Presidential Address —
Information — Gains and Losses.¹

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The subject which I have chosen is one in which we should have considerable interest and which is probably appropriate for soils and plant workers. It will be necessary to introduce and orient this subject matter in relation to our entire program. We will be concerned primarily with the research function, though this may be of less interest to teachers or extension workers. However, all of us are involved in the outcome of research and its application to our overall purposes.

We may say that information is organized, arranged and related subject matter. It can be transmitted, stored, retrieved or forever lost. The general purpose of research, if the work is strictly original, is to determine or establish; or, if it is not original, to affirm or negate. Our obligations are to learn what is known, to evaluate, to relate, to make comparisons, to verify previous reports and to elaborate and project. It is the responsibility of the worker to review previous pertinent investigations and subsequently, as he becomes an author, to present the results and the conclusions in an accessible place, if possible, for those who follow.

The rapidly increasing supply of information available may eventually lead to the point where gains and losses are equivalent. C. E. Nelson of the International Business Machine Company has indicated that the technical information available up to the time of the invention of the electric light would have been equivalent to a bar graph about four inches high, in relation to one which would be 70 feet tall based upon data accumulated only since World War II. It has been suggested that, in some areas, one must increase review or assimilation capability 20% or more a year just to keep even with the information output.

Problems of storage become enormous. Man’s capability to accumulate data may be greater than his ability to analyze it, even with the aid of highly sophisticated computers. Recording may be done on microfilm or magnetic tape at the rate of 30,000 to 90,000 characters per second. Recording, storage and retrieval require coincident development for best use of information.

It is important for investigators to keep abreast of the ground of a problem and, except in special cases, perhaps, they should not duplicate exact investigations of others. Possibility of exact duplication would seem unlikely.

The researcher may find a generally broader ground of information helpful in his specific work, as possible, there is a need to browse into areas other than his own. The words of East in the book, “Mankind at the Crossroads” are memorable in relation to breadth of knowledge. He stated:

“In earlier years the writer travelled trails which at the time seemed rather unrelated successively and perforce hurriedly, from forestry and dietetics to soil chemistry, crossing agricultural economics and plant breeding, all, these trails are not disconnected, they are off from the main highway of science in different directions. They are useful portions of the web of communications available to sociology, and for all concerned with the development of the human animal.”

One of our staff members at Wisconsin, a co-worker in Western Europe had indicated he wrote papers but didn’t read those of others and been suggested that scientists may be resistant to scientific discovery. Barber presented an interesting review to document this point. The inference is that there may be a substantial lack of ability or willingness to discover what is already in the literature.

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