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The Support of Science

The results of the massive support of biomedical science during the past 20 years have exceeded even the most optimistic predictions. No one imagined that we would acquire so quickly the firm grasp we have today of the basic designs of cellular chemistry and its regulation. The nature of heredity, clouded in abstract genetic language only 20 years ago, can now be described in explicit chemical terms. In the next 20 years application of chemistry of genes could transform the image of health and disease as dramatically as any advance in the history of medicine.

Nevertheless, those of us who do research in medical science and train young people for such work have witnessed in recent weeks the most calamitous decision a government of the United States could make for the future of medicine and the welfare of our country. Were there an intentional effort to undermine the health and economic welfare of this country for the coming generations, I could imagine nothing more devastating than to stop training our best young people to do research in basic medical science. Yet this is precisely what has been done, and the consequences of the decision have not been foreseen.

In my scientific lifetime I have seen a very low tide of science support during the 1930's before World War II. Then there followed a strong high tide for 20 years after that. For the past 5 years, the support of science has been visibly ebbing. Funds for important research have been cut at a time when inflation and advanced technology require increases; the support for the training of our best young scientists has been abruptly eliminated. This support for research and training cannot be finely regulated. When the flow of science support is turned down, the stream of progress dries up and cannot be restored for years.

Surely the decision cannot be ascribed to economy. The science training programs cost about $300 million annually. This is less than one-half of 1 percent of the budget for welfare or for defense. For weapons research and development alone, $20 billion a year is being spent. This is to protect us against the *possibility* of attack by a hostile country. But now we have been told we can't afford to spend even 1 percent of this amount to train young people to fight diseases for which crusades have been proclaimed and that we know for *certain* will kill millions of our citizens each year.

Although in the past 20 years some scientists were influential in advising the government, the major forces in urging the support of science came from the Congress and citizens testifying before its committees. The support of science, so absolutely vital to our future, has been and must remain the responsibility of society. It is too important and too complex a problem to be left to scientists.

There are two compelling reasons why society must support basic science. One is substantial: The theoretical physics of yesterday is the nuclear defense of today; the obscure synthetic chemistry of yesterday is curing disease today. The other reason is cultural. The essence of our civilization is to explore and analyze the nature of man and his surroundings. As proclaimed in the Bible in the Book of Proverbs: "Where there is no vision, the people perish."

America's strength is not in mineral resources, in hydroelectric power, or in agriculture. It is not in the accumulation of a huge weapons arsenal either. America's strength is in the moral and intellectual resources of the people.—ARTHUR KORNBERG, *Department of Biochemistry, Stanford University Medical Center, Stanford, California, 94305*

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