

## SPACE

## U.S. Moon Flight Center To Be Built at Houston

► A GREAT new center charged with getting man on the moon will rise at Houston, Texas, costing \$60,000,000.

The manned space flight laboratory will be used to design, develop, evaluate and test the craft for Project Apollo, train the crew that will fly the Apollo missions, and control the lunar mission.

There will be a flight project facility, an equipment evaluation laboratory, a flight operations facility and an environmental testing laboratory.

Missiles fabricated at the Michoud Plant near the mouth of the Mississippi River at New Orleans and spacecraft tested at the new Houston center can be shipped by deep water transportation to the proposed expanded Atlantic Missile Range at Cape Canaveral, Fla., from which the spacecrafts will be launched.

• Science News Letter, 80:352 November 25, 1961

## TECHNOLOGY

## Future Clothing May Be Made of Steel

► GARMENTS made of steel may be standard items in clothing stores of the future, a scientist has predicted.

This does not mean that everyone will be wearing armor plate. Dr. Henry E. Millson, American Cyanamid Company textile chemist, said soft, drapable fabrics may be woven from stainless steel wire so fine-drawn that it is only one-half the thickness of a human hair.

Dr. Millson also envisions aluminum-coated summer clothing to keep the wearer cool, and winter clothing with inner linings that can be removed to collect solar energy for warmth.

He added that knitted and woven paper garments, treated with resins and finishes so they can be washed and dry cleaned, may be "the answer to the clothing problem in low-income countries."

Resin-treated paper can be knitted, and already is being used to make hats for women.

• Science News Letter, 80:352 November 25, 1961

## PUBLIC HEALTH

## Blankets Not Guilty Of Spreading Staph

► FLUFF FROM WOOLEN blankets is not the major culprit responsible for spreading bacterial infections throughout an entire hospital, the Australian Commonwealth Scientific and Industrial Research Organization concludes.

Studies conducted by T. A. Pressley of CSIRO revealed that in Melbourne hospitals, at least, wool fibers comprise only ten percent of the fibers floating around rooms and corridors. The rest are cotton and other forms of cellulose.

This is not so surprising, Mr. Pressley states, because wool fibers are roughly cylindrical and probably do not float well.

But cotton and other cellulose fibers are ribbon-shaped and should ride air streams relatively well.

In any case, the bacteria travel around very well without hitch-hiking rides on fibers. From floor level to nine feet up, bacterial growth on culture plates exposed to the air was about equal, indicating that bacteria are evenly distributed about the room. Fibers, on the other hand, rarely floated higher than six feet.

In a final test, Mr. Pressley reports in Rural Research in CSIRO, a harmless, bright yellow marker bacterium related to the more troublesome *Staphylococcus aureus* was used to trace the spread of infection. A bed covered with pure woolen blankets was deliberately contaminated with the marker organism, and at a later date, the same test was run using cotton blankets.

The organism spread to every other bed in the ward within a few hours regardless of the type of blanket originally contaminated. But fewer spread from the woolen blanket than from the cotton. And even fewer still were spread when the woolen blanket was left uncovered by a counterpane.

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## PUBLIC HEALTH

## Super-City Pollution Is Modern Age Plague

► THE UNITED STATES is suffering from the era of the super-city where the air is burdened annually with the waste products of more than 40 billion pounds of synthetic organic chemicals.

Dr. Richard A. Prindle, deputy chief of the U.S. Public Health Service's air pollution division, told the Annual Conference of the Philadelphia Tuberculosis and Health Association that the threat to health from polluted air is not just limited to the super-cities. Masses of air pollution are carried from urban centers to vegetation and animal life literally hundreds of miles away from the source.

Heavy pollution of waters by cities also affects the quality of waters out in the country, he noted. Damage to the needles of trees in the remote pine forests have been traced to city-produced air pollutants.

The filthy air and polluted streams cost annually \$7.5 billion in damage to vegetation, livestock, corrosion and soiling of materials and structures, interference with visibility, and depression of property values. Evidence indicates that air pollution is linked with increased mortality from cardio-respiratory causes, increased susceptibility to respiratory diseases, and interference with normal respiratory function, the U.S. Public Health Service official said.

Currently only 15 states have comprehensive air pollution control legislation. More control is needed throughout the nation. "We know how to control or prevent the great majority of air pollution emissions, but the equipment and technical knowledge available are not being applied," Dr. Prindle said. "The total job will require active participation by all levels of Government and by private organizations."

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# IN SCIENCE

## SEISMOLOGY

## Rusty Cable on Ocean Bottom to Save Lives

► AN ABANDONED cable rusting away on the ocean bottom will soon help save lives from earthquake-generated sea waves.

Hawaiian Institute of Geophysics scientists will attach a "tide gauge" to a communications cable that once linked Hawaii to the United States mainland. The pressure gauge will warn the Islands when a tsunami, sometimes incorrectly called tidal wave, is heading their way.

The 400-mile long cable will be hoisted to the surface, the pressure gauge added, and then lowered in several hundred feet of water. The instrument will measure the height of the wave by deep-sea changes in pressure. The information is then sent back to the island over the cable.

"The data will be used to supplement the present U.S. tsunami warning network," Dr. Leonard M. Murphy, chief of the U.S. Coast and Geodetic Survey's seismology branch, said. The Survey maintains a seismological-tidal gauge network that tells scientists when a tsunami is forming. A warning is sent to all islands and coastal areas in the wave's path, informing them when it will strike.

The submarine cable has been rusting away on the ocean bottom since a new cable linking the Islands and the U.S. continent was laid down about 30 years ago.

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## EDUCATION

## Grants for USSR Trip Open to U.S. Scholars

► ADVANCED AMERICAN scholars who want to spend "all or part" of the 1962-63 school year in study and research in the Soviet Union have until Dec. 15, 1961, to file an application, the Inter-University Committee on Travel Grants has announced.

Grants are available to college and university graduate students, post-doctoral researchers and faculty members from all fields, plus Russian language teachers in high schools. Applicants must be less than 40 years old and emotionally stable. They must have "a knowledge of Russian adequate to (study and research) needs."

Under an academic exchange program, the committee has sent 66 American graduate students and young faculty members to the Soviet Union since 1958. Another 38 will go during the 1961-62 year. An equivalent number of Soviet students have studied or will study in the United States.

Inquiries should be sent to Stephen Viederman, the committee's deputy chairman, at 719 Ballantine Hall, Indiana University, Bloomington, Ind.

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# E FIELDS

## PUBLIC HEALTH

### Water Pollution Menaces Soviet Health

► WATER POLLUTION is plaguing the Soviet Union and is a serious threat "not only to human health, but . . . to the entire national economy," according to a report in the USSR public health journal, *Hygiene and Sanitation*.

Major sources of pollution in the USSR are oil refineries, the chemical and rubber industries, Soviet mining and metallurgical enterprises, paper manufacturers and ordinary sewage.

The pollution problem is due to the failure of legally regulating the use of water resources on a nation-wide basis or planning protective policies, Russian authorities stated in the journal.

At the present time, "each plant or each industry utilizes its water facilities on an individual—purely local—basis, guided solely by its own particular needs," the proceedings of a commission convened by the USSR Ministry of Health revealed.

Soviet water problems were made known in the United States by a U.S. Public Health Service survey of Russian literature on water supply and pollution control.

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## PSYCHIATRY

### Memories Leave Fine Trace in the Brain

► SCIENTISTS looking for traces of memories in the brain should use a scale millions of times finer than they have been using.

Instead of looking on the level of nerve cells, they should look on the molecular level, scientists learned at a New York State divisional meeting of the American Psychiatric Association in New York.

Memories should be measured in angstroms, rather than in millimeters, Dr. Hans-Lukas Teuber, Massachusetts Institute of Technology psychologist, told the meeting. By looking on too large a scale, psychologists have missed the physiological evidence altogether. In fact, Dr. Teuber said, those who teach are pretty well convinced that learning or memory sometimes does not actually take place at all.

Dr. Linus Pauling, 1954 Nobel prize winner in chemistry, also indicated that memory may be a matter of chemistry or electricity rather than establishment of nervous pathways.

There are two kinds of memory, both psychologist and chemist agree. There is a recent or ephemeral memory that is easily destroyed or impaired by a blow on the head, convulsions, electric shock, or by certain chemicals such as anesthetics.

After a time these recent memories be-

come consolidated into "permanent" memories that are much less vulnerable to damage or loss.

Dr. Teuber is now conducting experiments in which attempts are being made to "overtake" a memory process during consolidation by injecting chemical substances. In this way, it is hoped to induce selective losses of recently acquired material without the drastic general effects of concussion, general anesthesia or electroshock-induced convulsions.

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## ENGINEERING

### Tests Uphold 70-Year Old Formula for Water Flow

► THE FORMULA for flow of water in open channels and pipes developed by an Irish engineer, Robert Manning, in 1891, and used by civil and hydraulic engineers ever since, is still about as good a formula as can be used.

This has been shown by extensive tests at the Rocky Mountain Hydraulic Laboratory at Allenspark, Colo., which uses a crystal-clear mountain stream fed by melting snow for its experiments.

The tests were made under a grant from the National Science Foundation, administered by the Colorado State University.

A 400-foot adjustable-slope triangular flume was tested smooth and also roughened with small rectangular battens at various spacings. Manning's formula, which is found in the engineering text books, gave about as good results as a logarithmic formula that was worked out of the results of the test.

The engineers who did the tests were Ralph W. Powell, emeritus professor of engineering mechanics, Ohio State University, and Chesley J. Posey, director, Rocky Mountain Hydraulic Laboratory, and head, department of civil engineering, State University of Iowa.

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## PHARMACOLOGY

### Drugstore Antiseptic Outranks Oral Iodine

► A NON-PRESCRIPTION drugstore product outranked a new oral iodine in destroying germs commonly found in the mouth.

Chloraseptic, a spray-and-swallow solution marketed by a Washington, D.C., firm, was applied to 40 mouth areas before a needle injected local pain-killing drugs prior to dental or oral surgery. Bacteria were recovered from only one needle. Multiple injections occurred in 35 cases.

When povidone-iodine was used, only five out of 115 injection needles had bacteria.

Drs. Doran D. Zinner, James M. Jablon and Milton S. Saslaw of the University of Miami and National Children's Cardiac Hospital, Miami, Fla., report the findings in the *Journal of Oral Surgery, Oral Medicine and Oral Pathology*, Nov. 1961.

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## MEDICINE

### New Hospital Technique Curbs "Staph" Infections

► A SIMPLE new hospital technique has effectively curbed "staph" infections in hospital nurseries for a 20-month period.

A key part of the technique involves washing all infants immediately after birth and daily thereafter with a hexachlorophene solution. The technique keeps the staphylococcus germs from reaching the skin of the infants.

The method has been tried at two hospitals with excellent results, Dr. Sumner J. Yaffe, assistant professor of pediatrics at Stanford University School of Medicine, told a meeting of the Western Society for Pediatric Research in San Francisco. Co-author of the report is Dr. Harold J. Simon, assistant professor of medicine and medical microbiology at Stanford.

"Staph" germs have caused epidemics and in some cases several deaths in hospital nurseries in the United States and abroad. They are the chief cause of infection in maternity units.

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## MEDICINE

### Eye Cancer Cases Helped Through Drug Treatment

► CHILDREN with eye cancer that has spread to other parts of the body have received a new lease on life through drug treatment.

Eight children suffering from eye cancer that had spread to the bone marrow lived from two to 11 months longer after treatment with a combination of three drugs, Dr. James A. Wolff of the Columbia University College of Physicians and Surgeons, New York, said. The eye cancer strikes children under four years of age.

The child who lived longest—11 months after the diagnosis of spreading cancer had been made—was treated with Cytosan, a mustard compound; actinomycin D, an antibiotic; and methotrexate, a folic acid antagonist, first used in the treatment of leukemia.

For years, Dr. Wolff said, physicians did not know that retinoblastoma (eye cancer) spread. In 1948, when he first came to Columbia University, he found one patient who had this condition but it was not until two years ago that he began serious work in screening children to find cases in which the eye cancer had spread.

Out of 24 children with retinoblastoma he found the eight who responded to drug treatment, Dr. Wolff told the second conference on Experimental Clinical Cancer Chemotherapy in Washington, D. C.

"Here was a lead to an involvement we did not suspect," Dr. Wolff said, adding that he saw hope for longer survival as research progressed. "It looks as though triple therapy would offer most promising results," he said.

Eighty percent of the children with retinoblastoma confined to the eye alone survived five years.

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