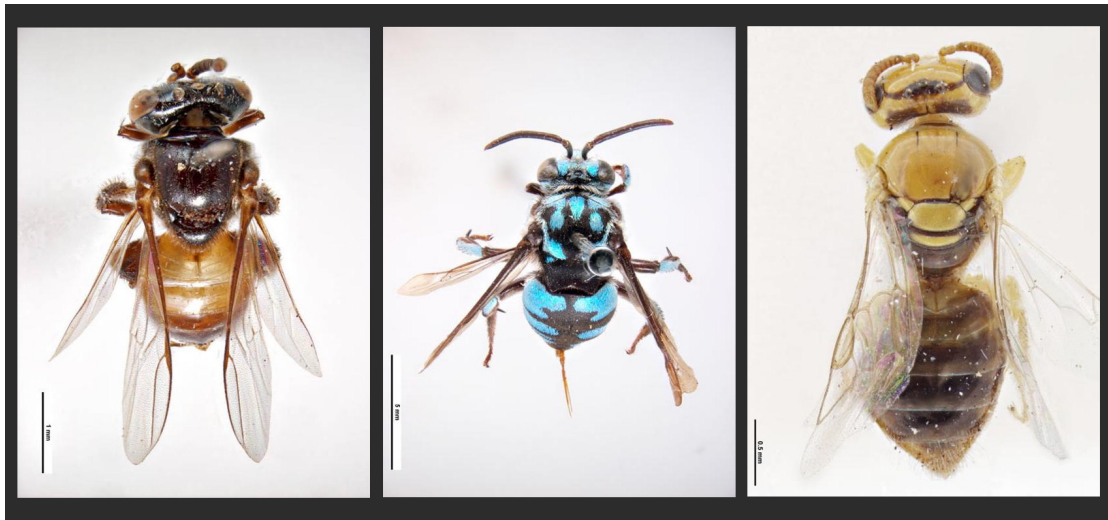


## The Extinction Fruit-machine : B..Movie (2017) : notes



The image of death is defined by stillness.

The photograph confers this without difficulty, but implies complexity. Is this the image of an insect frozen in flight by brief exposure, held in the eternal time of the daily round, gathering nectar and pollen? Or is it a specimen from an entomology lab, an invertebrate researcher's specimen, pinned with a lance of steel to a polystyrene block?

Attentive examination of the image confirms the latter.

The question arises; though the image is unique, what of the impaled creature? When did it live? Does its kind still exist? Is this the only record of an insect now extinct?

Collection of bees native to Australia began at the end of the 18<sup>th</sup> Century. Amongst the hundreds of specimens that Joseph Banks collected were a blue-banded bee, a resin bee, a carpenter bee and a wasp-mimic bee, animals still quite common today. Several entomologists added to knowledge of the genus into the 20<sup>th</sup> Century until the scattered evidence of some 1500 native bee species were gathered together in the Museum Victoria administered PaDIL (1) collection in the 2000s.

The bee specimens are the trail left through the work of the scientific community, a residue from measurement and observation seeking to distinguish and separate one part of the observable world from another, one creature from the next, one plant from another. The diversity of this fragment of the animal kingdom is delivered to our eyes and described with distinctions sometimes so slight that pursuit of a truth can only be achieved through the lens of a microscope or camera. The entomologists today can delve deeper using the analysis of DNA, dividing further and further.

Their work is important, as tracking the fortunes of the native bees (and wasps) is central to human survival. As pollinators they are responsible for the fruiting and thus continuation of bush plants and the production of commercial farming

crops necessary for our survival. It has been estimated that more than 35% of agricultural food production depends on insect pollination (2, 3, 4). The honey bee species (*Apis mellifera*), introduced to Australia, is central to this purpose, but is constantly threatened by a dozen different diseases in many parts of the world. More recently insecticides designed to tackle crop pests have been shown to threaten not only domesticated bees but also wild bees (5). In addition the loss of habitat in Australia and an overall reduction of biodiversity are leading to a situation where native bees can no longer compensate for honey bee loss; habitat suitable for native bees is becoming isolated from the crops requiring pollination. Feral honey bees, escapees from poorly managed hives, occupy sites in the bush suitable for colonies of the stingless bee, 'sugarbag', (of the tribe Meliponini, such as *Tetragonula carbonaria*).



*Common blue-banded bee, male, Amegilla sp. (photo M. Leggett)*

Destruction of bushland areas likewise, threatens the Australian native bees very survival. Of the estimated 2000 species in five entomological families, most are still to be described in detail. The majority of the bees live a solitary existence, laying eggs in plants and plant debris or in the ground, with the young emerging independently. Some females will cooperate by sharing the same egg-laying space; males meanwhile will be defending territory and be mating with the females.

Some of the specimens in the PaDIL collection are over 200 years old and in the way a grotesque image implies, the tortures and execution of medieval times, frozen as woodcuts and engravings, picture the idea that death comes as a series of agonies. Like the contorted cadavers in the catacombs of Palermo, the specimens serve to send a warning into the contemporary era.

The interactive installation, *The Extinction Fruit-machine : B..Movie* (2017), proposes to animate this warning about the loss of biodiversity. A selection from the online collection of 206 digital images is reanimated in apparent flights of the long dead, across three contemporary electronic screens. The three vertical screens are fed by a generative system, not the model from biology, but one based on the integers favoured by computers. The system halts the flight of the bees on each of the screens successively, but randomly. A pause, before they take to flight again. Inevitably the generative system will align all three images to match.

## Notes

1. PaDIL is an initiative of the Australian Government's Department of Agriculture, in collaboration with Museum Victoria, Plant Health Australia, the Department of Agriculture and Food Western Australia and the Plant Biosecurity Cooperative Research Centre. <http://www.padil.gov.au/about>  
Researchers' images licensed under Creative Commons Attribution 3.0 Australian License.

2. Wild Pollinators Enhance Fruit Set of Crops Regardless of Honey Bee Abundance Lucas A. Garibaldi et al. Science 29 Mar 2013:  
<http://science.sciencemag.org/content/339/6127/1608>

3. The future of pollinators for Australian agriculture. Saul A. Cunningham, Frances FitzGibbon and Tim A. Heard. CSIRO Australian Journal of Agricultural Research 53(8) 893 – 900 (2002) <http://www.publish.csiro.au/cp/AR01186>

4. Landscape effects on crop pollination services: are there general patterns? Taylor H. Ricketts, James Regetz, Ingolf Steffan-Dewenter, Saul A. Cunningham, Claire Kremen, Anne Bogdanski, Barbara Gemmill-Herren, Sarah S. Greenleaf, Alexandra M. Klein, Margaret M. Mayfield, Lora A. Morandin, Alfred Ochieng', Blande F. Viana. Ecology Letters V11 #5 (2008)  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1461-0248.2008.01157.x/full>

5. Neonicotinoid Pesticide Reduces Bumble Bee Colony Growth and Queen Production. Penelope R. Whitehorn, Stephanie O'Connor, Felix L. Wackers, Dave Goulson, Science 20 Apr 2012: Vol. 336, Issue 6079, pp. 351-352.  
<http://science.sciencemag.org/content/336/6079/351>

Western Australian Museum Entomology Factsheets › Native Bees  
<http://museum.wa.gov.au/research/collections/terrestrial-zoology/entomology-insect-collection/entomology-factsheets/native-bees>



Reed bee, male, *Exoneura* sp (photo: M. Leggett)