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## CORRESPONDENCE

### Australian bat lyssavirus

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The Exotic Animal Disease Bulletin #57 in the February issue of the Australian Veterinary Journal<sup>1</sup> gives a good description of the current situation regarding the lyssavirus found recently in bats in Australia. However, it is a misnomer to label this virus an exotic disease agent, and premature to name it Australian bat lyssavirus. The discovery of this virus is simply the latest in a series of recognition of endemic viruses of veterinary interest by many virologists. This long series of discoveries was initiated by the establishment of a virology unit in CSIRO by Dr EL French in 1958. The lyssavirus has, most probably, a distribution up into Asia and until the limits are known a local name is premature.

It was the realisation that bats rather than earthbound carnivores were more likely to be the ancestral hosts of rabies viruses around the world that led me to advance the hypothesis in 1989 that a lyssavirus was already present in bats in Australia.<sup>2</sup> The prevalence of rabies viruses seemed to be very high in bats in the USA in contrast to other regions of the world. In the best-studied bat population in the world, 30 of the 39 species in the USA were shown to be infected.<sup>3</sup> The other nine species are rarities. The nearest location to Australia where rabies virus had at the time been isolated from a bat (*Pteropus poliocephalus*) is India.<sup>4</sup>

However, the sparse record from Asia and the countries to the south and east seemed to me to be related more to the lack of study rather than the absence of this virus from Australian bats.

Bats are probably the most ancient placental mammals in Australia. A microchiropteran fossil has been found from the middle Miocene era,<sup>5</sup> when the other land animals were marsupials. Thus, there has been ample time for any virus brought with the current or extinct species of bat to have spread through inter-active bat populations. Only small bat populations which have been isolated for a long period by the increasing aridity of this continent should be regarded as possibly uninfected. The past sea levels should be taken into account when considering the bat populations on islands which are presently too far offshore for the resident species to migrate to and from the mainland.

There is no evidence to support the statement by Gleeson that the 'newly emerged' lyssavirus represents a progressively increasing risk for the human population through future spread.<sup>6</sup> The risk to man or domestic animals has decreased by the isolation of the lyssavirus, which has allowed soundly based warnings as in Bulletin #57 to be issued. Establishment of a lyssavirus in a new cycle in a species of carnivore is probably a very rare event. Australia has lacked a sufficient population of small carnivores to allow for the necessary frequency of encounters with bats sick with encephalitis. The relevant ecological niche is being filled by the expanding fox, cat and dog populations of the present day, so probabilities are changing. I have observed feral cat colonies in bat-roosting areas in and under the trees in close association with bats.

Future research should allow for broader isolation methods to be used than those applicable to lyssaviruses to allow the discovery of the other endemic infectious agents present in bats in Australia so that an adequate risk assessment can be made for those in contact with bats.

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