

## GEOLOGY

## Russians to Drill Crust

► **RUSSIAN GEOLOGISTS** will soon drill five holes, six to nine miles deep, into the earth's crust. The feat is expected to rival Project Mohole, the United States attempt to penetrate the earth's crust to the underlying mantle.

Looking beyond, the Russians believe that mine shafts extending perhaps 19 miles down, and "underground ships" carrying remotely controlled instruments could eventually be used.

A Russian professor, Yuri Kravtsov, writing in *USSR*, a Soviet magazine, reports the holes would be the deepest ever drilled and may help reveal some of the secrets of the earth.

A Texas well about five miles deep holds the record for the deepest hole. Preliminary drilling during Project Mohole has only reached about 12,000 feet, but the feat was significant because it was drilled in the ocean.

The holes will be drilled in five wide-spread geologic areas in the Soviet Union. The Caspian hole will be seven or eight miles deep and will help study oil forma-

tions and thick rock layers. Other sites will be in the Urals, in Transcaucasia and in the Karelian region. The fifth site is in the southern part of the Kuril archipelago north of Japan.

The crust is thinnest at the Kuril site, and this is where the Russians will try to reach the earth's mantle.

The five areas were chosen for their significance and possible contribution to the knowledge of geologists and geophysicists.

The mine proposed by the Russians would be a series of vertical and inclined shafts in a ladderlike, zigzag pattern. Each level would have separate equipment and service. It could be used for a field laboratory, a base for further studies, or a pilot project for tapping the thermal energy of the earth's interior.

The "underground ships" might "become vastly important instruments for researching terrestrial depths," the Soviet scientist states. Their design is realistic, and their function would be to send information on the earth depths to the surface, he explains.

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## SPACE

## New Astronaut Team

► **THE NEW TEAM** of astronauts to be chosen this year will first fly as co-pilots in the two-man Gemini space capsule with the experienced Mercury astronauts as commanders.

Flights of the Gemini capsule, designed to join spacecraft together while in orbit for long space trips, are scheduled for 1963-64. The new astronauts will not go on any of the Mercury flights, the National Aeronautics and Space Administration told *SCIENCE SERVICE*.

However, they will participate in the Mercury program when the Mercury astronauts make the scheduled flights of up to 18 orbits during the next year. The new astronauts will be observing on the Mercury program and will take part in operations such as tracking during the flight. They will also sit in on technical and engineering meetings connected with the Mercury flights.

It will take at least six months for selecting and screening the new candidates for astronaut training. The space agency said

that no changes in the requirements for the choosing of possible future astronauts have been made because of the experiences and information from the first space flights.

The candidates must have 1,500 hours of flying, a bachelor's degree in engineering or science (or equivalent), be a graduate from a military test pilot school, be under 40 years of age and stand five feet, 11 inches, or less. Forty-year-old Astronaut John H. Glenn Jr. was 37 when he began training.

There will be no changes in the medical requirements or tests given the future astronauts because of the "heart flutter" sometimes experienced by Astronaut Donald K. (Deke) Slayton and discovered during the training period. This heart flutter has not impeded Deke in his training and is now being studied.

The space agency said that the medical examinations astronaut candidates go through are the most thorough-going so far devised by medical science.

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## METEOROLOGY

## "Vidmet" Demonstrated

► **THE U.S. WEATHER BUREAU** made public for the first time its experimental closed circuit television program known as "Vidmet," from video meteorology. It shows the world's weather and weather satellite photographs, as well as more local forecast maps.

More than 100 technical experts from 41

nations, gathered March 26 in Washington, D.C., for a World Meteorological Organization (WMO) meeting, saw the Vidmet broadcasts at the State Department's new building. Some experts from the Northern Hemisphere will be able to tell whether or not it is raining at home during their 26-day session aimed at settling many difficult

problems of world-wide cooperation in forecasting weather.

The Vidmet experimental programs have previously been seen only in the Weather Bureau's offices in Washington. Ultimate goal is to be able to provide current weather information at any time of the day or night to local areas when severe storms threaten. For instance, when a hurricane is battering the East Coast, local television stations could keep viewers continuously informed of its motion and expected path.

Also on exhibit at the State Department for the World Meteorological Organization delegates is a display on the Tiros weather satellites. Photographs from Tiros IV are being flashed to the Vidmet screen as they are taken, if of particular interest. How WMO nations can best use the information gathered by weather satellites is one of the main problems to be settled during the meeting.

Another problem is the establishment of a communications network for the Southern Hemisphere comparable to that now operating for weather information in the Northern Hemisphere. Following that, linking the networks of the two hemispheres into one world-wide system is proposed.

Chief U.S. delegate to the WMO Commission for Synoptic Meteorology is Edward M. Vernon, chief of the U.S. Weather Bureau's synoptic and forecast reports section. Paul H. Kutschenreuter, also of the Weather Bureau, is president of this WMO Commission.

Four Russian delegates are attending, and about half of the nations belonging to the United Nations are represented.

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## BIOCHEMISTRY

## New Drug Overcomes Overdose of Pills

► **A CHEMICAL** that counteracts overdoses of sleeping pills, alcohol and morphine in animals was described at the American Chemical Society meeting in Washington, D.C.

Experiments with the new agent (AHR-619) also have demonstrated its usefulness in stimulating breathing in such conditions as lung disease, shock and depressed respiration following anesthesia, Dr. Carl D. Lunsford, director of chemical research at the A. H. Robins Company, Inc., Richmond, Va., said.

The chemical appears to be among the most potent drugs ever tested for combating barbiturate intoxication in dogs. It also overcomes central nervous system depression produced by many different kinds of agents.

The most promising member of a class of compounds called 1-substituted-3,3-diphenyl-2-pyrrolidones, the new agent has been selected for further evaluation in animals and in human beings, the chemist said. Unlike other available drugs for these purposes, AHR-619 is effective in extremely low doses.

Dr. Herndon Jenkins and Albert D. Cale Jr., both of A. H. Robins Company, collaborated in the studies.

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