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Is Wallace's Line a Barrier to Nipah Virus? The Distribution of Henipaviruses in Southeast Asia and Australasia

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Nipah virus (NiV) (Genus Henipavirus) is a recently emerged zoonotic virus that causes severe disease in humans and has been found in bats of the genus *Pteropus*. Whilst NiV has not been detected in Australia, evidence for NiV-infection has been found in pteropid bats in Malaysia and Indonesia. The aim of this study was to determine the occurrence of henipaviruses in fruit bat (Family Pteropodidae) populations to the north of Australia. In particular we tested the hypothesis that Nipah virus is restricted to west of Wallace's Line. Fruit bats from Australia, Papua New Guinea, East Timor and Indonesia were tested for the presence of antibodies to Hendra virus (HeV) and NiV, and tested for the presence of HeV, NiV or henipavirus RNA by PCR. Evidence was found for the presence of NiV in both *Pteropus vampyrus* and *Rousettus amplexicaudatus* populations from East Timor indicating the presence of NiV on the eastern side of Wallace's Line and within 500km of Australia. Evidence was also found for the presence of non-NiV, non-HeV henipaviruses in fruit bat populations of Sulawesi and Sumba and possibly in Papua New Guinea. It appears that NiV is present where *P. vampyrus* occurs, such as in the fruit bat populations of Timor, but where this bat species is absent other henipaviruses may be present, as on Sulawesi and Sumba.

The findings of this work fill gaps in knowledge in geographical and species distribution of henipaviruses in Australasia which will contribute to planning of risk management and surveillance activities.
