

GENERAL SCIENCE

# Research Agency Planned

OSRD responds to request of President Roosevelt by urging new National Research Foundation to aid research and scholarships for potential scientists.

*On November 17, 1944, President Franklin D. Roosevelt wrote to Dr. Vannevar Bush, director of the Office of Scientific Research and Development, requesting recommendations on four points. The first had to do with the release of results of scientific research made during wartime. The second referred to organization of a program for continuing the war against disease. The third dealt with possible government aid to the research of public and private organizations. And the fourth was concerned with a program for discovering and developing scientific talent in American youth "so that the continuing future of scientific research in this country may be assured."*

*The following is a summary of the report containing the requested recommendations. Dr. Bush was aided by four committees headed respectively by Dr. W. W. Palmer, Columbia University; Dr. Isaiah Bowman, Johns Hopkins University; Henry Allen Moe, Guggenheim Memorial Foundation; and Dr. Irvin Stewart, National Research Council.*

## By DR. VANNEVAR BUSH

Director, Office of Scientific Research and Development

➤ PROGRESS in the war against disease depends upon a flow of new scientific knowledge. New products, new industries, and more jobs require continuous additions to knowledge of the laws of nature, and the application of that knowledge to practical purposes. Similarly, our defense against aggression demands new knowledge so that we can develop new and improved weapons. This essential, new knowledge can be obtained only through basic scientific research.

Science can be effective in the national welfare only as a member of a team, whether the conditions be peace or war. But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world.

### For War Against Disease

We have taken great strides in the war against disease. The death rate for all diseases in the Army, including overseas forces, has been reduced from 14.1 per thousand in the last war to 0.6 per thousand in this war. In the last 40 years life expectancy has increased from 49 to 65 years, largely as a consequence of the reduction in the death rates of infants and

children. But we are far from the goal. The annual deaths from one or two diseases far exceed the total number of American lives lost in battle during this war. A large fraction of these deaths in our civilian population cut short the useful lives of our citizens. Approximately 7,000,000 persons in the United States are mentally ill and their care costs the public over \$175,000,000 a year. Clearly much illness remains for which adequate means of prevention and cure are not yet known.

The responsibility for basic research in medicine and the underlying sciences, so essential to progress in the war against disease, falls primarily upon the medical schools and universities. Yet we find that the traditional sources of support for medical research in the medical schools and universities, largely endowment income, foundation grants, and private donations, are diminishing and there is no immediate prospect of a change in this trend. Meanwhile, the cost of medical research has been rising. If we are to maintain the progress in medicine which has marked the last 25 years, the Government should extend financial support to basic medical research in the medical schools and in universities.

### For Our National Security

The bitter and dangerous battle against the U-boat was a battle of scientific techniques—and our margin of success was dangerously small. The new eyes which radar has supplied can sometimes be blinded by new scientific developments. V-2 was countered only by capture of the launching sites.

We cannot again rely on our allies to hold off the enemy while we struggle to catch up. There must be more—and more adequate—military research in peacetime. It is essential that the civilian scientists continue in peacetime some portion of those contributions to national security which they have made so effectively during the war. This can best be done through a civilian-controlled organization with close liaison with the Army and Navy, but with funds direct from Congress, and the clear power to initiate military research which will sup-



**NOT THE MOON!**—*This is the eighty-five percent eclipsed sun as it rose over a ridge of the east Rocky Mountains near Butte, Montana, on July 9. This picture was taken with a ten-foot camera. Photograph from Peter A. Leavens and George V. Plachy, New York Amateur Astronomers' Association-Sperry Gyroscope Company expedition.*

plement and strengthen that carried on directly under the control of the Army and Navy.

### And for Public Welfare

One of our hopes is that after the war there will be full employment. To reach that goal the full creative and productive energies of the American people must be released. To create more jobs we must make new and better and cheaper products. We want plenty of new, vigorous enterprises. But new products and processes are not born full-grown. They are founded on new principles and new conceptions which in turn result from basic scientific research. Basic scientific research is scientific capital. Moreover, we cannot any longer depend upon Europe as a major source of this scientific capital. Clearly, more and better scientific research is one essential to the achievement of our goal of full employment.

How do we increase this scientific capital? First, we must have plenty of men and women trained in science, for upon them depends both the creation of new knowledge and its application to practical purposes. Second, we must strengthen the centers of basic research which are principally the colleges, uni-