

bacilli in the feces is relatively large or small would appear to depend upon the stage of the disease in the individual animals. It is important to point out, that even in well-nourished and apparently healthy herds of reacting animals (such as those used in this work) there are likely to be, at all times, a few animals actually passing virulent tubercle bacilli in the feces.

A detailed account of this work is published in Bulletin No. 149 of the Illinois Agricultural Experimental Station.

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An alteration of the sex-ratio induced by hybridization.

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Males and females of the fly *Drosophila amphelophila* occur in nature in about equal numbers. A long series of experiments failed to induce any change in the sex-ratio by adding different sugars, salts, acids or alkalies to the food on which the larvæ live. A remarkable alteration of the sex-ratio took place, however, in the second generation of certain crosses between two races that arose as mutations. When a male of a race with rudimentary ("short truncated") wings was crossed to a female of a race with short proportionate wings all of the females had normal wings and all of the males short proportionate wings, like the mother. When these (F_1) were inbred, there were produced in the second generation three classes of individuals according to the character of the wings; namely, long (normal), short proportionate, and short rudimentary distributed according to sex as shown below:

Long ♀	Long ♂	Propt ♀	Propt ♂	Rudim ♀	Rudim ♂
989	137	336	389	8	12

The normal males are to the females as one to seven, while in the other two classes the sex ratio is approximately normal. *The point of prime importance is that it is the normal males that are affected.* Even if we assumed that the deficiency might be due to the absence (in part) of males with rudimentary wings, and double the number of males with normal wings, the number of normal males would still fall far below that of the females.

The reciprocal cross, namely, short proportionate males and rudimentary winged females gave, in the first generation, long-winged males and females. These inbred produced in the second generation:

Long ♀	Long ♂	Propt ♀	Propt ♂	Rudim ♀	Rudim ♂
265	80	36	90	0	14

Again, the sex disproportion is observed for the long-winged flies, while the reverse order holds now for the proportionate wings.

The F_2 flies from both of the above sets have been bred again in all possible combinations within the same set, and the disproportion of males to females was found to be transmitted to the next generation, although not in the same ratios. Some of the proportionate winged males (F_2) were also bred to wild flies, and gave 301 females and 111 males.

The most probable explanation of these results would seem to be either in the partial degeneration of the male producing spermatozoa as a result of crossing with the race with rudimentary wings or in some quantitative change in the sex determining factor. The effects are transmitted also to a third generation. Whether they are permanent or not remains to be tested.