

28th August, 1950

Dear Dr. Pettit,

In connection with the development of a breeding policy for dairy cattle, I have for some time been urging the A.R.C. to ascertain experimentally, so far as this can be done, by just what procedure a cow could be tested for potential milk yield, if by that, one means the maximum profit when she is fed at the most profitable level.

Obviously, this means breaking away from a purely chemical <sup>assessment</sup> process and obtaining doubtless rough, but so far as may be effective, <sup>economic</sup> equivalencies between units of milk and of foodstuffs. For milk, I think all that is needed is allowance for butter fat. But the whole foodstuff question is more complicated owing to the variety of fodder usually consumed in the course of lactation, and the artificiality of current prices which have, I suppose, often been deliberately fixed so that the price ratio does not in any sense become equivalent to the ratio of economic effort.

To me it seems not only as a matter of principle, that geneticists and biologists should not be expected to base their recommendations on their own incompetent guesses, but that with all the available data of the last fifty or hundred years, it will still be a matter of great difficulty to arrive at the economic equivalences good enough even to ensure that each cow is fed approximately at what, for it, is

the most profitable level of nutrition. This, however, seems to me a sine qua non if milk yield <sup>or</sup> ~~of~~ <sup>equivalent</sup> ~~in this concept~~ is to be used in Genetical selections.

Yours sincerely,