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Adaptations for an arboreal life

For more than 20 years the late Stephen Jay Gould, the eminent American palaeontologist, wrote monthly essays for *Natural History Magazine*. Most were in the general area of evolutionary theory and his favourite theme was the quirky and paradoxical nature of natural selection. According to Gould, most of the forms encountered in nature are not optimal designs but structures that have been 'cobbled together' from available components to adequately perform the needed function. Form, in other words, is dictated as much by ancestry as it is by function.

And so it is with tree-kangaroos. On first encountering these amazing beasts Alfred Russel Wallace immediately recognised their affinity with terrestrial kangaroos:

> *They differ chiefly from the ground-kangaroo in having a more hairy tail, not thickened at the base, and not used as a prop; and by the powerful claws on the fore-feet, by which they grasp the bark and branches, and seize the leaves on which they feed. They move along by short jumps on their hind-feet, which do not seem particularly well adapted for climbing trees.*

Today, zoologists believe that the basic body shape of tree-kangaroos was inherited from a terrestrial ancestor that emerged sometime during the harshly