NOTE
THE CHALLENGE OF AGROBIOLOGY

The review of my "A B C of Agrobiology" by "R. B." in the March (1938) number of this JOURNAL raises an issue on which a little comment may be in the general interest. On page 265 the reviewer says:

"In addition to being the A B C of Agrobiology one gets the impression that this book is also the X Y Z of the subject. Its problems are solved! The job is done. Its laws are all discovered. They are immutable and universal; ..."

In the first place, the reviewer is assured that this is very nearly, if not quite, the impression that the book was intended to convey.

In the second place, the half-derisive tone of the review seems to indicate that the reviewer himself entertains no conviction that the problems of agrobiology have been solved, that its job has been done, that its laws have been discovered, or that, if there are any laws of agrobiology, these laws have any claim to universality or immutability.

If this aloofness were only the reaction of a single individual it would scarcely call for notice, but the author has had ample occasion to note that it reflects the state of mind of many plant biologists and agronomists. The vastness of the plant world, the diversities of characters of plant species, and the number and variability of the environmental influences that affect the growth and yield of plants have induced an age-old feeling that here is a great tangle which is presumptuous to expect any man or set of men to untangle. Most incredible of all appears to be the assertion that the quantitative phenomena of plant life are reducible to a single universal rule that partakes of the nature of an immutable law of Nature.

In committing themselves to the principle of universality and immutability agrobiologists are well aware that they are suspending their basket of eggs by a single thread which any passer-by may essay to cut. For, let there be found a single authentic exception to the rule of universality, and the whole agrobiologic proposition is done away. The universality here contemplated is contained in the theorem that the nutrition and growth of all plant types, without known exception, are controlled and directed in a determinate manner by the mass action law.

The purpose of this note is to indicate a simple experiment by which anyone may try his hand at blowing up this proposition and with it the whole tribe of agrobiologists. Let there be prepared a series of equal portions of a normal soil. Let there be grown in each of these portions of soil the same stand of any pure bred plant genotype or stabilized agrotype under the varied influence of graded amounts of any recognized factor of plant growth. (Note that the reference to any plant type and any growth factor gives full scope to the principle of universality.) If the resulting series of yield figures do not fit accurately in the agrobiologic yield equation \( \log (100 - y) = 2 - 0.301x \), then the agrobiologic basket is hopelessly smashed. If the fit is accurate, then the whole case for agrobiology is fully proved because any