

GENERAL SCIENCE

Modern Scientists Isolated

Dr. J. Robert Oppenheimer decries loneliness and inadequacy of scientist in today's society. Asks leaders to seek a climate of world opinion where ideas can flourish.

► DR. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton, N. J., has concluded that today's scientists are too isolated in their work.

As the concluding speaker for Columbia University's 200th anniversary celebration, he said that the scientist in modern society is lonely and inadequate.

Dr. Oppenheimer stated that "in any science there is a harmony between practitioners." The scientist, he said, is a member of a professional community "where common understanding combines with common purpose and interest to bind men together both in freedom and in cooperation."

However, the scientist's professional experience "will make him actually aware of how limited, how inadequate, how precious is this condition of his life; for in his relations with a wider society, there will be neither the sense of community nor of objective understanding.

"He will sometimes find, in returning to practical undertakings, some sense of community with men who are not expert in his science, with other scientists whose work is remote from his, and with men of action and men of art.

"The frontiers of science are separated now by long years of study, by specialized vocabularies, arts, techniques and knowledge from the common heritage even of a most civilized society; and anyone working at the frontier of such science is in that sense a very long way from home, a long way too from the practical arts that were its matrix and origin, as indeed they were of what we today call art."

Scientists belong in universities, Dr. Oppenheimer said, because modern science is so specialized.

"The specialization of science," he said, "is an inevitable accompaniment of progress; yet it is full of dangers and it is cruelly wasteful, since so much that is beautiful and enlightening is cut off from most of the world.

"Thus it is proper to the role of the scientist that he not merely find new truth and communicate it to his fellows, but that he teach, that he try to bring the most honest and intelligible account of new knowledge to all who will try to learn.

"This is one reason—it is the decisive organic reason—why scientists belong in universities. It is one reason why the patronage of science by and through universities is its most proper form; for it is here, in teaching, in the association of scholars, and in the friendships of teachers and taught, of men who by profession must themselves be both teachers and taught, that the narrowness of scientific life can best be mod-

erated, and that the analogies, insights and harmonies of scientific discovery can find their way into the wider life of man."

Dr. Oppenheimer stated that much is asked of the scholar and the artist in a world where "we cannot close our minds to discovery, we cannot stop our ears so that the voices of far off and strange people can no longer reach them."

This is not a new problem, he said, since "there has always been more to know than one man could know."

However, he stated, "never before today has the diversity, the complexity, the richness so clearly defied hierarchical order and simplification, never before have we had to understand the complementary, mutually not compatible ways of life, and recognize choice between them as the only course of freedom.

"This is a world in which each of us, knowing his limitations, knowing the evils of superficiality and the terrors of fatigue, will have to cling to what is close to him, to what he knows, to what he can do, to his friends and his tradition and his love, lest he be dissolved in a universal confusion and know nothing and love nothing."

Today there are no grounds for "hallowing our ignorance," Dr. Oppenheimer said, and there can be no sanction for insensitivity or indifference.

"If we must live with a perpetual sense that the world and the men in it are greater than we and too much for us, let it be the measure of our virtue that we know this and seek no comfort.

"Above all let us not proclaim that the limits of our powers correspond to some special wisdom in our choice of life, or learning or of beauty," he said.

"This cannot be an easy life," he concluded.

"We shall have a rugged time of it, to keep our minds open and to keep them deep, to keep our sense of beauty and our ability to make it, and our occasional ability to see it in places remote and strange and unfamiliar; we shall have a rugged time of it, all of us, in keeping these gardens in our villages, in keeping open the manifold, intricate, casual paths, to keep these flourishing in a great open windy world; but this, as I see it, is the condition of man; and in this condition we can help, because we can love, one another."

(Complete text of Dr. Oppenheimer's speech appears in the January issue of Chemistry, another Science Service publication. Send 50¢ to Science Service, 1719 N Street, N.W., Washington 6, D. C.)

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• RADIO

Saturday, January 22, 1955, 5:00-5:15 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Daniel I. Arnon, of the University of California department of plant nutrition, will discuss "Photosynthesis."

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Security Program Used By "Ruthless Men"

► "RUTHLESS, AMBITIOUS men" are using the Government's security program for political purposes, Dr. Vannevar Bush, president of the Carnegie Institution of Washington, told the meeting of the American Association for the Advancement of Science in Berkeley, Calif.

The present crisis, he said, is not the first in human affairs. Its outcome will depend on how "we react under almost intolerable strain."

In this country, the test is "whether we can truly maintain our freedoms and guard our way of life against threats from without, against subversion within, and against our own errors and aberrations.

"Our recent performance," in this regard, Dr. Bush said, "is not encouraging."

Freedom is a "great asset" if it is kept unimpaired, he stated. It ensures that the whole course of government, our relations with other countries, our military policy, will "undergo the full scrutiny of uncoerced public opinion," extending even to minor matters.

"This great advantage of freedom to dissent makes the country genuinely strong in many ways. It must not be lost," Dr. Bush urged.

The most important objective of the enemy, Dr. Bush said, is to spread confusion and distrust among us. In this purpose he has been most successful and is more successful today than ever before.

"We have," Dr. Bush said, "a system for the clearance of persons to do secret work, which seems almost calculated to destroy their reputations by innuendo and charges based on spite.

"We have adopted a principle, abhorrent to our own best tradition, of establishing guilt on the basis of simple association. We have men who contributed much to the war effort now placed in jeopardy because of the expression of unpopular opinions.

"We have useful men denied the opportunity to contribute to our scientific efforts because of their youthful indiscretions.

"Worst of all, we have the evil practice of ruthless, ambitious men, who use our loyalty procedures for political purposes.

"Suspicion and distrust are rampant in the land.

"We are on the verge of abandoning some of our most treasured freedoms; we have nearly lost our greatest advantage over the enemy in the current struggle—our mutual regard and trust as a people."

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