GENERAL SCIENCE

International Cooperation Year

Problem of poverty, struggle against disease and new resources development are stressed by President Johnson in dedication of year 1965 to science.

Excerpts from remarks by President Lyndon B. Johnson at Holy Cross commencement, Worchester, Mass., June 10.

➤ . . . THREE PROBLEMS . . . menace man's welfare and will threaten it even when armed destruction and war are things of the past. They are the problems of poverty, of disease and of diminishing natural resources.

First is the problem of poverty—the growing division between the rich and poor nations. Today the per capita product of the developed countries is $1,730 a year. In the developing countries it is $143. And the gap is widening, not narrowing. Our own growth must continue. But we must find ways to step up the growth of others or we will be an increasingly isolated island of wealth in the midst of mounting misery.

Second is man's struggle against disease, the focal point in his war to control the destructive forces of nature. Each year three million people die from tuberculosis. Each year five million die from dysentery, 500,000 from measles. In some countries, one-sixth of the entire population suffers from leprosy. Yet, we have the knowledge to reduce the toll of these diseases, and avert these millions of separate tragedies of needless death and suffering.

Third is the need to develop new resources, and new ways to use existing resources. It has been estimated that if everyone in the world were to rise to the level of living of the United States we would then have to extract about 20 billion tons of iron, 300 million tons of copper, 300 million tons of lead and 200 million tons of zinc. These totals are well over 100 times the world's present annual rate of production.

There is no simple solution to these problems. In the past there would have been no solution at all. Today, the constantly unfolding conquests of science give man the power over his world and nature which brings the prospect of success within the purview of hope.

To commemorate the United Nations' Twentieth Birthday, 1965 has been designated International Cooperation Year. I propose to dedicate this year to finding new techniques for making man's knowledge serve man's welfare. Let this be the year of science. Let it be a turning point in the struggle—not of man against man, but of man against nature. In the midst of tension let us begin to chart a course toward the possibilities of conquest which bypass the politics of the cold war.

For our own part, we intend to call upon all the resources of this great Nation—both public and private—to work with other nations to find new methods of improving the life of man.

First, by September, I will report to the Third International Conference in Geneva on The Peaceful Uses of Atomic Energy on our new capability to use the power of the atom to meet human needs. It appears that the long promised day of economical nuclear power is close at hand.

In the past several months we have achieved an economic break-through in the use of large-scale reactors for commercial power. As a result of this rapid progress we are years ahead of our planned progress. This new technology, now being applied in the United States, will be available to the world.

Moreover, the development of the large-scale reactor offers a dramatic prospect of transforming sea water into water suitable for human consumption and industrial use. Large-scale nuclear reactors and desalting plants offer, in combination, economical electric power and useable water in areas of need. We are engaged in research and development to transform this scientists' concept into reality.

Second, I intend to expand our efforts to provide protection against disease. In the last few years we have conducted pilot projects in West Africa on methods of immunizing young Africans against measles—the single biggest killer of children in that area. The success of that project has enabled us to proceed, this year, with a program to immunize one-fourth of the susceptible population in seven countries of West Africa.

During International Cooperation Year, we will expand our efforts to prevent and to control disease in every continent, cooperating with other nations which seek to elevate the well-being of mankind.

No nation can stand idly by while millions suffer and die from afflictions which we have the power to prevent.

Third, we will move ahead with plans to devise a world-wide weather system—using the satellites and facilities of all industrialized countries. The space age has given us unparalleled capacity to predict the course of the weather. By working together, on a global basis, we can take new strides toward coping with the historic enemies of storm and drought and flood.

These are only a few examples of the many fronts on which science can serve the society of man. These are some of the possibilities which unfold as reduced tension opens the way to larger cooperation. . . .

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PSYCHOLOGY

How to Spur Ambition

➤ THE PATTERNS of rewards mingled with disappointments that will best encourage a young child to continual striving toward success are being studied.

Dr. Glen D. Jensen, psychologist at DePaul University, Chicago, working under grants from the U. S. Department of Health, Education and Welfare, hopes eventually to express his conclusions in a workable mathematical formula.

Thus far most of Dr. Jensen's studies have been with white rats in the laboratory. The rats are divided into two main categories: those spoiled with kindness and those regularly disappointed.

Rats in the first group receive food as often as they wish by pressing a bar located in their cells. The second group, however, after receiving food following the first press of the bar, must wait for five presses before getting more food. Then the number of presses required increases according to geometrical progression: 10, 20, 40—all the way to 160.

After each group has been conditioned to its feeding schedule Dr. Jensen cuts off the food supply entirely and measures the rate and duration of the bar-pressing with an electric recording apparatus.

Studies so far show spoiled rats lose heart quickly, while the frequently disappointed rats are more persistent. Dr. Jensen has conducted similar experiments on 130 children from 3 to 9 years old.

There has been a significant correspondence between the behavior of children and that of the laboratory animals with regard to persistence, Dr. Jensen reported.

The children work with marbles rather than food. Some are purposely spoiled and some are rewarded only after a number of presses. Then the marbles are cut off entirely and measurements taken.

Dr. Jensen's preliminary conclusions suggest that children disappointed more often than rewarded tend to persist much longer than those who are used to getting what they want every time.

"What I am trying to do is systematize what we know so that parents will have a useful rule for encouraging certain kinds of persistence in their children, rather than having to rely only on intuition to decide when they are being too strict or too lenient," Dr. Jensen explained.

Food and toys are not the only rewards, he pointed out. Allowing a child to stay up late or to watch a television show or even deciding not to punish him are all rewards. All these decisions have an effect on a child's behavior, Dr. Jensen said.

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