Dr. J.C. Drummond,
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W.C. I

My dear Drummond,

The possible effect of overlap does seem certainly the greatest difficulty in interpreting the experiment. A method which has been very successful in dietary studies with dairy cows, as measured by milk or butter fat yield, is to give each diet for a month within a neutral or intermediate diet in the intermediate fortnight; and probably some such precaution in this case would have produced clearer contrasts. I do not know, however, whether anyone has examined the data for cattle to assess the magnitude of the after effect, and I think it would be interesting to get this done as a guide to the use of any similar technique.

The fact that I do not think one can get behind, is that fairly substantial contrasts, as compared with standard errors based on the discrepancy of performance between different children receiving the same diet, who have previously received different diets. It would seem that any important after effect would not only diminish the average difference observed between different treatments, but would
also enlarge the estimate of error, and so, for both reasons, make it more difficult to obtain the significant results reported. On this point I do think a defender of the experiment has a very strong ground; even if he admitted, as I think he should, that clearer differences might have been obtained by inserting neutral weeks, and certainly by enlarging the experiment by repetition, either at other times, or on other children; apart from the possibility of after effect, one way of viewing the quantity data is to say that the growth of 48 children for six weeks is equivalent to the average growth of one child for five and a half years, and that it does not matter that the elements out of which the total is made are small, provided that, by multiplying these elements, the error of the aggregate is not unduly increased. Some quite surprising consequences of this line of thought were very well brought out by a paper read yesterday by F. Yates at a sectional meeting of the Statistical Society. I am sending the galley in case you would like to look at the paradoxical weighing result given on p.15, under the heading "Independent Factors." His phrase; "that constant errors are non-existent" is not very happy, since his method takes full account of zero error; it only means that the scale of measurement is genuinely linear or additive, so that there is no tendency for the zero error to vary with the weight of the object.

Yours sincerely,