

## GENERAL SCIENCE

# Report Science to Layman

The scientist has a duty to report his findings to the general public and in a manner the layman understands. Participation in public affairs by the scientist is important.

► THE SCIENTIST has a duty to report his scientific findings to the general public, and he should make reports the average layman can understand, Dr. Thomas Park, zoologist at the University of Chicago and president-elect of the American Association for the Advancement of Science, told SCIENCE SERVICE.

"We are moving faster in this area than ever before," he said, but the scientist still has not gone far enough in public communication. He credited recent advances in communication since Sputnik to the "curiosity and interest of our young people.

"This and a general rising public interest in the impact of science has stimulated scientists to respond more freely," Dr. Park said.

"One of the best ways to get scientific information to the public is through such organizations as the AAAS, Science Service and other science information media, as well as by direct contact and communication with talented science writers," he said. The AAAS is the world's largest group of scientific organizations, and includes science writing, education and information groups.

"The scientist also has a responsibility to speak as a citizen," Dr. Park said. "But when he speaks as an intelligent and sensitive citizen on community matters, he should not presume to speak with scientific authority except on matters within his competence.

"Anything I would say on the national and local implications of nuclear development, for example, would have no scientific validity. This is not my scientific field and I can speak only as an informed and concerned citizen rather than as a scientist," he emphasized.

However, participation in public affairs by the scientist is important. It helps break the barrier that traditionally has set the scientist apart from the community, Dr. Park said.

An important area of community interest in which Dr. Park can speak with scientific authority concerns population growth and development, and the forces affecting them.

Dr. Park has done research on the basic scientific problems of population since 1927. Using insects such as the flour beetle, he has investigated such subjects as birth rates, death rates, population crowding, and competition and its effect on population numbers.

"We have proved many times over, working with experimental insect population, that when population becomes too crowded, bad things happen. The death rate increases while the birth rate decreases. There is an increase in disease and malformations and a general physiological deterioration or weakening.

"These things occur even though food

supplies are ample. We know, of course, that overcrowding on the human level also has ill results; but generally speaking, it would not be entirely correct to say that what has been learned from insect population studies applies directly to the human population," Dr. Park said.

Dr. Park participated in the General Symposium of the 127th annual AAAS meeting in New York.

• Science News Letter, 79:3 January 7, 1961

## Men Will Serve Machines

► FUTURE SPACEMEN will play "second fiddle" to instruments launched from earth by man to perform vital space functions, Dr. S. F. Singer, University of Maryland physicist, predicted.

"Sooner or later the instrumentation systems, built up to perform vital space functions, will become so complicated and expensive that we will need man in the very inglorious role of a maintenance and repair man, for complex television and communication satellites, or to the complex astronomical observatories in space," he told the American Association for the Advancement of Science meeting in New York.

Dr. Singer described man as "the only non-linear, 150-pound servomechanical sys-

tem which can be mass-produced by unskilled labor."

Although man may have to serve machines in space, he will also be serving himself. Studying the biological system that is man in the absence of earth "will be useful to us because we are men and can absorb the information and apply it for our benefit," Dr. Singer said.

Man in space will assume his most important role in the military field because he is an ideal mechanism for providing the judgment, selection and filtering necessary to make a reconnaissance system operate most efficiently.

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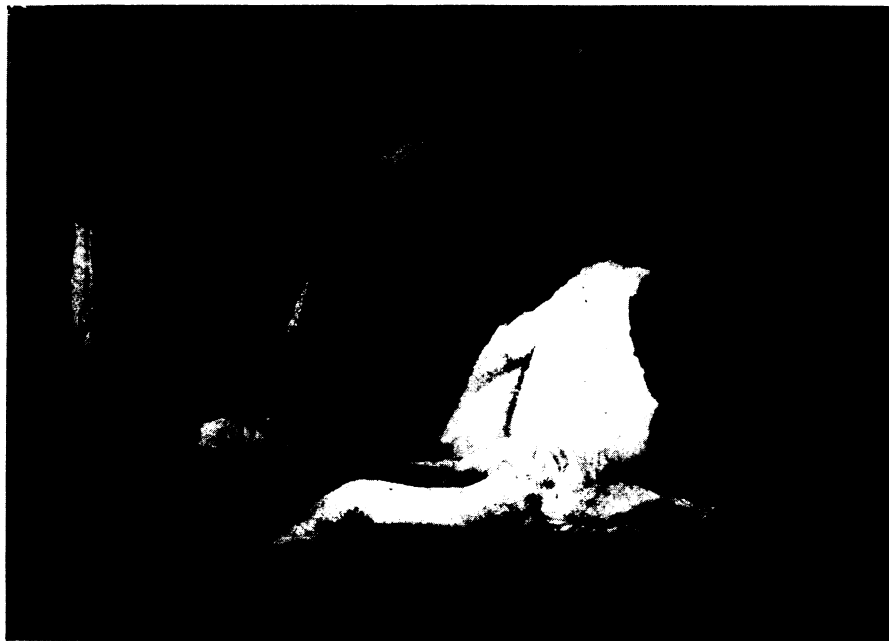
## Minerals Found in China

► RECENT VALUABLE MINERAL discoveries in Red China are due to the vast increase in the number of her trained scientists since the Communist regime came to power, Dr. Edward C. T. Chao of the U. S. Geological Survey in Washington, D. C., reported.

Prior to 1950, before the Communists assumed control over China, only about 200 scientists were actively engaged in geological research. Now Red China boasts over 21,000 "geological workers," he reported at the 127th annual meeting of the American Association for the Advancement of Science in New York.

Among the many new and large mineral deposits discovered by this corps of Chinese geological workers is the molybdenum reserve, now rated "number one in the world."

Molybdenum is one of the important hard, light, temperature-resistant metals par-



**CONTENTED COW**—The newest idea for getting more and better milk is foam mattresses for cows. More sanitary than straw, the nylon covered mattress can be kept clean when hosed with water while the cow goes off for milking. During tests of the "Kowlays" milk yields were increased and bruising of hocks and mastitis were almost eliminated.

ticularly useful in the construction of airplanes and space vehicles.

"The Chinese geologists also have discovered very large iron and copper deposits that from reports would appear to compare with any of the world's first rate deposits of these valuable metals, Dr. Chao said. New deposits of boron, potash and chromium also have resulted from surveys made by the "geological workers," as well as important sources of radioactive minerals.

The production of tungsten, tin and antimony, for which China has been world famous for nearly half a century, also has shown a marked increase under the Chinese Communists. In recent years, Communist China had been the foremost world producer of tungsten and antimony, world-significant export metals; and she is now the second ranking producer of tin.

This progress, Dr. Chao pointed out, is being made by a country whose geologic research is still virtually in its infancy.

He underscored the strong Russian influence that "permeates some areas of thinking in Chinese geology." Many field and laboratory procedures are patterned after the Russians, Dr. Chao said. More than 400 Russian geologists and engineers have visited China and participated in field geologic work or training program in China, in the past ten years.

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## Poor Man's Space Probe

► METEORS, which become "shooting stars" when burning up in the earth's atmosphere, are the "poor man's space probe," Dr. Edward Anders of the University of Chicago told the American Association for the Advancement of Science meeting in New York.

Dr. Anders was named winner of a top award, the Newcomb Cleveland \$1,000 Prize, for his new theory on the life and death of meteorites.

From the viewpoint of learning about the nature of cosmic radiation, Dr. Anders said that a "meteorite is nothing but a 'poor man's space probe' that was launched quite unceremoniously somewhere in the asteroidal belt sometime during the last two billion years and was recovered recently without assistance from the Air Force."

He believes that asteroidal-size bodies were formed from primordial cosmic dust. These bodies underwent volcanic-like eruptions, cooled to sub-zero temperatures, collided with each other in space and broke up into meteorites.

The maximum size of these asteroids, parent bodies of meteorites, was not more than 300 miles in diameter. The asteroidal belt, birthplace of meteorites, is located between the orbits of Mars and Jupiter.

The parent bodies were formed early in the history of the solar system, four and a half to five billion years ago, Dr. Anders reported.

Meteorites, Dr. Anders said, offer clues to such fundamental questions as the origin and age of the chemical elements, the origin of life, the age of the earth, the relation between cosmic rays and the sun, and even such down-to-earth ones as "the wearing

away of missile nose cones during passage through the atmosphere."

At the present rate of progress in the study of meteorites, which has greatly increased recently, he predicted that in another two years or so scientists would have "acquired a thorough understanding of the nuclear events that preceded the formation of the solar system."

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## Gangs Poorly Organized

► VIOLENT JUVENILE gangs are not the close-knit organizations they are generally assumed to be.

This basic misconception produces inaccurate reports and causes ineffectual remedial action work with gangs, Dr. Lewis Yablonsky, University of Michigan sociologist and a visiting lecturer at Harvard University, reported.

These gangs are better characterized as "near-groups." They have disturbed leadership, shifting membership, limited definition of membership requirements, impermanence and a minimal consensus of norms, he reported to the American Association for the Advancement of Science meeting in New York.

In treating the gang, the removal of the leader and his commitment for psychiatric observation is essential.

A community should not take the position that gang activity, which often results in violence or senseless killings, is rational, normal behavior," Dr. Yablonsky said.

"With gang behavior stigmatized as 'crazy or nutty' many youths would not participate in the gang and its violence," Dr. Yablonsky said. There is glory in being known as tough but none in being known as sick by gang youths, he noted.

The gang followers are not as disturbed as the leaders. They can be reasoned with and led into constructive activities.

He urged local citizens to work with youths in various constructive community activity projects. This would minimize a basic current cause of delinquency—the breakdown of adult-youth relationship, Dr. Yablonsky said.

He initiated such a project, the Adult-Youth Association in a high-delinquency area in New York. The program has involved more than 600 youngsters in productive interaction working with about 40 cooperative local adults. It has helped reduce delinquency, gang violence and youth problems in the area.

Delinquency also could be decreased by improvements in the more traditional correctional services of probation, parole and institutional facilities.

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## Raw Materials Shortage In U. S. and Canada

► BY 1980 the United States and Canada will need twice as much industrial raw material as they now use. Because of this high rate of consumption, these countries can no longer be classified as surplus ma-

terials areas, stated Wilbert G. Fritz of the U. S. Office of Civil and Defense Mobilization in a special report prepared for the Canadian-American Committee.

During the next 20 years, the United States and Canada will become more dependent upon each other for sources of industrial raw materials. The United States will import more iron ore, natural gas and nickel from Canada, and Canada will depend upon the United States for more coal, molybdenum and phosphate.

In addition to the transfer of raw materials across the border, both countries will also rely more heavily on overseas sources of supply.

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