

Emergence

Words and Image by Alison Pouliot

The shrill chirping of cicadas on a summer evening is a quintessential sound of the Wombat Forest, second only perhaps to the *wulluk wulluk* quavering of corellas overhead, or the menacing deep grunt of a koala.

Australia's 200 odd species of cicadas range from tropical rainforests to the alps to coastal scrub. Each species has its own unique call, or rather, love song, as it is the sound of the males wooing females. One could be forgiven for thinking that female cicadas are deaf, as the serenading males can exceed an ear-splitting 100 decibels – that's about on par with a jackhammer or freight train. Their cacophonous racket also deters predatory birds, an advantage of being one of the world's loudest insects.

Unlike grasshoppers that produce sound by rubbing pegs on their legs against the edges of their forewings (known as stridulation), cicadas have two ribbed membranes called tymbals that are rapidly buckled by the tymbal muscle to produce sound. This is further amplified by air sacs in the cicada's hollow abdominal cavity.

More familiar perhaps than the striking lime-green living cicada is its alien-like exuvia – the sloughed off empty nymph exoskeleton that is left behind as a brown integument or casing. The nymphs often emerge in broods and their exuviae can be found in abundance on tree trunks and other vegetation throughout the Wombat. Perhaps the most captivating aspect of cicadas is this miraculous metamorphosis between instars (developmental stages).

Metamorphosis describes a biological process where an animal undergoes a conspicuous and abrupt change in body structure. The word is derived from the Greek language meaning 'transformation' (*meta* = after and *morphe* = form). In arthropods (insects and their kin such as arachnids and crustaceans) it involves the moulting of their exoskeletons. This is controlled hormonally.

Metamorphosis is an enthralling process to witness. I was about to enjoy my lunch by the Loddon, when I dropped my knife under the picnic table. That's when I spied this otherworldly transformation that was far more fascinating than my sandwich. Although feeling a tad voyeuristic, I was utterly transfixed for every second of the 44 minutes it took for the cicada's costume change to transpire.



The newly emerged imago rests while its freshly minted wings harden.
Photography © Alison Pouliot

Clasped to the leg of the picnic table with its powerful forelegs, I watched riveted as a lengthwise split magically opened up down the cicada nymph's thorax. After much shuddering, a 'new' head appeared through the 'shell'. A lot of writhing and wriggling and a gymnastic backbend later, a shiny imago (adult form) emerged from its drab brown encasement. It then slowly unfurled its brand new wings, gently vibrating them in preparation for a final fleeting life phase of feasting and flirting. How it fitted into its old costume remains a mystery as the 'new' cicada seemed so much larger, but perhaps it is like the enigma of one's tent that never seems to fit back into its strangely shrunken bag. Back above on the table again, my sandwich had mysteriously disappeared. I scanned the branches in vain for a guilty looking kookaburra, but figured I'd got the better deal.