

GENERAL SCIENCE

# Civilization Won't Smash

## Scientists Believe Civilization Is Able to Survive Despite Setbacks of War That May Be Very Serious

*As war's area spreads, and with it the killing and exile of scientific and intellectual leaders, the destruction of universities, libraries and laboratories, and the suspension of research and investigation in the countries locked in the death-struggle, the question arises again, louder and more insistent than ever: Can civilization survive a world war?*

*Science Service has put that question to a number of America's leading scientists, in widely diverse fields. Their answers are optimistic, although they recognize that war causes serious setbacks to civilization and science.*

### Man Will Think Way Out

By DR. CHARLES F. KETTERING

President, General Motors  
Research Corporation

**I** DON'T believe for one minute that everything we have gained in thousands of years of experience can be wiped out in one disaster. Man has used his ability to think to create the present situation. He has not lost this accomplishment and will, as a matter of course, think himself out.

We are living in a changing world. Right now we are suffering because somewhere in the past changes were not made when they occurred. We have had setbacks in progress in the past and come up stronger than ever. The fundamental forces which bring positive changes are still at work. They will overcome all temporary obstacles in the end.

*Science News Letter, January 20, 1940*

### Spiritual Rebound Likely

By DR. ALES HRDLICKA

Curator of Physical Anthropology,  
U. S. National Museum

**I**F BY "civilization" we mean the cultural status of a people—or of the peoples that will eventually be involved in or affected by the war—then it would be safe to say, I think, that there will be more or less of a loss, and retardation for some time to come. But civilization at large, or even that of the most affected country, cannot be destroyed, nor even largely and permanently affected.

Civilization by now has become the spiritual blood of vast portions of humankind, without which it cannot live. Depression, yes, but not destruction. And when eventually the skies clear again, there may well be expected a spiritual rebound that will compensate for the losses.

Only if the "material-might-is-right" powers should prevail, would conditions become depressed for a long time to come, and civilization during that time would lag; but even then a collapse would be impossible.

*Science News Letter, January 20, 1940*

### War Is Supreme Folly

By DR. ANTON J. CARLSON

Professor of Physiology,  
The University of Chicago

**I**N MY judgment, "civilization" will receive a serious setback but will survive another world war.

In this answer, I assume a world war as extensive and destructive as that of 1914-18. The serious consequences of a so-called world war are not the destruction of property or the destruction or maiming of human beings but rather the brutalizing of the people who are left to carry on when the war is ended.

In other words, the most serious setback to our civilization by war is in the realm of the spirit, our conceptions of liberty, justice, and fair play. But even these will survive and sprout again. So I am not at all pessimistic, despite my conviction that war is a supreme manifestation of human folly.

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### Role of U. S. Vital

By DR. FRANZ BOAS

Emeritus Professor of Anthropology,  
Columbia University

**T**HE SURVIVAL of civilization after the European war will depend largely upon the energy with which the people of the United States will uphold the principles of freedom of the mind which are the basis of life in our Republic.

Unavoidably war brings with it suppression of freedom of action, and of the free expression of thought, which are recovered with difficulty when peace is secured. Therefore we must not become involved in the war. We must not allow ourselves to become infected by the hatreds based on outworn prejudices that have been rekindled for their own selfish ends by the dictators of Europe.

The most serious task of our country will be to use the full might of its influence to see to it that in the final settlement a basis will be laid for a permanent peace, that no retaliation against any nation shall be permitted, so that victors and vanquished may be able to rebuild what is now being wantonly destroyed by the irresponsible actions of overweening dictators.

*Science News Letter, January 20, 1940*

### Diffusion Insures Survival

By DR. WILLIAM E. RITTER

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University of California  
Honorary President of Science Service

**T**HE complete destruction of "civilization" seems impossible now that it is so advanced over the whole earth and to so large a portion of the human species. Ancient civilizations like the Babylonian, Grecian, and Mayan for example, were so restricted anthropologically and geographically, that their destruction could occur with comparatively little influence from or upon the rest of the world.

But the contributions made by them to the civilization of the species as a whole, and the enormous later contributions by many other peoples and in the same direction, would seem to insure civilization against complete destruction by any agency less than one that would destroy the earth with all life or at least make it uninhabitable by any of the higher kinds of life.

My considerable effort to understand numerous species of animals, the human species with the rest, has given me indications and a strong faith that such experiences as the first and now the second military world war and the intervening economic-political world war may go far toward inducing many persons to join in the desire expressed by E. W. Scripps for more understanding of the *kind* of animal man is.

Let us start with an epitomized partial answer to Scripps' persistent question. Man, for one thing, is certainly an animal that typically desires the respect, the good will, and the honor of his fellow men; also he desires his own self respect, self good will, and self honor.

An important early step toward such understanding is to recall that many centuries ago one great people, at least (the Greeks), became aware of the importance of men's understanding themselves as shown by their injunction "know thyself"; and that one of them in particular, Aristotle, saw that the carrying out of this injunction leads to the perception that man's similarities to the other animals means that he himself is in very truth an animal (zoön) and is expressly characterizable as a social and a political animal, in the very sense that the honey bee, many birds and quadrupeds are social animals. Then from Aristotle's other utterances that have come down to us the inference is clear that he conceived man as an art and language producing animal, and finally an ethical animal.

In a word, this Greek conceived man as a *civilization producing animal*, civilization including all that we moderns like to attribute to civilization. Then by understanding himself today in the light of the vast knowledge of himself and nature generally our species has accumulated since the Grecian period, we come to understand that our every act of word or deed, of industrial or esthetic art, of science or philosophy, of familial or state government, and of morals or religion—all that goes to the making of civilization—we do by means of those portions of our corporal equipment that makes us superior to any of the other animals.

Hence it is that such understanding makes us aware that our desire to be respected and honored by our fellowmen and by ourselves, is conditioned on our making our acts produced by those parts of our structural equipment in which we are superior to any of the other animals, correspond in very truth with the structural superiority of those parts.

We can have the respect to which we are entitled from our fellow humans, as compared with their respect for other animals, only in so far as our acts are thoroughly human and not more or less *subhuman*. A more penetrating statement of this may be given thus: Any person whose understanding of himself includes the information that he is so endowed by nature as to make him a kind of animal capable of producing civilization, but who nevertheless uses his endowments injuriously to civilization, must be aware

that he thus degrades himself to the level of other animals the actions of which are injurious to civilization.

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## Social System Will Persist

By DR. CHARLES B. DAVENPORT

Research Associate,  
Carnegie Institution of Washington

**W**HAT is civilization? If it is a condition above that primitiveness found in backwoods people who have no writing, no system of public instruction, and make no or little use of the newest inventions based on the advancement of science, then I think civilization will survive another World War.

If it is the particular system of social organization existing in western Europe and the Americas, sometimes called the capitalist system, then I think that, just as in the last World War that system was for the time being destroyed in Russia, so in consequence of a new World War, the capitalist system may be further replaced by some other, just through the upsurge of the "masses" in consequence of the greater power given to them by the State when it is *in extremis*.

However, in time, though it may be centuries, a social system based on the vast differences in human capacity for playing a part in any social order is bound to arise again, because in the long run biological fact, if ideology is not based on it, will determine the end result.

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## Need Willingness to Fight

By DR. KNIGHT DUNLAP

Professor of Psychology,  
University of California at Los Angeles

**I**N surveying the problem of war, its causes and consequences, the psychologist employs the historical-comparative method of social psychology. Historical, because social events are as subject to law as are physical events, and only by studying past conditions and results can we understand the present and predict the future. Comparative, because the forms of social organization which have reduced fighting between individuals, between family groups, and between various sub-groups within the nation, are the only forces available for the eventual abolition of war.

In surveying the present problem, the psychologist notes that it is not an abstract question of war *per se*, but a ques-

tion of alternatives (war or else?); that civilization is primarily a matter of ideals and ideas; and that peace is never promoted by refusal to fight for civilized ideals.

Proceeding on these principles, we can safely conclude (from data not capable of brief presentation), that the present war can destroy civilization only if there is lack of force to defend it; or if civilized nations abandon the principle of civilization, adopting the anti-social attitude of selfish fear.

If the Allies win this war, however economically exhausted they may be, civilization is saved. The lessons learned from the neglect to enforce the treaty of



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Versailles when enforcement was possible; from organized propaganda for "pacifism" based on an appeal to cowardice; and from our experiment in "neutrality", which has been, through the ages, the best guarantee of war, will probably not be forgotten. If, however, victory is not made a basis for the application, to international relations, of the principles which have successfully reduced conflict within nations, the work will have to be done over.

Among these principles are: 1. However much we deplore war, war is a duty

when civilized social organization needs to be defended; and saving one's neck at whatever cost is anti-social. 2. That civilized social organization involves cooperation to defend victims of anti-social aggression, whether the victims are persons in the house next door, or other national groups. 3. That anti-social behavior, refusing to uphold justice for others, eventually destroys the nations practicing it. 4. That refusing to fight for principles lest one be hurt is a foolish form of cowardice.

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to turbulent air flow over a wing was so delayed as to reduce . . . basic air resistance by approximately two-thirds.

"So far the application (of this achievement) is limited to small airplanes, but there are indications of its ultimate applicability to larger airplanes through continued research."

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#### ENGINEERING

### Latest English Lifeboat Is Propelled by Pumps

**L**IFEBOATS have been needed all too often in recent months thanks to the war at sea. Latest lifeboat news out of England, post war, concerns a new surf-type, motor lifeboat propelled by pumps instead of propellers. The pumps used are similar in design to those extensively employed for circulating water in naval vessels and power stations. Two such pumps, one on each side of the boat, are operated by engines. Discharge of the water from the pumps below the waterline propels the boat.

The stream of high velocity water can be directed to any point of the compass by turning a wheel which controls a deflecting nozzle, thus making steering easy. By turning the jets either directly toward or directly away from each other, the boat can be held stationary. By turning both jets outboard, the boat is held against another vessel or wharf without tying up. Striking advantage is that a pump-propelled boat drives through a head sea and over shoals or obstructions in a very remarkable manner.

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Several television telephone stations have been opened in Germany for "visible" calls in Berlin or from Berlin to Munich, Nuremberg and Leipzig.

#### AERONAUTICS

## Engine Research Laboratory Urged by N.A.C.A.

### Committee Calls Move "Of Utmost Importance" for Development of Aviation and for Defense Program

**C**ONSTRUCTION of a national airplane engine research laboratory is urgently recommended in the 25th annual report of the National Advisory Committee for Aeronautics.

Through a sub-committee, whose chairman was Col. Charles A. Lindbergh, it is found "that there is a serious lack of engine research facilities in the United States, and that it is of the utmost importance for the development of aviation in general, and for our defense program in particular, to take immediate steps to remedy this deficiency."

Emphasizing this suggestion, the N.A.C.A., through its new chairman, Dr. Vannevar Bush, president of Carnegie Institution of Washington, continued: "The reason for foreign leadership in certain important types of military aircraft is due in part to the superiority of foreign liquid-cooled engines. At the present time, American facilities for research on aircraft power plants are inadequate and cannot be compared with

the facilities for research in other major fields of aviation."

While the N.A.C.A. did not cite specific examples of foreign planes in the "leadership" class it is believed that Messerschmidt fighters, Heinkel pursuit-fighters and Junkers and Heinkel bombers—all of which are powered with liquid-cooled engines—would be typical planes of the class to which the committee referred.

Aircraft design and research will ultimately replace the Atlantic and Pacific Oceans as the best bulwark for the defense of the United States, the N.A.C.A. reported. Pointing out that the nation is most fortunately situated between two great oceans, the report adds:

"However, as advances in aeronautical science result in increased range of aircraft the significance of these oceans will gradually diminish and superiority in aircraft design will become more and more essential to our national safety."

Most significant event of the year, for the future of American aviation, was the authorization of a second major research laboratory to be established at Moffett Field, California, some 38 miles south of San Francisco.

Further details of what has become known as the "500-mile-an-hour wing" for airplanes was also disclosed in the new report of the N.A.C.A.

Research scientists at the Langley Field, Va., laboratory have discovered "a new principle of wing design in which the transition from smooth (laminar) flow

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