

veloping a positive Wassermann reaction it has dropped to an average of 22.9 per cent. These results are in close agreement with the determination on the human cases.

The balance between cholesterol and its esters is very significant in both of these experiments. In no other disease so far reported in the literature has such an altered relation between bound and free cholesterol been observed. No conclusion as to the significance of these results can be drawn as yet but it may be possible that they are bound up in the question as to the nature of the Wassermann reaction.

TABLE II.

CHOLESTEROL AND CHOLESTEROL ESTERS IN RABBIT BLOOD.
Mg. per 100 c.c.

Rabbit Number.	Wassermann Reaction Negative.			After Developing four Positive Wassermann Reaction.		
	Total.	As Esters.		Total.	As Esters.	
	mg.	mg.	Per cent.	mg.	mg.	Per cent.
470	102	36	35.2	99	24	22.2
471	111	39	35.1	117	15	12.8
472	93	33	35.4	117	19	16.1
473	96	25	26.0	98	27	27.5
474	92	30	32.6	93	26	27.9
475	114	45	39.7	90	21	23.2
476	85	33	36.0	87	27	31.0
Average.			34.3			22.9

155 (1737)

On the elimination of the x-chromosome from the egg of *drosophila melanogaster* by x-rays.

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The experiments to be described were performed with a view to determining if x-rays by affecting the x-chromosome could disturb the inheritance of a sex-linked character. Wild type (red-eyed) females of *Drosophila melanogaster*, homozygous for

red-eye were x-rayed soon after emerging from the pupa with a dose just under the sterilization dose and mated to white-eyed males. The white-eyed character being recessive to the red-eyed the normal result of crossing a homozygous red-eyed female with a white-eyed male is for the offspring in the first generation to be all red-eyed if there is no non-disjunction.

In all, four experiments have been completed to date. In three of these thirty-five virgin females, homozygous for the red-eyed character, were mated with white-eyed males. Nineteen of these were used as controls and sixteen were x-rayed soon after emerging from the pupa and immediately before mating. The rayed females were the sisters of the controls. *None of the nineteen control pairs produced white-eyed males.* One of the rayed females was sterile. *Of the fifteen fertile, rayed females, twelve produced one or more white-eyed males.*

In two of the four experiments the white-eyed males which were crossed with the rayed females were also homozygous for dumpy, a second chromosome character. All of the six exceptional males produced had normal wings with the exception of one which died before its wings expanded. It therefore seems probable that only the x-chromosome was affected.

Further experiments using multiple sex-linked stock, eosin miniature and scute-echinus-cut-vermilion-garnet-forked, have shown that probably the whole x-chromosome is affected.

Since the eggs which produced the exceptional males were laid during the first six days after raying it seems reasonable to believe that they were acted upon while in or preparing for one of the maturation divisions. Further, since the x-chromosome behaves differently from the other chromosomes during these divisions the production of the exceptional males would be accounted for if it is assumed that the x-rays were applied to the egg cells from which they came at a time when the x-chromosome in them was in a condition particularly susceptible to the dose of x-rays given.