

GENERAL SCIENCE

Science Must Heal Wounds Made by Applied Science

Dr. John Dewey At Dinner Honoring Dr. Cattell Urges Science Extension as Supreme Intellectual Obligation

By Dr. JOHN DEWEY, Professor Emeritus of Philosophy, Columbia University.

EDITOR'S NOTE: Several hundred friends of Dr. J. McKeen Cattell, the psychologist, president of Science Service, and editor of *Science*, *Scientific Monthly*, etc. tendered him a dinner of honor during the Boston meeting of the American Association for the Advancement of Science.

The following are excerpts from Dr. Dewey's address on that occasion.

THE SCIENTIFIC worker faces a dilemma. The nature of his calling necessitates a very considerable remoteness from immediate social activities and interests. It is absorbing in its demands upon time, energy and thought. As men were told to enter their closets to pray, so the scientific man has to enter the relative seclusion of the laboratory, museum and study. He has, as it is, more than enough distractions to contend with, especially if, as so often happens, he is also a teacher and has administrative and committee duties. Moreover, the field of knowledge cannot be attacked en masse. It must be broken up into problems; and as a rule, detailed aspects and phases of these problems must be discriminated into still lesser elements. A certain degree of specialization is a necessity of scientific advance. With every increase of specialization, remoteness from common and public affairs also increases. Division of labor is as much a necessity of investigation into the secrets of nature and of man as it is of industry.

"Unknown Tongue"

Nor does aloofness reach an end at this point. The language in use for common communication does not fit the statement of scientific inquiries and results. It was developed for other purposes than that of accurate and precise exposition of science, and is totally unfitted to set forth comprehensive generalizations in exact form. The result is that the scientist speaks what for the mass of men is an unknown tongue, one which requires much more training

to acquire than any living speech or than any dead language. He can speak about his own direct affairs and problems only to a comparatively small circle of the initiated.

These considerations form and define one horn of the dilemma. The other horn is constituted by the fact that the scientist lives in the same world with others, and that world is being made over by the fruits of his labors. There is hardly a single detail of our common and collective life, whether in transportation of persons and goods, in modes of communication, in household appliances and conveniences, or in agriculture and all the varied forms of productive industry, that is not what it is today because of what science has discovered. The scientist may be aloof in his work and language. The results of his work pervade and permeate, they determine, every aspect of social life. The inventor, the engineer and the business man are unremittently occupied with translating what is discovered in the laboratory into applications of utensil, device, tool and machine, which have largely revolutionized the conduct of life in the home, the farm, and in amusements as well as in industry. . . .

Science Restrained

It is a commonplace that mankind in advanced industrial countries and especially in the United States confronts the paradox of want in the midst of plenty. It is science, which through technological applications has produced the potentiality of plenty, of ease and security, for all, while lagging legal and political institutions, unaffected as yet by any advance of science into their domain, explain the want, insecurity and suffering that are the other term of the paradox. . . .

The demands of the situation cannot be met, as some reactionaries urge, by going backward in science, by putting restrictions upon its productive activities. They cannot be met by putting a gloss of humanistic culture over the brute realities of the situation. They can



WINNER OF \$1,000

Prof. Reuben L. Kahn of the University of Michigan who won the \$1,000 prize for a notable paper delivered before the American Association for the Advancement of Science in Boston. Prof. Kahn's paper, describing his discovery of the fact that when an animal is immunized its body tissues acquire protective properties as well as the blood, was reported in last week's *Science News Letter* (Jan. 6, '34, p. 3).

be met only by human activity exercised in humane directions. The wounds made by applications of science can be healed only by a further extension of applications of knowledge and intelligence, and like the purpose of all modern healing the application must be preventive as well as curative. This is the supreme obligation of intellectual activity at the present time. The consequences of science in life impose a corresponding obligation. . . .

There probably was never a time in the history of the world when power to think with respect to the conduct of social affairs and the remaking of traditional institutions was as important as it is in our own country today. There is an immense amount of knowledge available, knowledge economic, historical, psychological, as well as physical. The chief difficulty lies not in lack of information that might be brought to bear, experimentally, upon our problems. It lies on the one hand in the fact that this knowledge is laid away in cold-storage for safe-keeping; and on the other hand, in the fact that the public is not habituated to a desire for the knowledge nor to be—(Turn to Page 30)