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*The genus Mus as a model for evolutionary studies*

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## **One hundred years of eruptions of house mice in Australia – a natural biological curio**

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The house mouse has adapted well to the cereal crops of south-eastern Australia where populations show aperiodic outbreaks over large areas. A 20-year population study has provided a wealth of information on breeding ecology, demographic changes, spatial behaviour and epidemiology. The breeding season can be as short as 4.5 months and as long as 10 months with litter size changing seasonally from high values in spring to low values in autumn. There are marked changes in litter size between years. Rates of increase of populations also vary between years. The rate of change of populations during the breeding season is independent of density effects, but if the population density is high at the commencement of breeding then the litter size is depressed throughout that breeding season. There are density-dependent effects on survival during the non-breeding season. Rates of increase of populations over spring and summer are highly correlated with accumulated rainfall from the previous winter–spring (April–October). Studies of helminths and viruses indicate that Australian mice carry only a subset of the helminths found in Europe. There have been no published studies on murine viruses in Europe. Perhaps a reduced diversity of diseases partially accounts for the ability of mice to increase rapidly to extreme population densities in cereal-growing areas of south-eastern Australia.

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