

October 19, 1938

My dear Raj Chandra,

Thanks for your note on no. 22 of the incomplete block problems. You are, of course, quite right that the solution is derivable from that of no. 23, and we were very careless to have overlooked that. I expect you have noticed that each of the saturated cases,  $k = r$ , contain in general solutions to two other problems, e.g., no. 19 contains the solution for 9 varieties in blocks of four, with 8 replications, given as no. 11, and for 10 varieties in blocks of five, with 9 replications, given as no. 16. Since in the first of these the block number is equal to  $\lambda$  of the original problem, it is only of interest when  $\lambda$  exceeds 2. The second with  $r - \lambda$  as block number is more generally of interest, as in the case you call attention to. I did not obtain the solution of no. 19 from the series, though, later, someone in the Department found that the solution was a cyclic one, unlike, for example, that of no. 5, which cannot be expressed in cyclic form.

Savur has written a paper for Annals giving a method of treating cases  $k = 3, \lambda = 1$ , which, though not mathematically general, is good for deriving from any solution a series of solutions with larger numbers, and perhaps facilitates practically the basic solutions of these series. I am afraid there is little practical interest ~~for~~<sup>in</sup> solutions requiring more than 10 replications. You may be interested to see the enclosed account of a discussion at the British Association this year.

Yours sincerely,