# Comments and Communications

## Language in Science

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Until a very recent stage of man's history the search for knowledge was in the hands of a priesthood who guarded most carefully their privileged position. Often the power of this priesthood lay in the ignorance and superstition of those without the order. By the use of language unknown to most people they prevented knowledge from passing to the outsider.

After the Renaissance, English came to be used as the language of science and religion in this country, and knowledge was put within the reach of many more people. But today the growing complexities of science are causing a change in the reverse direction. In medicine, for example, each branch is building up a special and ever increasing vocabulary, and this is producing a new series of priesthoods—the hematologists, the venereologists, the stereochemists, the biophysicists, the cytologists, the pure and applied mathematicians, the epidemiologists. The subdivisions of knowledge will lose much of their value unless the results of applying their special techniques are intelligible to others besides the various high priests.

Of late years books have been written to try to pass on the secrets of the new priesthoods, and these "popular" books show one way in which the problem has been tackled. Another possible solution appeared in the services during the late war. This was a slang which covered both everyday and technical subjects; it was a live method which filled a gap. These examples illustrate two principles which could be used to prevent even greater chaos than at present: either language can be simplified or a new language can be evolved.

Ogden with Basic English has shown how speech can be simplified, and Hogben has suggested an international language of science with his *Interglossa*. Yet another, Bodmer, in *The Loom of Language* (p. 48) has emphasised the keynote: "The invention of the alphabet made it possible to democratize reading as the invention of the number 0 made it possible to democratize the art of calculation." An alphabet or a Basic English for science and medicine is a pressing need.

The realisation of this aim is not easy, but every editor of a journal can help by insisting on papers being written in the simplest possible language, and frowning upon new words which could easily be rendered in simple terms; every author can help by writing in simple language. It is asking too much to expect that specialised techniques can be so described that their features are at once understood by a worker in an unrelated field, but it is not asking too much to insist that the main lines of argument in a paper should be presented with consideration for the difficulty of a worker in another field.

Unless steps such as these are taken now by editors and edited, scientific and medical workers will soon be struggling in a bog of words. This is a system of planning which requires no committee, and the benefit to knowledge would be incalculable. The pedant has always been a butt for the wit. Now is the time to banish him firmly from the various branches of knowledge.

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## Anthropologists vs. the Atom Bomb

In his recently published *The Science of Culture* (p. xii), Prof. Leslie A. White refers to certain comments by E. U. Condon published in these columns (*Science*, 1946, **103**, 415) and also to a letter of mine in this journal (*Science*, 1946, **103**, 570) in which I told of a resolution proposed by myself and seconded by Margaret Mead, and adopted by the American Anthropological Association in December 1945, pledging anthropologists to work with other scientists to make "appropriate social inventions" to "guard against the dangers . . . inherent in atomic use." Prof. White comments on this, "No report on progress toward such inventions has appeared yet."

This is not quite correct. Early in 1946 I commenced to make use of several social inventions directed toward achieving the end set out in the resolution. By October 1946 this resulted in an animated sound film which has been distributed under the title "One World Or None." I understand that this film has been seen by hundreds of thousands of persons and in every state of the union. It has been described by a well-known bureau of propaganda analysis as "the most effective documentary ever made," and the film may be obtained from the National Committee on Atomic Information, Washington, D. C.

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## Correction

We wish to correct an obvious error in our paper, "The Crystalline Form of Sodium Ascorbate" (Science 1948, **108**, 713).

On page 713 the sentence at the top of the second column should read:

> Forty grams (1 mole) of ascorbic acid was dissolved in 600 cc of hot absolute methyl alcohol. While still hot, it was treated under stirring with 250 cc of a warm solution of methyl alcohol containing 12.3 g (1 mole) of sodium methylate.

The structure of sodium ascorbate as given by the U.S.P. (XIII, p. 898) was shown in our paper with the sodium substituting the acidic hydrogen of the carboxyl

group, but we stated that it is commonly believed that the neutralization involves the hydroxyl group attached to the third carbon. We should also have added that with neutralization of this enolic hydroxyl group by sodium, the lactone ring of the ascorbic acid remains unbroken unless excess of sodium is added. The values found for carbon, hydrogen and sodium in the analysis of our sodium ascorbate are in agreement with the theoretical values calculated for the sodium lactone salt.

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## In Defense of the USDA Research Administration

Although parts of the curious paper by W. Gordon Whaley, "The Agricultural Impasse" (*Science*, July 22) are obscure, others suggest serious deficiencies in the Research Administration of the Department of Agriculture. If believed, these statements might reduce the effectiveness of this administration's work.

Certainly the research bureaus of the department, including the Bureau of Plant Industry, Soils, and Agricultural Engineering, which Mr. Whaley finds especially deficient, have many administrative problems—in fact, most of those he mentions. But the inference that these problems go unrecognized is not so. Fundamental as well as applied research is encouraged. Many projects are suggested by junior scientists. Ranks and salaries of strictly research scientists can be (and some are) as high as those of division chiefs and assistant chiefs of bureau.

Scientists need the freedom essential for effective research, but they are not an elite class—Congress must have ultimate control of public funds. The reports of annual hearings have their bad spots; they also have many good ones. The problem is to improve the relationship, not to avoid it.

The administrative and personnel problems of the Agricultural Research Administration that Mr. Whaley touches on are far more complex than he has had an opportunity to appreciate (else he would not call the task "dignified pussyfooting"). As in any other research group, the problems keep coming. The question is, how are they handled? Mr. Whaley thinks they are handled very badly; I think they are handled well.

Possibly Mr. Whaley conceives of research in terms of many small independent projects. There are some of these. But agricultural scientists must address themselves increasingly to problems of great scope. A large part of our big research undertakings are cooperative with many other agencies, especially the Land Grant Colleges, and are managed almost wholly by the research scientists themselves. The prestige of the plant scientists, about which Mr. Whaley says he is worried, is not only high, and increasing, for their professional work, but also for their cooperative methods of administration. How well are they doing? Look at the record!

In the same paper Mr. Whaley quickly writes off the tropics. He even asserts that these regions cannot become important producers of "energy" crops. Should they hear of it, successful sugar cane planters and other farmers in Hawaii, northern Queensland, and wherever modern methods are used in the humid tropics would be puzzled. The problems of tropical agriculture are indeed complex, but the worst error of all would be to neglect them, if we want abundant food in the world.

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## An Automatic Timer for Speakers

Timing devices available for notifying speakers that their allotted time has elapsed are generally cumbersome and require outside power sources. Many of these appliances in present use require alternating current, which is not easily obtained in hotels and meeting halls which produce their own direct current. Further, the mechanisms now in use mark the time allotted but do not remind the speaker that his time has run out.

We have recently designed a simple, compact, portable timing device which requires no outside source of electrical current. A commercially available timer is modified by the introduction of contacts for the completion of a circuit between three small flashlight batteries and a six-volt buzzer. An escapement type lever arm is introduced into the timing device to make it possible to turn on a light and to sound a buzzer for brief periods. The entire unit weighs less than one pound.

The chairman sets the time allotted on the timer. The time remaining to the speaker is indicated on the face of the dial. The warning light turns on automatically two minutes before the end of the specified period. At the end of the allotted period a buzzer sounds momentarily. One and a half minutes after the supposed end of the talk, the buzzer sounds again, this time for a longer period. Three minutes following the scheduled end of the talk, the buzzer sounds continuously for one minute to remind the speaker that he has overstayed his invitation. Varying times for these signals may be installed. The automatic character of the signal relieves the chairman of the occasionally unpleasant task of bringing the presentation to a close. This device has been tested satisfactorily at several meetings.

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