another Number

► AN ELECTRONIC TELEPHONE switching system that lets you dial a third party while you are talking on the phone is being built.

The system, called No. 1 Electronic Switching System—ESS—can also signal a customer who is using his phone to tell him that another call is trying to get through. In addition, it will make possible such services as abbreviated dialing, dial conferences and transfer of incoming calls to alternate telephones.

The new No. 1 ESS, built by Bell Telephone Laboratories engineers, will be introduced early next year in Succasunna, N.J.

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MEDICINE

Safe X-Ray Substitute Shows Placenta Location

► A CAMERA-LIKE instrument called a thermograph is a safe substitute for the potentially harmful radiation of X-rays in locating the position of the placenta during pregnancy.

The placenta is the organ within the mother's womb to which the unborn baby's umbilical cord is attached.

Its position must be known for tests and when treating complications of pregnancy such as bleeding.

Two researchers at the Albert Einstein Medical Center in Philadelphia, working with 142 women, have reported 89% accuracy with thermography, sometimes called "heat photography."

The placenta is believed to be warmer than surrounding tissues and organs, they said, and its site is indicated by a "hot spot" that records on the thermogram as a white area.

The patient lies on an examining table while the body's invisible infrared radiation is reflected by a mirror over the table into the thermographic "camera." Here it is transformed into electrical energy and then into visible light.

The light is focused on a Polaroid film that produces a permanent black and white photographic image, the whole process taking as little as four minutes. There is no danger of any kind either to the fetus or the mother.

Drs. Jacob Gershon-Cohen and JoAnn D. Haberman-Brueschke reorted their findings in the Journal of the Albert Einstein Medical Center, 12:248, 1964.

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ENGINEERING

Engineering Academy in Operation Before 1965

► THE PROPOSED National Academy of Engineering should be in operation before the end of the year, Dr. Eric A. Walker, chairman of the National Science Board, disclosed.

The board is the governing body of the National Science Foundation.

The new academy, a counterpart of the National Academy of Sciences, will probably start with 25 members from the engineering profession, said Dr. Walker, who is also president of Pennsylvania State University.

It will use the Federal charter of the existing National Academy of Sciences, as suggested by the NAS president, Dr. Frederick Seitz.

The NAS charter, which will incorporate a separate constitution and bylaws for the new academy, provides "everything we could expect under a national charter," Dr. Walker told engineers at a meeting of the Association of State Universities and Land Grant Colleges in Washington, D. C.

Initial support for the new academy came from the Engineers Joint Council and the National Academy of Sciences some five years ago.

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