

EDUCATION

Venereal Disease Books Available in Schools

► WITH BETWEEN 200,000 and 300,000 teen-agers contracting venereal diseases each year, many schools and parents will welcome the news that two new educational books are now available for use by teachers and secondary school students.

SCIENCE SERVICE asked Dr. Edward Mileff, consultant in health education for the American Association for Health, Physical Education and Recreation, publisher of the books, how they might be introduced into schools.

"It is certain that the books will not be a compulsory part of the curriculum," Dr. Mileff said. "They could be used in courses in biology or health education, with the instructor emphasizing the fact that venereal diseases differ from other infections only in the method of transmission."

No one, for example, objects to telling a student that he can get malaria from being bitten by a type of mosquito, but parents often shy away from mentioning the terrible infections that can be transmitted through human intimacy.

Dr. Mileff said it was possible that PTAs, medical societies, civic clubs and other groups, as well as school physicians and nurses would study the books and help create a community awareness of the need for teaching such subjects in the schools.

It will be comparatively simple to place the books in school libraries where students can voluntarily read them or work on assignments in which the subjects can be better understood.

The American Association for Health, Physical Education and Recreation is a department of the National Education Association. The books were written by William F. Schwartz, educational consultant for the venereal disease branch, Communicable Disease Center, Public Health Service.

The student text is titled Facts About Syphilis and Gonorrhea and costs \$1.00. The instructor's book, Teacher's Handbook on Venereal Disease Education, sells for \$2.00. Both are paperback.

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GENERAL SCIENCE

Independent Inventors Provided With New Lab

► INVENTORS in Philadelphia no longer need to park the car in the street and work in the garage.

They have the use of a new type of non-profit laboratory established by private industry with the aid of the Economic Development Administration.

The laboratory provides independent inventors with space, modern equipment, including computers and electron microscopes, and technical advice at cost. Its purpose is to stimulate industrial research, resulting hopefully in more jobs for southeastern Pennsylvania.

These private inventors, however, have one important advantage over those actually working for industry: they retain the rights

to all their inventions. Rights to almost everything invented by company inventors are automatically owned by the companies.

Inventors who want to work at the laboratory are screened by a technical panel of university and industrial researchers. If accepted, they become "research associates" of the laboratory.

So far the venture has been very successful, both in number of applicants and new products, the EDA told SCIENCE SERVICE. Conceivably such laboratories will be established in other parts of the United States.

Initiative, however, must come from local sources. The site and the building were provided by private industry, the South-eastern Pennsylvania Economic Development Corp. and the West Philadelphia Corp. Federal aid consisted solely of a technical staff.

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PUBLIC HEALTH

Cold Symptoms May Be Caused by Chemical Dust

► INDUSTRIAL WORKERS handling certain materials may think they have a cold, when in fact they may have been breathing newly developed kinds of resinous compounds that can cause severe respiratory problems.

Dr. John Rankin, professor of medicine at the University of Wisconsin Medical School, and Dr. Louis W. Chosy, instructor of medicine at the school, have for the past three years been studying cases from various Wisconsin industries of persons who became ill after contact with the new compounds.

The resinous compounds have been developed by adding different chemical ingredients to a basic polymer molecule under varying conditions. When first used, they are very reactive, but after they dry they no longer are reactive and cause no trouble.

The substances are suited for many industrial uses, such as in adhesives which can encase electrical circuits or bind metal to metal, to cite just one example. Drs. Rankin and Chosy found that those working with the compounds can develop congestion of the nose or throat and burning eyes, and the effects may become more severe. In most of the cases they studied, the afflicted person's trouble was originally diagnosed as asthma, sinus trouble, pneumonia or chronic bronchitis, any of which can be side effects of prolonged exposure to the compounds.

The doctors also found that if exposure is continued, the affliction may become more severe, and can result in sinus inflammation, ear infections and bronchial pneumonia.

According to the doctors, the best treatment for respiratory ailments caused by such exposure is to stay away from the compounds. This, of course, can cause problems for persons who must be in contact with them on their jobs, but complete recovery may require a long absence from exposure. The doctors added that reexposure after recovery can start the affliction again.

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IN SCIEN

GENERAL SCIENCE

Canadians Use Telephone More Than Other People

► CANADIANS made more phone calls per person in 1964 than any other people in the world. The United States ran a mere third, and the Virgin Islands ranked second.

The vast American Telephone and Telegraph Co. published the 1965 summary of The World's Telephones, revealing that the average Canadian citizen made 622.8 phone calls in 1964, compared to 591.0 in the U.S.

There were only 7,405 phones in the Virgin Islands that year, compared to 88,785,000 in the United States, but the Islanders each made an average of 620.4 calls.

Government-owned telephones, of which there were 71,000 in the United States, were completely nonexistent in the Virgin Islands. The opposite extreme existed in South Viet Nam, where all 20,140 phones were listed in the Government's name.

This statistic is not as dramatic as it might seem, however. It simply means that in South Viet Nam the phone bills are sent to the Government instead of to a private corporation. The same system exists in England, where there are almost 500 times as many telephones.

Callers in the United States can now reach 97% of the telephones in the world. Of the 176,300,000 telephones reachable from the United States, slightly more than half are in this country.

Mainland China is listed as having 244,028 telephones, but the last data from there reached the United States in 1948. The following year the phone system was nationalized. Taiwan, from which reports are up to date, had 147,825 phones in 1964.

Japan has the second largest number of phones of any country in the world, with 12,250,841. This is an increase of 332% in the last decade.

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EDUCATION

Parent Hits Law Limiting Right to Learn Evolution

► A FATHER with two sons aged 15 and 17 in Arkansas schools has joined Arkansas' evolution law battle.

Hubert H. Blanchard of Little Rock has filed with his attorney a statement in which he adopts the allegations of biology teacher, Mrs. Susan Epperson, claiming that the 37-year-old anti-evolution law is unconstitutional because it denies his children the right to learn certain important scientific data.

Mr. Blanchard maintains that freedom of speech includes not only the right to teach but also the right to learn and to have access to all available scientific knowledge.

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CE FIELDS

GEOPHYSICS

Earth's Radius Measured To Most Accurate Figure

► EARTH'S RADIUS has now been measured from satellite observations to the most accurate figure yet obtained—3,963.203 miles. This value is within five-thousandths of a mile one way or another of the actual one.

Dr. George Veis of the Smithsonian Astrophysical Observatory in Cambridge, Mass., and the National Technical University, Athens, based his new determination of earth's radius on an analysis of more than 46,500 observations of 13 different satellites.

His analysis gave very precise positions of the 12 stations from which the satellite photographs were taken. From these positions, Dr. Veis then obtained the value of 6,378.169 kilometers, plus or minus eight-thousandths of a kilometer, for earth's mean radius.

This value is the semimajor axis of the ellipsoid that best fits the geoid, which is the figure coincident with the earth's surface at mean ocean level. Details were published in the Proceedings of the Fifth International Space Science Symposium.

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GENERAL SCIENCE

Monkeys Shipped by Air From India Well Treated

► MONKEYS are literally handled with gloves during shipment by air, which has become a regular international commercial enterprise with scheduled flights by jet cargo planes. They get even more attention than most people.

The great demand for the Rhesus monkey, *Macaca mulatta*, has led to international regulations insuring them humane treatment.

India is the major source of monkeys, and the Government there has placed strict controls on methods of transportation. Dr. L. E. Callum of the Animal Resource Center, Arizona State University, Tempe, told the 16th annual meeting of the Animal Care Panel in Philadelphia.

Shipment by air from India requires from 18 to 36 hours, depending upon the origin and destination points.

Some of the Indian Government's regulations include: adequate ventilation without drafts and the maintenance of an even temperature, between 65 degrees and 75 degrees F.; food tray should be filled twice in 24 hours, usually with grain soaked in water; water suitable for human consumption must be provided not less than once in every 12 hours; contaminated food and water should not be left in cages; in no case should monkeys be in transit more than 24 hours without an undisturbed rest period of at least six hours. Airline staff

required to handle monkey cages are provided with special gloves for this purpose.

Monkeys under six months of age should not be exported, and in the case of a Rhesus monkey, this may be taken as one under four pounds in weight or with less than a full set of 10 milk teeth in each jaw. Pregnant monkeys should be individually caged if they are transported, as they frequently have natural abortions on a trip, probably as a result of stress and environmental changes.

Respiratory infections and inflammation of the intestinal track during the first 40 days after shipping can affect as many as 50% of the monkeys, although the death rate within the first 24 hours after arrival at the destination is very low, seldom exceeding more than one percent of monkeys in the four- to eight-pound group, and three percent for larger animals.

Before monkeys can be exported from India, a certificate of need must be issued by the department of health of the importing country. The certificate must accompany the order and confirm that the animals are required for research, or for the production of a vaccine, or by an accredited zoo.

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GENERAL SCIENCE

Scientists Build Facts Into Great Structures

► THE "TWO WORLDS" controversy over conflict between the humanities and science stirs the platforms, books and journals of the nation, with the humanists usually much more concerned than the scientists.

Nonscientists have trouble understanding the scientific method and attitude. It may be that to appreciate the effective technique of the scientist, one must have learned what it is by long practice.

One great U.S. scientist is Dr. Joel H. Hildebrand, emeritus professor of chemistry of the University of California, Berkeley, who is still doing research at the age of 83, under U.S. Government grants and in laboratories provided at his university.

Not too long ago he analyzed the differences of the two cultures in these words, which are well worth quoting:

"There are scholars who looking at the scientific enterprise from the outside, see the huge and ever growing body of factual knowledge only as a collection of fragments, and they cry for integration and synthesis.

"If they would come inside, if only for a sojourn, they might see that we insiders are busily engaged in the very activity that they exhort us to undertake; we are building fragments of information into structures of great beauty, comparable as achievements of the human mind and spirit with the greatest works of art and literature. These structures are a major part of humanism.

"To define science as technology, or as 'classified information,' as in a certain dictionary, is as misleading as it would be to characterize the Parthenon as calcium carbonate."

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MEDICINE

Mongolian Gerbil Aids Circulatory Disease Study

► A NEW ANIMAL ALLY has joined the fight against heart, blood vessel and kidney disease.

It is the Mongolian gerbil, a creature about half the size of a rat, gray-brown in color, with a long, furry tail and large, dark eyes.

Despite a fat-rich diet and prolonged cholesterol levels, the gerbil has shown no tendency toward atherosclerosis in studies at the University of California at Los Angeles.

This clogging of arteries with fats is implicated in heart disease, high blood pressure and other circulatory ailments. The gerbil appears to have unusual metabolic pathways for handling fats, a lesson from which man may profit.

The animal does not drink but manufactures its own water. It also produces special hormones facilitating kidney function, not found in common laboratory animals. These unique abilities may have applications to space travel, where water economics is a problem, and to kidney disease.

The gerbil is also susceptible to virus and parasitic diseases common to man, which would make it a useful tool and fairly important in research which is concerned with such infections.

Until recently the creature's use was restricted, particularly in California. There was some fear it might become an agricultural pest due to its burrowing habits. Dr. Sigmund Rich, director of the research animal facility at UCLA's Center for Health Science, was instrumental in obtaining changes in California's administrative code which now permits licensed research institutions to obtain gerbils.

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OCEANOGRAPHY

Ocean Depths Probed By New Institute

► THE MYSTERIES of "inner space," the world's oceans, will be intensely probed by a new Institute for Oceanography, part of the Environmental Science Services Administration (ESSA).

Undersea mountains and valleys, temperatures, ocean waves and currents, and interactions between the ocean, earth and atmosphere will be studied in comprehensive programs designed to gain new knowledge of the ocean.

Headed by Dr. Harris B. Stewart Jr., formerly chief oceanographer of the Coast and Geodetic Survey, the new Institute has headquarters in Washington, D.C., and field installations at Norfolk, Va., Seattle, Wash., and Honolulu, Hawaii.

In addition to its own research projects, the Institute will encourage and support cooperative research programs carried out jointly with universities and private institutions.

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