

Aid To War-Stricken Scientific Libraries

By FRITZ ZWICKY*

THE WORLD of today is in a state of disorder which is in conspicuous contrast to the avowed purposes of man. It is not intended in this article to analyze the reasons for this sad state of affairs. It may merely be stated as a personal opinion that the teachings of science, of education, and of religion seem to have become lost in an elaborate system of hypocrisy in which there is little relation between words and actions. Assuming that a deeper analysis will bear out this view, some simple directives suggest themselves for the purpose of making actions measure up to professed convictions. These directives, which concern both the community and the individual, obviously constitute a vast problem, the solution of which might profitably be attempted in a series of successive approximations. These approximations should be considered as limited and flexible temporary objectives.

One of the objectives which in particular is of interest to men of science concerns itself with the establishment of closer international and national scientific human relations. On the basis of the views expressed above, it is mostly actions which are lacking, rather than words. It does not appear difficult to name many fields of action which may strengthen mutual confidence and thus pave the way to peace.

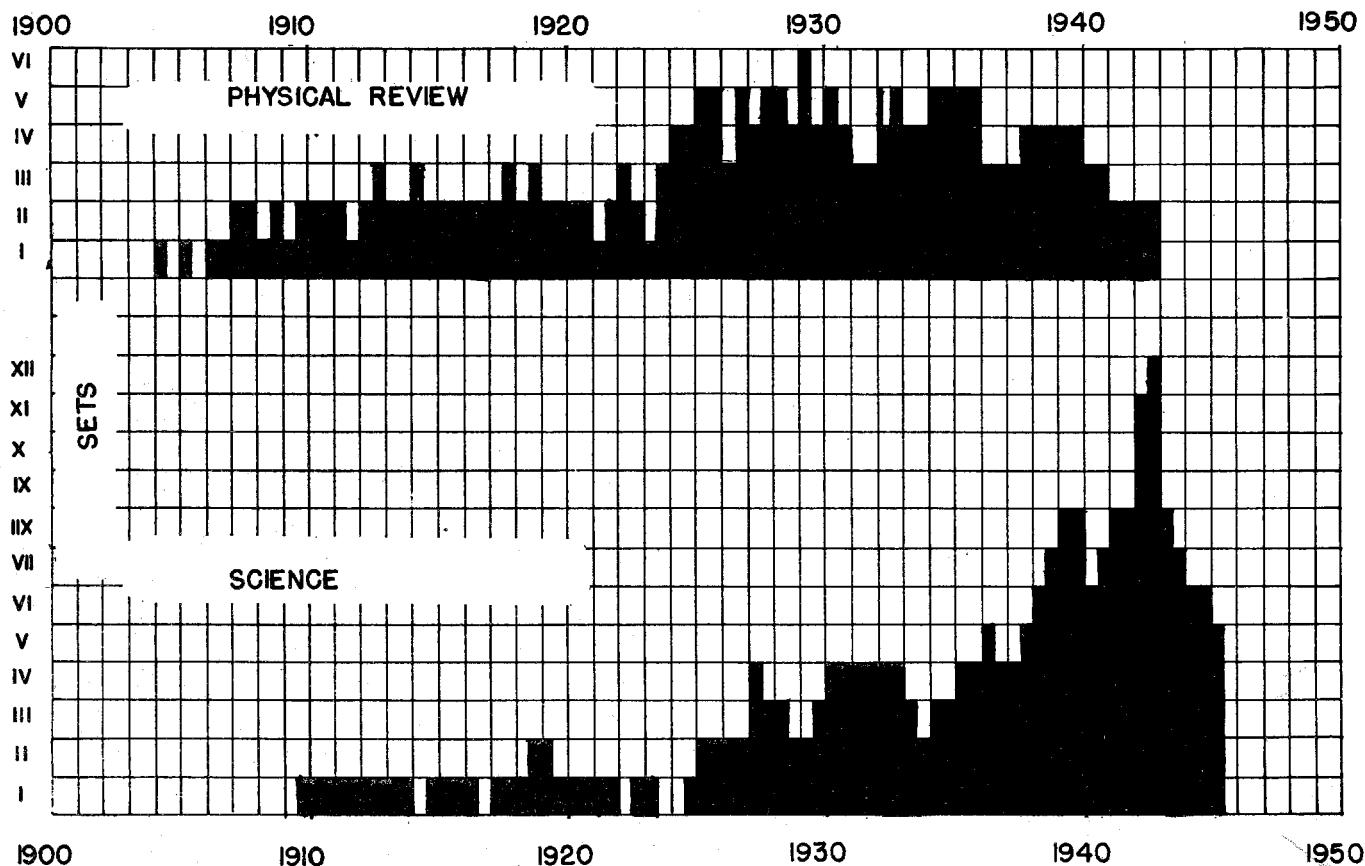
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For instance, an analysis of the needs of war-stricken countries in matters scientific and technical shows the necessity for the following primary prerequisites:

The collection and the free delivery of

- a) Scientific journals and books.
- b) Elementary and advanced scientific instruments.
- c) Small work shop tools.
- d) Some scientific and technical test equipment, such as wind tunnels and testing machines, derived from Germany and Japan.
- e) Chemicals and other working materials.
- f) Aid in instruction.

A common supposition is that activities of this kind require for their successful realization large organizations and considerable funds. This supposition is, however, not necessarily correct. In fact, both democratic life within a national and international cooperation are badly in need of more initiative on the part of every individual as such. In order to test the practicability of this idea I have made an attempt, during the past few years, to tackle first the easiest of the tasks listed above; namely, the collection of scientific journals and books without recourse to any funds except for a few dollars for wrapping paper, a card index, and some expenses for driving a car



for the purpose of collecting the material. This attempt has so far netted a very fine collection of some ten thousand complete volumes of scientific journals and books. This collection contains the *Physical Review*, the *Astrophysical Journal*, the *Journal of the American Chemical Society*, the *Proceedings of the National Academy of Sciences*, *Science*, the *Scientific Monthly*, *Fortune*, *Life*, and many other journals too numerous to mention. To give some idea of the extent of the collection, I refer to the two graphs for the *Physical Review* and *Science*. The distribution over the years from 1900 to 1946 is shown, each shaded rectangle representing one complete volume or set of volumes for the year indicated on the abscissa. In the case of the *Physical Review*, one shaded rectangle may correspond to as many as four volumes (year of 1932). This amounts to a total of 230 volumes of the *Physical Review* and to 221 volumes of the *Scientific Monthly*. In addition, a great number of single issues is at hand, which, as new material comes in, rapidly contributes toward the accumulation of more complete volumes.

Most of the material was freely contributed by many of my colleagues at the California Institute of Technology and the Mt. Wilson Observatory, to whom sincere thanks are due for their generosity. A small fraction of the collection has been obtained from various sources, both private and institutional, in Pasadena, Los Angeles, and surrounding communities.

The material, after being solicited and hauled in, is sorted, registered, packed, and stored away in some of the basements of the California Institute. This work requires very concentrated effort of considerable extent. Many friends have lent a big hand in this job, and have perhaps contributed more toward the cause of true international understanding than many of the persons who are in the limelight of radio and press on international matters. To these friends is addressed a passage in a letter received from the Chinese Minister of Education, Dr. Chu Chia-hua, in which he says "Your friendly movement, I am convinced, will be deep-rooted in the heart of the Chinese intellectual circles."

Although it would take more than this article to mention by name all of those who have helped, thanks are particularly due to Mr. Ernest W. Rosischon and to Professor Hardin Craig, who have spent much time and effort as vice-chairmen of the committee. A number of ladies from the Huntington Library and some of our students have worked long and hard on the collection. Initial effective assistance was given me by Mrs. F. B. Badgley and Mr. Paul K. Richter of Pasadena, to whom deep gratitude is due for their unselfish efforts. Thanks are due to the authorities of the California Institute of Technology for the working and storage space which they have generously provided.

It is hoped that the collection can be sufficiently rounded off by 1947 and then shipped to the most needy. To whom? The choice should not be difficult. China, in its long fight for the cause of freedom, has suffered very extensive damage which must be repaired. There is Poland, which threw itself first against the Nazi tide, and there is Greece. In the darkest hour of the war when France was beaten, England at its lowest strength, and the Soviet Union, in partnership with Hitler, had invaded the Baltic States, Poland and Finland, and the United States still was isolationist, Greece, with no hope, preferred to fight to the end, rather than surrender. And there

are more if we still have anything left to give.

Two important conclusions can be drawn from the results of the project sketched in this article.

1) It has clearly been demonstrated that enough men and women of good will can be found to make any project of genuine international character a success provided that such a project is pushed with determination. Availability of money is not a prerequisite to success. Neither is it necessary to create any large organization.

2) Through efforts of the type described, the ties of confidence between men and women of different nations and races can be strengthened to a degree superior to the effects which can be achieved by mere speech making, legislation and other methods of theorizing.

It is therefore suggested that many people, including scientists, might profitably abandon some of their high-sounding, but often empty efforts at international cooperation and use their imagination to bring about such cooperation through individual projects of a more constructive nature.

C. I. T. NEWS

LAST UNDERGRADUATE C. I. T. SUMMER SESSION NOW IN PROGRESS

THE C.I.T. Summer Session, now halfway through its course, marks the end of year-round undergraduate courses. Of the almost 800 students enrolled, one-half are undergraduates taking second semester work at all levels. The second largest group is the graduate students, comprising 30 per cent of those enrolled at the Institute. Refresher courses in mathematics and physics have attracted 12 per cent of the students here this summer, most of them preparing for the examinations for admission to upper classes. These are non-credit courses, given on the freshman and sophomore college levels. The others are classified as special CE, ME, and Ae students, taking work also of a refresher type.

The fall semester, with registration scheduled for October 4 to 7, will see the return of the three term system, discontinued when the Navy V-12 courses dominated the undergraduate enrollment from July, 1943 until June, 1946.

ARMED FORCES PERSONNEL TAKING GRADUATE WORK

FOUR GROUPS of military and naval personnel will be stationed at C.I.T. taking work leading to M.S. and professional degrees at the start of the fall semester in October. Already here are three army groups made up of air force, ground and service forces, and engineer corps officers. These men, captains, majors, and lieutenant colonels, have technical backgrounds, two-thirds of them being graduates of the United States Military Academy. Present army policy indicates that possibly a few men will be selected upon completion of their course for further instruction and research leading to the Ph.D. degree.