

# Lawes Agricultural Trust.

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Dear Mr Black,

In respect to the investigations of the effect of meteorological conditions on the growth of crops, organised by the Meteorological Committee, I should like to draw the attention of the Committee, and of the officials of the Ministry concerned, to the importance of extending the investigation to the comparison of varieties, and to the possibility of cooperation for this purpose with the National Institute for Agricultural Botany, who already are conducting variety trials in various parts of the country.

That the adaptation of plant variety to climate is one of the most promising branches of agricultural meteorology, needs I think no emphasis. It is widely believed, on substantial and extensive evidence that closely allied varieties, both of domesticated and of wild species, show material differences in their response to climatic factors. That these differences are of great economic importance may be accepted on the testimony of farmers, and by analogy with wild forms. To study the effect of weather on a species without regard to variety, or with one variety only, is to explain only one margin of the field, and to expose the investigation to the risk that its conclusions may be invalidated by changes in the commercial varieties popularly used. The complementary margin of the field is being explored by the National Institute of Agricultural Botany in their variety tests. These tests are to some extent at present, <sup>being</sup> and will no doubt to a greater extent in future be conducted at a number of different stations, differing in soil and in average climate. The climatic factor can only be distinguished by repeating the trial for a succession of years, otherwise not only is its effect masked by soil differences, but the weather variations from year to year are on the whole greater than the differences between different stations

in the same year.

I submit, in fact, that without adopting the full program of an investigation of varietal differences in climatic response, neither will the meteorological investigation avoid the damning criticism that its conclusions are confined to a single variety, nor will the variety tests escape the equally damning criticism that their conclusions may be invalid and misleading for the climate in which any particular individual wishes to farm. At the same time both investigations <sup>now</sup> fall short of covering what is probably, from an economic point of view, the most immediately valuable part of the field, namely that of the varietal differences in response to climate.

The program that I propose is that (in such species as are sufficiently important) a selection of varieties, including both new varieties of promise and selected lines of old favorites, should be grown at a number of localities for a succession of say 10 years (after which it could probably be desired to revise the list of varieties) under observed meteorological conditions. The investigation of the National Institute comes near to fulfilling the desired conditions, save that at present meteorological data are not always available at their stations, and are not assembled with their results. Indeed so far I do not think that they have published results from individual plots. I suggest that the Committee should seriously consider the possibility of supplementing these experiments, and should accept or call into consultation Mr Parker, with a view to (i) obtaining meteorological data in addition to variety yields from his station, (ii) prolonging his experiments if necessary sufficiently to bring out differences in meteorological response, (iii) harmonizing the program which stations have undertaken for the Meteorological Committee with Mr Parker's experiments.

I should be glad to obtain your personal opinion as to these suggestions, and as to the correct procedure for putting them forward.

Yours sincerely,