Table S1: A summary and timeline of the major biogeographical events that shape the faunal elements of Australasia and key phylogenetic studies that support dispersal to the Australian continent.

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| Period | Timeline (Ma) | Paleogeographic event and key faunal dispersal events |
| Lower Cretaceous | 150Ma  130-120Ma | East and West Gondwana split  Indian block separates from East Gondwana |
| Upper Cretaceous | 90  85-80 | Australia begins to separate from Antarctica  Zealandia separates from Gondwana |
| Paleocene | 61-58 | Significant separation of Australia and Antarctica, shearing from the west. |
| Eocene | 41-36 | Final separation of Australia from Antarctica. Divergence Older Northern elements with African origins (e.g. ‘exoneurine bees (Schwarz et al. 2006, Chenoweth et al. 2007; Chenoweth and Schwarz 2011) and leaf-toed gecko genus *Christinus* (Heinicke et al. 2014)) |
| Eocene | 35 | closing of the Antarctic-Australian land bridge, formation of Antarctic proto-circum current and Antarctic glaciation |
| Eocene/ Oligocene | 35-30 | Sahul separates from Australia although largely submerged |
| Oligocene | 32-28 | final separation from South America and Antarctica |
| Oligocene/ early Miocene | 25-20 | Australia and New Guinea drift north and approach southeast Asia; Guinean land fragments emerge |
| middle Miocene (Langhian-Serravallian) | 15.97-11.62 | Large areas of New Guinea exposed. Arrival of bats (Teeling et al. 2005; Foley et al. 2015), the termite genus *Coptotermes* (13.4 Ma Lee et al. 2015)*,* ctenoplectrine bees (13Ma Schaefer and Renner 2008), *Pterourus* butterflies (12.4 Ma Wu et al. 2015) and birdwing butterflies (11.7 Ma Condamine et al. 2015). |
| late Miocene  (Tortonian-Messinian) | 11.62-5.33 | Sahul reached current proximity to Sunda shelf. Arrival of butterflies of the subtribe Mycalesina (11 Ma Aduse-Poku et al. 2015) and allodapine bee genus *Braunsapis* (8.8 Ma Fuller et al. 2005). |
| Pliocene | 5 | Arrival of rodents in Australia (5.5-5 Ma Rowe et al. 2008) |