GENERAL SCIENCE

Aid of Science Imperative in Democracy's Fight to Survive

Leaders of American Science Present Symposium Of Agreeing Opinions at Meeting in Denver

HOW CAN science save democracy? In the non-public meetings of officers of the American Assocation for the Advancement of Science in Denver last week, this problem was discussed concretly, with some concern as to the methods by which science can be made to serve the people as a whole.

Concern in Europe

American scientists—most of them—are less excited about what is happening to the world than their European colleagues who are closer to the visible fire. The British Assocation for the Advancement of Science, England's counterpart to the American organization, has formally recognized the obligation of scientists to help government, industry, and other elements in everyday life. A major part of their meeting next September will be devoted to the public's welfare under the impact of science. There have been informal offers of scientific "hands across the sea" in the belief that the problem is international in scope.

The present trend of awakening scientific consciousness is expressed by one of America's pioneers in taking science to the people. He is Dr. William E. Ritter, 80-year-old emeritus biology professor of the University of California and honorary president of Science Service.

Democracy Needs Science

"Science is the main support to democracy," Dr. Ritter declared when asked what he considered science's greatest problem. "Popular government can not succed without the support of science."

Such a belief on the part of the late E. W. Scripps, founder of the Scripps-Howard newspapers, led to a scientific partnership between him and Dr. Ritter some twenty years ago. One of the results of this was the founding in 1921 of Science Service as the institution for the popularization of science, serving the press with accurate yet interesting scientific news and interpretation.

Dr. Edwin G. Conklin, famous Princeton biologist and retiring president of the Association, also feels that serious and immediate attention must be given to making science safe for civilization and civilization safe for science.

The goal that transcends in importance every other objective of science, in the opinion of Dr. F. R. Moulton, eminent astronomer and AAAS permanent secretary, is "an intellectual and moral world in tune with the uniformities which we know as the laws of nature."

All this means that science and the other factors in our civilization must give more attention immediately to the human and psychological factors in our daily life. It is just as necessary to get soil control measures plowed into the dirt of the Dust Bowl as it is to determine what to do. We must see that superior children get superior chances in life. We must arrange that steel's engineers, capitalists, and workers utilize peacefully, with fatter dinnerpails, new metallurgical techniques.

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NEAR LATITUDE ZERO

Anybody who has ever had even a little to do with telescopes will notice something peculiar about this one. The polar axis, which must be kept rather sharply inclined at our relatively high latitudes, is nearly horizontal. For this is one of the instruments of the Hayden Planetarium-Grace Eclipse Expedition, near Trujillo, Peru. Members of the party present are: Dr. Yamamoto, Japanese astronomer, Dr. Godofredo Garcia, Peruvian, Mrs. Isabel Lewis of U. S. Naval Observatory and Dr. Clyde Fisher, Hayden Planetarium. Photograph by Te Ata.

COSMOLOGY

Contemplation of Space and Time Deflates Human Ego

EACH of us to himself is the center of the universe. What we do is the most important thing in the world—to us. It is good for deflation of the human ego to look at astronomic distances and wonder what is the universe, whence it came and whither it is going.

If space started in the way that Einstein imagined, if it is curved so that it bends back upon itself to form a volume of finite dimensions, and if space has been expanding for some thousands of million years, the universe must be at least that old.

Eddington has calculated that the original unexpanded space must have had a radius of 1,100 million light-years.

A model of space has been constructed by Jeans. Is is on the scale of two million light-years to the inch. Light traveling 186,000 miles per second would take two million years to travel a single inch in the model. The initial circumference of space in this model would be about a hundred yards; which may have expanded to a half mile by now. The farthest visible nebulae would be only about ten feet from the earth. Our own galaxy would be a pinhead, perhaps a tenth of an inch in diameter. The stars visible in the night sky to our unaided eyes would be contained in a mere speck of dust, about one six-hundredth of an inch in radius.

The sun, most important thing in the heavens to us here on earth, would be a single electron on this scale. And it would be impossible to represent the earth, because an electron is not divisible—it would be a millionth part of an electron. Mere man would be even more infinitesimal.

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