

[Reprinted from the *Proceedings of The Linnean Society of London*, Sess. 144, 1931-2, pp. 124-5. (Dr. R. A. Fisher's remarks on Mr. M. A. C. Hinton's paper on 'Biological principles in the control of destructive animals.')] 

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Dr. FISHER said he would like to express his appreciation of the scientific value and general interest of Mr. Hinton's paper. With respect to the K.O.F. (kill only females) campaign, he believed that everyone would agree with Mr. Hinton's strictures on the sensational statements which had been circulated. He was not sure, however, that Mr. Hinton had been entirely fair to the promoters of the movement in stating that the *only* effect of an excess of males would be to ensure the immediate fertilization of all female rats ready to be fertilized. Some observations which the speaker had been

led to make during the last few years upon a colony of mice, which he had kept for genetical purposes, seemed to show that other effects would be not improbable.

For the purposes of his experiments it had been necessary that the successive litters of each doe should be sired always by different bucks. At first he had tried waiting till the litter had been born before changing the buck. But this course had been quickly found to be disastrous. Mice appeared to have a strong sense of territory, and the doe usually flew at the intruder, who, for his part, defended himself very meekly, and displayed every anxiety to escape. If, after they had settled down, they were left for the night, it was found in the morning that the litter had been slaughtered, and was being quietly eaten by both adults. It was considerably safer to introduce the doe and her litter into the buck's cage, for his infanticidal instinct appeared to be conditioned chiefly by finding himself on alien territory.

In the light of these facts the practice had been next adopted of changing the bucks before the litter was born, in fact as soon as the pregnancy could be detected, so as to give the buck introduced as long as possible to settle down, and 'feel at home' in his new surroundings. It was particularly interesting that this plan worked well for old bucks, but generally failed when a young buck was introduced into the experiment. The infanticidal instinct was, in fact, very finely adapted to the biological needs of the male mouse. If a buck, which had been capable of engendering for only ten days, were confronted with a litter which had been begotten certainly as long as nineteen days ago, calculation might show him that he could not be its father. In practice he might not do the calculation, but he did slaughter the litter.

Wild bucks certainly possessed the same instinct. Until recently, before the old cages had been replaced, the first sign of an incursion by a wild buck had been always the loss of one or more litters already born, and often, what was equally annoying, the replacement of the next experimental litter by one of obviously wild parentage. The small rodents, as Mr. Hinton had said, were undoubtedly not salacious animals. But the mice at least, in the speaker's experience, had unquestionable infanticidal instincts, and, without knowing what practical successes the method could claim, the speaker suggested that it could more fairly be judged by its success in *practice* than by the rather absurd *theories* of how it was supposed to act.