NEWS IN BRIEF

• **REPORT URGES UNMANNED SPACE PROBES**: A National Academy of Sciences (NAS) panel, consisting of 23 leading space scientists, urged this week that a series of unmanned planetary and outer space explorations be planned for the 1970's. In a report that was approved by the NAS Space Science Board, the panel estimated that such unmanned flights would be far less costly than NASA's present manned program and would reap valuable scientific information on the origin of the universe and the nature of the earth's own atmosphere. Specifically, the report recommends, in order of their scientific importance, the following series of missions: Jupiter deep-entry probe and flyby (1974); Jupiter orbiter mission (1976); Jupiter-Saturn-Pluto grand tour (1977); Jupiter-Uranus-Neptune grand tour (1979); Jupiter-Uranus entry probe missions (early 1980's). The NAS committee, chaired by James Van Allen of the University of Iowa and Gordon MacDonald of the University of California, stressed that the 1970 decade will present a rare opportunity for solar scientists to observe the planets in a line-up formation that occurs about once every 200 years. The report specifically recommends that NASA submit to Congress in 1971 a budgetary plan for a long-term solar system exploration. *The Outer Solar System: A Program for Exploration* may be obtained at no cost from the Space Science Board, 2101 Constitution Ave., NW, Washington, D.C.

• **U.S.–FRENCH SCIENTIFIC COOPERATION**: Presidential Science Adviser Lee A. DuBridge and French Minister of Scientific Research F. X. Ortoli will exchange visits this fall to discuss development of new fields of scientific cooperation. The U.S.–French exchange was proposed in discussions during President Nixon's visit with General de Gaulle in Paris earlier this year. The exchange marks the first time in 5 years that bilateral scientific talks between France and the United States will occur on a ministerial level. The two science representatives are expected to discuss possible new fields of cooperation in such areas as environmental and urban research, and to review ongoing cooperation in space, oceanography, medical and biological research, and education.

• **SPACE CONSORTIUM CREATED**: The Universities Space Research Association (USRA), a national consortium of 48 universities, was organized on 16 July by the National Academy of Sciences to foster cooperation in space research among universities, research organizations, and the government. The USRA is slated this fall to take over the management of NASA's Lunar Science Institute in Houston, which is temporarily under the direction of the National Academy of Sciences. The Lunar Science Institute provides a base for outside scientists who wish to conduct space science research in Houston, particularly at the Lunar Receiving Laboratory at NASA's Manned Spacecraft Center. The USRA has plans to operate other laboratories and research and educational centers in the future.

• **POISON GAS**: The U.S. government has acknowledged that a limited amount of poison gas is being stored in West Germany. The Pentagon had earlier admitted storing chemical weapons on the island of Okinawa; this was its first acknowledgment that poison gases were being stored abroad.

• **APPALACHIAN HEALTH CENTER CREATED**: A new regional center for environmental health studies has been established in Appalachia to conduct broad health studies on regional problems such as coal worker's pneumoconiosis or "black lung" disease, occupational injuries, noise, solid waste disposal, hygiene, and radiological health. The $5 million Appalachian center, which will be located in Morgantown on the campus of the University of West Virginia, is being established by the Environmental Control Administration of the Public Health Service (PHS). The center, which will work closely with the university to coordinate research activities, is expected to send teams of scientific persons to do field work and conduct training and demonstration programs throughout the Appalachian region. The Appalachian center, to be completed in 1971, is the second regional PHS environmental center to be established; an Arctic Health Research Center was set up in 1948 in Fairbanks, Alaska, to coordinate health programs for Indians in the region.

Alaska have suggested that the sheer momentum of the fire-fighting crusade has not only obscured the role of fire in forest ecology but has extended a policy of total fire exclusion to situations where the classical reasons for fighting fires do not exist. This argument has been applied particularly to sections of interior Alaska where the permafrost and short growing season produce timber of minimal market value, far from any road or settlement. Lightning-caused fires smolder in the thick carpet of moss above the permafrost and quite often do not burn thoroughly enough to expose the mineral soil to erosion. Little research has been done on the subject, but several Alaskan researchers have suggested that the bulldozers used in carving fire lines around interior fires may cause more erosion than the fires themselves.

Fire exclusion has also raised problems in Southern pine forests. As in the West, fire-suppression policies allowed dangerous amounts of combustible materials to accumulate on the forest floor. A type of pine fungus disease that thrives in forest litter also became an increasingly serious problem to forest managers. Foresters in the South are chiefly interested in producing softwood pine trees, but, under the policy of total fire suppression, the deciduous hardwood trees that are normally controlled by fires began to wrest control from the softwoods.

As foresters recognized these adverse side effects, a more balanced attitude toward fire emerged. A technique known as "prescribed burning" was developed in the South to manage plant communities for silvicultural or wildlife-management purposes and to complement fire-suppression activities by eliminating fire hazards. As the name indicates, prescribed burning involves setting a controlled fire under specific conditions of wind velocity, humidity, local topography, and time of year. Among the practices currently lumped together under the heading of prescribed burning are the burning of slash (waste wood) after logging operations, the clearing of fuel breaks to prevent wildfires from spreading from one stand of timber to another, and the burning of undergrowth and litter on the forest floor to reduce fire hazards. Prescribed burning is usually done before or after the local fire season when fires are easily controlled and generally not intense enough to cause extensive soil damage.

Prescribed burning has recently become a standard practice in the South-