

## APPLIED BOTANY AS FUN

NEIL E. STEVENS

*University of Illinois, Urbana*

Much ink has been spilled over the division (real or imaginary) of "pure" from applied science.

The thesis which I should like to develop—confining myself to botany, the only field in which I can claim authority—is that the difference between the fields is real but that it lies—not in the methods which are largely identical, not in the basic scientific values which are much the same, not even in volume of practical results which may flow from the seemingly least practical approaches—but in the method of choosing problems; that the difference between pure and applied botany is one not of content but of intent. If you choose your own problem (or think you do) it is pure botany. If your problem is chosen for you or forced upon you by the economic needs of some group, it is applied botany.

I shall contend further that the advantage in some respects lies on the side of applied botany—specifically that if you happen to be made that way, it is more fun.

First of all, applied botany offers variety. I have never made any claims of purposefully pushing outward the boundaries of knowledge, rather have I been pushed around by the exigencies of the period. Yet in my 25 years spent in the service of economic botany, I had few dull periods. I have been associated in the field for longer or shorter times with four of our great outbreaks of plant disease, the chestnut bark disease (the greatest of all), bacterial wilt of corn, downy mildew of tobacco, and the Dutch elm disease.

Geographically as well as botanically, my interests have been forced to range widely. Fortunately, plants grow at the most pleasant seasons. They can be studied in Alaska only in the summer and may well be studied during the winter in Florida or Hawaii. I have, however, found it necessary to work at the South Water Market in Chicago and on the water front of New York at three a. m. in the dead of winter. During

studies of spoilage of fruit in transit I spent some days in a superintendent's private car and a good part of one night on top of a freight car crossing Iowa. I have even doubled for five summers as an entomologist, and believe it or not, even entomology is interesting if properly pursued.

On the whole, economic botany tends to be a sociable job. In our more or less futile attempts to control plant diseases during the past 25 years, we have taken some bad beatings, but our company has been numerous and exceedingly good.

I very much hope that I will not be misunderstood when I say that I rate as one of the real advantages of economic botany the opportunity, indeed the compulsion, to take real chances on things that really mean something. I bet but rarely, partly, no doubt, through parsimony, but largely as a result of a conviction that if a thing is not of sufficient interest without a wager, it is not worth bothering with. I note in a book review in the *Yale Review* for 1938 a sentence referring to the "arid tradition of American culture which compels professors to be accurate and sound rather than interesting and speculative." In the economic field you simply have to take a chance—to act, or refuse to act, which is the same in the end—to pit your own wit against nature and forecast the outcome.

Another of the real advantages of economic botany is that it is perfectly respectable to use plain understandable English. A few years ago I came across (in the December, 1936 *Atlantic*) an article entitled "The Snobbishness of the Learned" in which this statement was made:

"The impression that philosophical and scientific ideas cannot be explained in plain language to plain people is . . . due to the fact that philosophers and men of science have not, as a rule, the wit to do it. It is due in plain terms to the stupidity of the learned men and not to the stupidity of humanity."

I believe the charge is unfair, at least I have a strong suspicion that the chief reason so many of our colleagues do not use plain English is that they do not dare, or at least they feel they appear more profound if they are obscure. This is well expressed—as are so many other important truths—by Gilbert and Sullivan. This is from "Patience."

"If this deep young man expresses himself in terms too deep for me, Why, what a very singularly deep young man, this deep young man must be."

Of course, sometimes scientific writers go too far even for their associates. Some of you may have read a recent book review, which may or may not have been justified. (I have never read the original.) It begins:

"This book is a fine example of an important and already difficult subject discussed in an abstruse, involved, pompous, and thoroughly tiresome manner. Simple things are made complex, and complex things are made well-nigh incomprehensible."<sup>1</sup>

Finally, economic botany seems to me to be fun because it has human interest. Hans Zinsser refers to this in his recent autobiography, the title of which is "As I Remember Him."

"The scientist's temporary relief from constant dissatisfaction with his own accomplishments comes from those interludes in which he projects his technical and theoretical training into a problem of practical application."

Mary E. Pennington expresses the same idea in an interview published in the November 10, 1940 number of "Chemical News."

"There is a thrill when a scientific idea suddenly strikes home in the form of an industrial problem."

I suppose it all boils down to the universal human need of being important to someone. We all recognize this need in other people and occasionally in ourselves. That is why some people keep dogs, why ladies no longer too young drop their handkerchiefs where we have to pick them up, why neurotic wives throw sick spells. That incidentally, is why honorary societies are organized and perpetuated. Apparently such devices are necessary to sustain the enthusiasm of the scientists themselves. In the economic field there is little or at least much less, need for such secondary stimuli. Indeed, the danger is quite the other way. Scientific work is being held in such high esteem these days that the grave danger is not that we will not be listened to, but that our advice will be taken too seriously and applied with too little restraint.

We can cease to worry about priority in publication when our ideas become common knowledge in an intelligent group almost before they could be published, and in view of the very large percentage of mistakes that each of us is sure to make, it is worth something to be in a field where even mistakes are important.

<sup>1</sup>Copeia, Dec. 26, 1939, p. 240.