female, having the same structure as is described by Schultz, and, therefore, must be considered as autosomes. Secondly, it seems that each nucleolus. organiser is capable of forming one chromocentre.

Summarizing, it can be said that in the forty-eight chromosomes of man, there are two which are characterized by a varying degree of heteropyenosis, at the lowest degree of which they are often scarcely distinguishable from the remainder of the chromatin.

The determination of the origin and number of the chromocentres in normal nuclei is of interest in connexion with the problem of detecting proliferating malignant cells, where the chromocentres are abnormally numerous ${ }^{3}$.

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${ }^{1}$ Schultz, J., J. Heredity, 40, 31 (1949).
${ }^{2}$ Barigozzi and Cusmano (unpublished data).
${ }^{8}$ Koller, P. C., Nature, 151, 244 (1943).

## Anomalous Results of Moth-Proofing Tests

In the course of testing the efficiency of mothproofing agents, anomalous results were obtained with two well-known compounds which had been applied in conjunction with a neutral levelling acid dye (Xylene Fast Blue): Further work on the problem is unlikely in this laboratory so these results are presented here.

The two moth-proofing agents were: ( $A$ ) a substituted urea derivative, and ( $B$ ) a sulphonic acid derivative of triphenyl methane. Shrink-controlled knitted woollens were moth-proofed at a woollen mill by the following method. The dye-bath was adjusted to an initial $p \mathrm{H}$ of about 8 with ammonia. The ingredients were added and the bath heated to $100^{\circ} \mathrm{C}$. in 15 min . This temperature was maintained for a further 15 min ., when the $p \mathrm{H}$ was adjusted to 5 with acetic acid. The woollens were then removed and rinsed twice.

Moth-proofing efficiency was determined by loss of weight of fabric tests ${ }^{1}$ with the larvæ of two species of clothes moth (Tincea pellionella L. and Tineola bisselliella Hum.). Further determinations of efficiency were made after two, four and six washings of the domestic type using a commercial soap powder.

Chemical analysis showed a loss of the moth-proofing agent with washing (Fig. 1); but despite this there was a steady increase in moth-proofing efficiency after each washing (Fig. 2). This increase in efficiency was shown in separate series of tests with both species of moths for both $(A)$ and $(B)$.

Further tests carried out with agent ( $A$ ) applied at $60^{\circ} \mathrm{C}$. in an acid bath without dye on the same shrink-controlled fabric gave a usual curve of efficiency with both species of test insects, the efficiency decreasing with decrease of moth-proofing agent after washing (Fig. 3).

Where the moth-proofing agents were applied in the dye-bath under the first set of conditions, there was an apparent inhibition of moth-proofing efficiency which was progressively removed by washing. Thus, though chemical analysis might show a concentration of agent which was theoretically adequate for protection, in practice the efficiency of the agent might be too low to prevent damage. We would be interested to learn whether other workers have encountered this same anomaly and if any explanation is fortheoming.
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Feb. 1.
${ }^{1}$ Lamb, K. P., N.Z. J. Sci. Tech. (in the press).

## Reciprocal Translocations in Pisum

Some years ago I published an analysis of structurally changed types of Pisum sativum based on cytological observations ${ }^{1}$. One of these, structural type four which had arisen in the variety Extra Rapid, was reported as having chromosomes 3 and 5 interchanged, according to my notation. Recently, Lamm ${ }^{2}$ and Nilsson ${ }^{3}$ have challenged this statement, and on the basis of their genetical evidence claim that the $K$ line (chromosomes 1 and 2 interchanged) and the Extra Rapid translocation have the chromosome carrying the $G P$ factor, chromosome 2 on my notation, in common, and predict that the cross Extra Rapid $\times$ $K$ should have an association of six chromosomes.

My records showed that this cross had two associations of four chromosomes, indicating that two separate chromosomes are involved in the two interchanges. This I have confirmed by a re-examination


