

GENERAL SCIENCE

Scientists and Peace

They ought to do their share toward organizing a saner world, retiring president of the American Association for the Advancement of Science states.

➤SCIENTISTS ought to do their share towards organizing a saner, more peaceful world, because their training qualifies them to see things more objectively and should enable them to decide and act with less prejudice and passion, Prof. Anton J. Carlson of the University of Chicago declared in his address as retiring president of the American Association for the Advancement of Science.

Prof. Carlson specifically disclaimed for scientists any monopoly in wisdom, and admitted that as human beings they are exposed to the same pressures, fears and hopes as everyone else.

"All we can hope for ourselves," he said, "is that we apply a somewhat larger element of the integrity, gained in science, in our common life as citizens of our nation and of the world."

Taking as his text a saying of George Washington's, "Let us raise a standard to which the wise and the honest can repair," the speaker sought a scientist's definition of an honest man. He proposed:

"Man—that is, the human race—has dwelt on this earth at least a million years. It seems to me it is high time that those who would be wise should look ahead as to the consequences of their individual, national and international actions, not only today and tomorrow, but a hundred, a thousand, a hundred thousand years ahead.

"As I see it, the person who has developed some control of his greed, his vanity and his fears; who has developed to the limit of his brain the accumulated understanding of man and the universe, and who thinks in terms of his fellowman—that is, the human race—not for the day, for tomorrow, or even the next hundred years, but for a future at least as long as our human past; and who at the same time uses all his influence, without violence or coercion, to prevail on his fellowman to follow his example, that individual is entitled to the connotation 'wise'."

If no more than a corporal's guard of such persons can be found in each country, Prof. Carlson expects that they will eventually be able to leaven the lump of the present chaotic world, with its pious professions in Atlantic Charters

and the aims of the UNO, and the great nations' incompatible lying diplomacy and truculent rearmament.

Even if war should come again, it would not mean the end of the human race, he prophesied. It would merely wreck and retard our industrial civilization. The worst dangers to the human race, he declared, are not atom bombs but "slavery, parasitism, chicks that chirp but don't scratch."

In conclusion, Prof. Carlson looked toward a time when man's social behavior will become the subject of a real science, which will in turn lead to better and more efficient guidance of our everyday affairs:

"Some day our colleagues in the social sciences, by the methods and ethics known to work in the natural sciences, will provide man with data on human behavior, data as reliable and as unavoidable as are the confirmed data of chemistry and physics of today. When that day is here, guile and guess in human relations will surely recede, assuming that man of that era retains present mental capacities."

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ASTRONOMY

Knowledge of Milky Way Greatly Extended

➤ KNOWLEDGE of the Milky Way in the region of the Northern Cross has recently been extended some 4,000 light years, or almost 23,500,000,000,000 miles, through use of a new objective prism with the Schmidt-type telescope. Dr. J. J. Nassau of the Warner and Swasey Observatory, Case School of Applied Science, reported to the American Association for the Advancement of Science meeting.

In the Milky Way, in the direction of the constellation of Cygnus, the swan, there is at least one cloud of highly luminous blue stars, from seventh magnitude, just too faint to be seen with the naked eye, to stars as faint as the 13th magnitude. Imbedded in this cloud of stars is a mass of obscuring interstellar material which does not interfere with the light of the nearby stars, but definitely diminishes the number of faint or distant stars



PROF. A. J. CARLSON

visible, Dr. Nassau and Daniel Harris found.

The spectra of many stars, some fainter than the 12.5th magnitude, can be photographed simultaneously by means of the new four-degree objective prism attached to the Warner and Swasey Schmidt camera. A two-degree prism just put into use last month with this same telescope makes it possible to explore even farther into interstellar space. With it spectra of stars nearly as faint as magnitude 13.5 can be obtained.

Light from the stars, separated into spectrum lines, helps astronomers to determine the nature of the stellar radiations, surface temperatures, stellar motion and velocity, and the mass and density of the stars.

Made of dense flint glass, the new two-degree objective prism is 24 inches in diameter with a graduated thickness from 0.75 to 1.50 inches, producing an angle of two degrees, Dr. Nassau told the association section on astronomy. The spectra of the stars are less than 0.1 of an inch in length, but it is possible with this prism accurately to classify stars as well as obtain their intrinsic brightness. With a 20-minute exposure, spectra of stars of the 13th magnitude can be photographed readily.

Basically, a Schmidt instrument is a spherical mirror before which is placed a thin glass correcting lens. This makes possible with the astronomical instrument photographs of large regions of the sky far superior to those taken with ordinary lens-type cameras.

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