

1940, p. 171) say: "most likely in the first or second century."

As to the soybean, no indication of it has been found, I believe, in neolithic or early bronze age sites. But it seems to appear in literature of the first millennium B.C. (cf. Creel, "Birth of China," p. 326).

References to early dates in Chinese history are likely to be unreliable for any century prior to the eighth before our era.

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OUR SCIENCE MEETINGS AGAIN

It is getting to be an annual custom to ask, "What is the matter with our scientific meetings?" Dr. Merrill asked it quite some years ago on his return to America after a long sojourn abroad. As I remember, he looked forward with enthusiasm to the meetings of the A. A. A. S., his first in many years. And when they convened he wandered from room to room hoping, ever hoping, that in the next room he would find a speaker who could hold his attention. But his wanderings availed him nothing. He made the suggestion that our A. A. A. S. gatherings should not be given over to youngsters who are making their first public appearance. This is true, but it would be just as disastrous if they were given over to the older men. What is needed is a better balance between the stability of older men and the daring enthusiasm of youth. I attempted this in arranging a symposium at which five out of nine speakers were under fifty and two under thirty years of age.

In a recent issue of *SCIENCE* (93: 19, 1941), Dr. Francis H. Allen suggests that speakers should improve their delivery. This is important and would help, but it is, so it seems to me, a rather futile attempt at improvement because poor delivery is mostly due to personal traits which are very difficult to correct. To be sure, as Dr. Allen says, we can all learn to hold our heads up and direct our voices toward the back of the room, but to correct a weak voice, which mumbles along in a monotone can be done only by starting when the otherwise able scientist is six years old. If I may suggest several rules for "the acquirement of a clear and common-sense manner of communicating information and ideas to an intelligent audience," then they are the following.

First, foremost and irrevocable should be the rule forbidding the reading of a paper. This will go hard with some, but if a scientist does not know his subject well enough to present it extemporaneously then he should wait until he does. There is usually opportunity for practice on the students and at the home seminar, before the big meetings come. If this rule seems harsh, then attend the next symposium at which some

six or eight papers are read, and you will approve the rule wholeheartedly. All other rules are subordinate to this one.

Second in importance is the elimination of historical introductions and lengthy summaries. The latter is as necessary and as effective as a twice-told joke. All mathematical tables and curves should be reduced to a minimum. A column of numbers may help much toward understanding what took place in an experiment, but five tables of five columns each shown one after another leave the audience utterly bewildered. Curves portray a situation with graphic clarity and are always desirable when there is time to study them. Three or four are about all that a speaker can interpret and an audience digest in a half-hour talk, yet a dozen curves at the rate of two a minute is not uncommon at our meetings. These are rules which all can follow and all will be grateful for when they are observed by others.

The greatest lack in our science meetings is discussion. An abstract is printed, the audience has read it, and the speaker repeats it, twice if he gives a summary. It is the awful routine of the papers which is so deadly. One speaker after another, and no comments. If each group could be organized in advance and discussion arranged for, this more than any other change, would make for an interesting meeting.

And all after-dinner talks should be limited to twelve minutes!

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THE PRESENTATION OF SCIENTIFIC PAPERS

THOSE who read F. H. Allen's suggestions about improving the presentation of scientific papers (*SCIENCE*, 93: 19, 1941) undoubtedly will be interested to learn that the Western Section of the American Society of Plant Physiologists has already taken steps to make scientific meetings more enjoyable by improving the presentation of papers. This question was brought up at the annual meeting during the summer of 1939. The following spring when the call for papers (for the Seattle meeting) was issued, I included the suggestion that prospective speakers *refrain from reading prepared manuscripts, but use a few notes instead*. This suggestion was followed up almost without exception and resulted in better contact between audience and speaker. Because the meetings were followed by an excursion (to Friday Harbor) which lasted a whole day, I had an opportunity to talk to people and inquire about their reaction to the meetings. Many stated that they did not experience the fatigue which is so common after meetings. Although this might have been partly due to the invigorating atmosphere of the Pacific Northwest, I am convinced that the informal