

GENERAL SCIENCE

Scientists Advise Congress

Scientist tells Congress that aid to the physical sciences on a large scale, like the grants to medical science, is needed. "Lump subsidies" to universities are recommended.

UNITED STATES scientists should know within the next ten years the extent to which such weather factors as lightning, hail and rain can be modified or controlled, a distinguished meteorologist believes.

Dr. Sverre Pettersen of the University of Chicago advised the House Committee on Science and Astronautics, meeting for the first time with a panel of scientists, that information from solar and earth satellites should provide a picture of the energy input and output of the earth's atmosphere by 1970. Coordinated with a global system of atmospheric observations, this information will provide the first observations of how the atmosphere works as a great, integrated system.

Martin Goland, a scientist at the Southwest Research Institute in San Antonio, Tex., was also optimistic about the future of fuel cells—efficient battery-like devices now being developed that convert chemicals to electricity.

He said small cell units in homes and industry could provide cheap, reliable electricity without extensive wiring to a single power plant. The cells, he said, would have more immediate usefulness as compact power sources inside space craft and submarines.

Much of the \$1,500,000 now being spent on research on fuel cells is spent by private business, Mr. Goland said. He suggested a central research organization could coordinate the work and promote freer exchange of information.

The discoverer of radiation belts about the earth, Dr. James A. Van Allen of the State University of Iowa, told the committee that the National Science Foundation's pilot program to provide university facilities for the physical sciences "does only one percent of the job."

He asked for aid to the physical sciences on a larger scale, similar to the National Institutes of Health's grants in medical areas. And he criticized the U.S. policy of

short-term grants for research projects.

"Lump subsidies," he said, should be given to universities for distribution for scientific research. Dr. Van Allen said this method is commonly used in Great Britain and Scandinavian countries, and has proved successful.

Physicist James L. Tuck of the Los Alamos Scientific Laboratory in New Mexico told the Joint Congressional Committee on Atomic Energy:

"We (at Los Alamos) are now prepared to bet our reputations that we have had a thermonuclear reaction." This announcement reported a small but important step toward the harnessing of the power of the hydrogen bomb.

At the joint committee hearings, Dr. David B. Hall of the Los Alamos laboratory, pointed out one advantage of nuclear power: no smog.

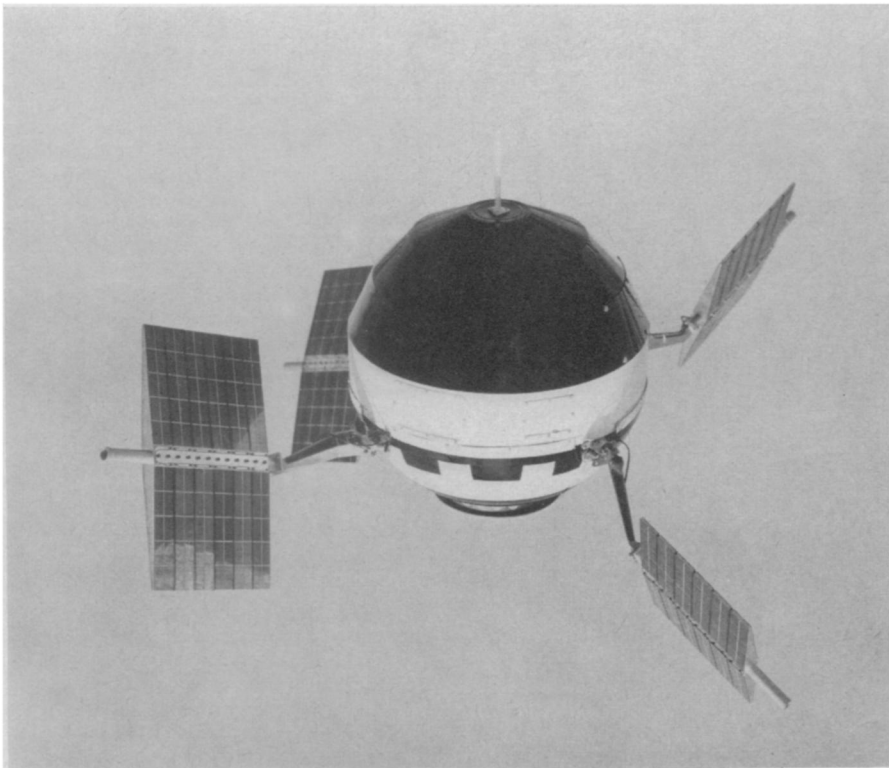
"The increases in the carbon dioxide content of atmosphere from ever increasing consumption of fossil fuel, such as coal, oil and wood, might conceivably be altering the climate and geography of the world both by increasing the mean temperature, and hence the sea level, and by affecting the cloud formation and rainfall," Dr. Hall said.

"Both of these effects would tend to make the average climates warmer and drier. It is a matter of record that bodies of water have recently disappeared after supporting marine life for many thousands of years, a fact which supports the theory that man is changing his environment."

Dr. Bernard Manowitz of the Brookhaven National Laboratory, Upton, N. Y., announced two studies by the lab which showed it is possible to design a special nuclear reactor to produce chemical products, including fertilizer.

Atomic energy, he said, can break chemical bonds and form active materials which recombine as new chemical substances.

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PLANETOID IN ORBIT—Pioneer V, orbiting between earth and Venus, carries a 150-watt radio transmitter, believed to be the most powerful yet in space. The transmitter, within the 26-inch sphere, is expected to radio information as far as 50,000,000 miles. The paddles contain solar cells that convert the sunlight into electric energy which charges the nickel cadmium batteries that make the transmitter run.

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Basic Research Aided If Bill Passes Congress

A BILL to "further and encourage basic scientific and technological research" has been introduced in Congress by Rep. Victor L. Anfuso (D-N.Y.).

It would provide for establishment of a "ten percent fund" to be used in research and development contracts entered into by the Federal Government. Under this proposal, the Congressman explained, contractors would be entitled to an additional ten percent of the total sum of the contract if they work on basic and supporting research.

"Authoritative sources tell me," Mr. Anfuso said, "that we now have enough scientific brains and private industrial know-how which, if properly mobilized and utilized, would not only enable us to catch up with the Russians where we have fallen behind, but to surpass them in all scientific and technological endeavors. The key to this is basic research and this we must encourage to the fullest measure."

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