

# The Nature of Appearances

*This is an outcome of a long term, ongoing, collaborative art project with evolutionary scientists, Dr Steve Trewick & Dr Mary Morgan-Richards, Institute of Agriculture and Environment, Massey University, New Zealand which explores aspects of the environmental and cultural histories between New Zealand and Great Britain. Serving as both art and science, the project investigates a colony of *Clitarchus hookeri* phasmids (stick insects) naturalised in the Isles of Scilly, where questions of evolutionary adaption meet the cultural significance of migration and the lingering historic implications of early globalisation.*

text and images: **Jenny Gillam**

**T**he SS Arawa took forty-two days to return to England. It left Aotearoa New Zealand on March 27<sup>th</sup>, 1908 arriving in Plymouth on May 7<sup>th</sup>, leaving the southern hemisphere's autumn to arrive in the northern springtime.

One of the passengers, Major Arthur Algernon Dorrien Smith, proprietor of Tresco, was returning to the Isles of Scilly via Plymouth with a cargo of approximately 300 New Zealand plants held in Wardian cases<sup>1</sup> for the Tresco Abbey Garden.

Living in Aotearoa New Zealand, a bicultural country, the ongoing impact of colonisation on tangata whenua<sup>2</sup> is a fraught reality. Attempts to redress its impact are still being negotiated and are often controversial and highly politicised. Colonisation fundamentally shaped our society and continues to be a significant influence on our culture and environment. New Zealanders of European descent tend at times to think rather romantically about the beginnings of the colonial process. We imagine the early settlers struggling in the wilderness, nostalgic for their homeland, bringing familiar plants and animals, and transplanting British values and lifestyles in Aotearoa. The cultural and physical exchange was, of course, much more complex and dynamic. There were many other processes of exchange at play, including expeditions by early affluent horticulturists like Dorrien Smith who would visit with no intention of settling here, rather to collect our plants as specimens for their exotic botanic gardens at home.

This was Dorrien Smith's second trip to New Zealand where he travelled to many parts of the islands collecting seedlings. On this visit, he also accompanied a botany survey team on the 1907 Sub-Antarctic Scientific Expedition to the Auckland and Campbell Islands where they found a vast range of flora and fauna including a number of new species.<sup>3</sup>

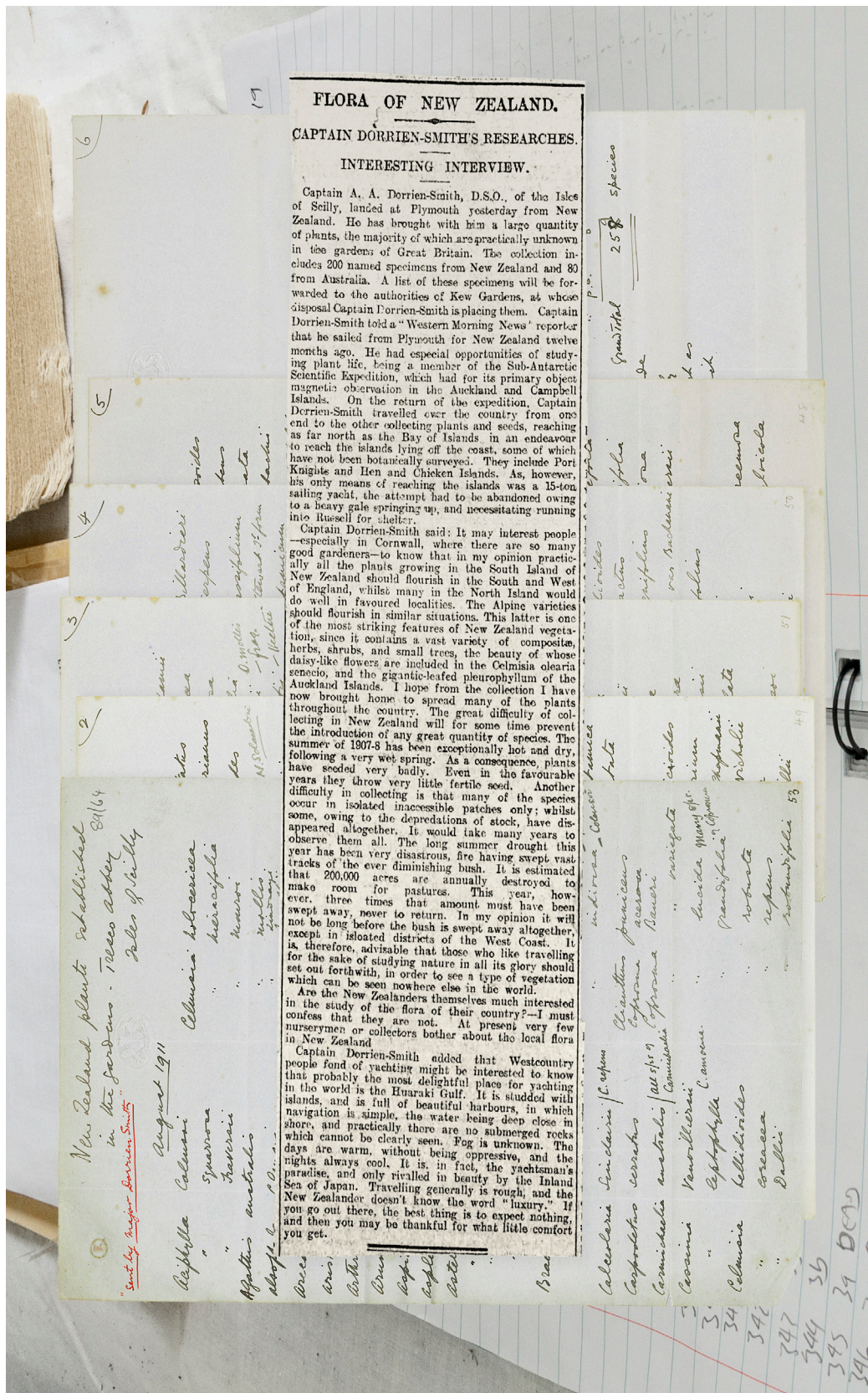
It wasn't until the 1930s that stick insects were discovered in the Tresco Abbey Garden, having likely travelled with Dorrien Smith's plants as eggs (or even a single egg) in compost. By searching New Zealand and British archives over a century later we were able to determine the travel dates and times that made it possible for the insects to survive travelling to the other side of the world. Newspapers around this time would routinely announce arrivals and departures of ships, including a list of passengers. Surprisingly



**Jenny Gillam**

From *The Nature of Appearances*, photographic montage, 2019. PC2 Insectary, Massey University, Palmerston North, New Zealand, 2014. Tresco Abbey Gardens, 2006. Aldersley, David James, Photograph of the ship Arawa in Wellington Harbour 27 March 1908 Alexander Turnbull Library, Wellington, New Zealand. Ref: 1/1-001061-G  
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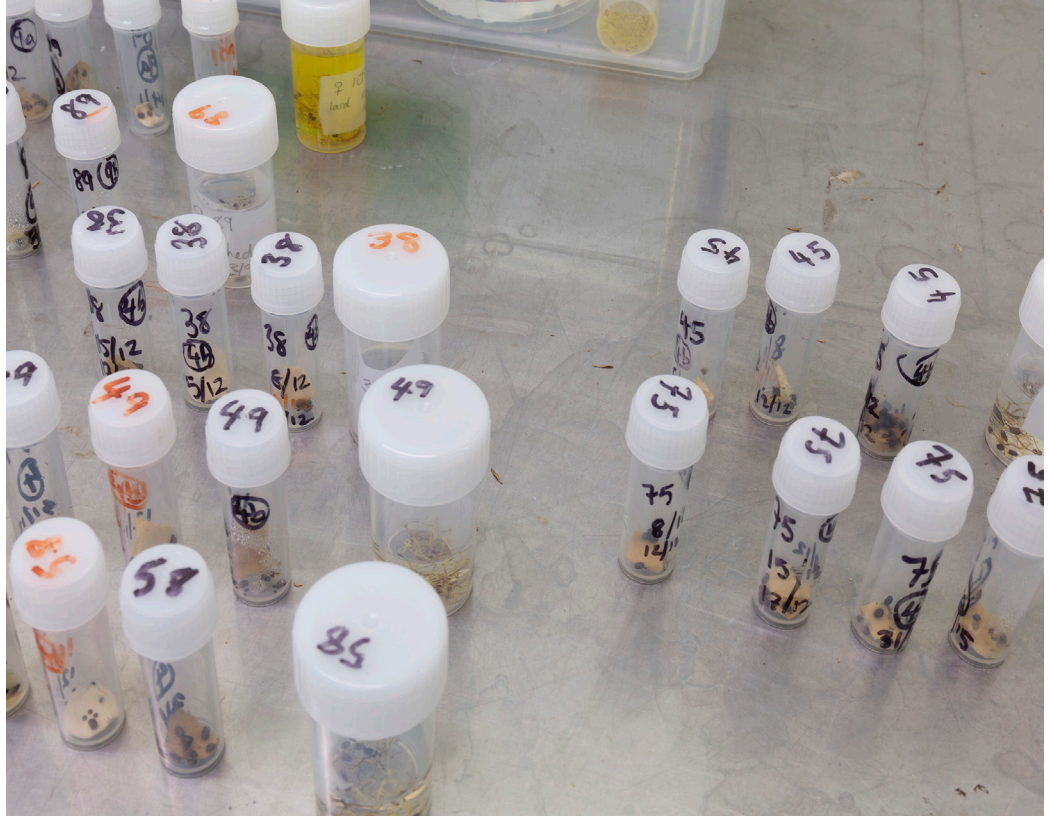




# Jenny Gillam

Logbook detail, PC2 *Insectary*, Massey University, Palmerston North, New Zealand, 2014. New Zealand plants established in the gardens, Tresco Abbey, Isles of Scilly, 1911. Auckland War Memorial Museum Library, New Zealand. Ref: MS-89/64. FLORA OF NEW ZEALAND Captain Dorrien-Smith's Researches. Western Morning News (Plymouth) – Friday 08 May 1908, page 7 © Jenny Gillam





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Members of the Auckland Islands party of the Sub-Antarctic Islands scientific expedition at a flying camp in the bush, at the end of a working day, Bollons, John Peter (Captain), 1862-1929: Album of photographs of scientific expedition to the Sub-Antarctic Islands, November 1907. The group comprises: From left: Robert Speight, Dr William Blaxland Benham, G S Collins (in front), A M Finlayson, Dr Leonard Cockayne (in front), John Smaillie Tennant, H D Cook, H B North, unknown, Captain Arthur A Dorrien-Smith, Edgar R Waite (in front), Bernard Cracroft Aston. Photo: Samuel Page, November 1907 Ref: PA1-q-228-31-2. Alexander Turnbull Library, Wellington, New Zealand PC2 Insectary, Massey University, Palmerston North, New Zealand, 2015 © Jenny Gillam





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Tresco Abbey Gardens, 2006. PC2 Insectary, Massey University, Palmerston North, New Zealand, 2014

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Tresco Abbey Gardens, 2006. PC2 Insectary, Massey University, Palmerston North, New Zealand, 2014

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we were also able to find an image of the SS Arawa<sup>4</sup> leaving Wellington harbour for Britain photographed on the date of Dorrien Smith's departure. Most significantly, we were able to deduce that if the plants had arrived at the Abbey Garden in winter, stick insect nymphs would likely have perished.

Britain doesn't have native stick insects but three species from New Zealand have successfully made it their home. It's funny to think that an insect known for its camouflage abilities was able to traverse the globe unnoticed as a stowaway and settle in the homelands of our European ancestors in a process of reverse colonisation – a colonisation of little tangible impact but significant in the socio-political and genetic histories it encompasses. The *Clitarchus hookeri* found in the Scilly Isles is the only known colony of this genus outside New Zealand. In New Zealand there are both male and female *C. hookeri*, some all-female populations reproducing parthenogenetically, and other mixed populations reproducing through mating.<sup>5</sup> There are only female insects in Britain. Unlike many of their New Zealand counterparts the all-female population, reproducing without males, have made genetically identical daughters for over 100 generations.

The last century has seen a significant shift in migration and biosecurity throughout the world. New Zealand's biosecurity is now amongst the strictest in the world because our economy is so reliant on farming and agriculture. Still, the long term implications of colonisation and the impact of introduced species has meant that some of our unique native flora and fauna is now vulnerable to extinction. Our current levels of biosecurity have meant that, while originating from New Zealand, these expatriate stick insects can now only return to New Zealand if they are held in a physical containment (PC) facility.

Between 2014 and 2018 a PC2 building at Massey University, New Zealand held live specimens of *C. hookeri* hatched from the eggs of the Scilly Isles stick insects. Evolutionary scientists, Dr. Mary Morgan Richards and Dr. Steve Trewick tried to crossbreed *C. hookeri* females from the UK with males from New Zealand to better understand the evolution of different reproductive strategies. Genetic testing has indicated that the Scilly Isles *C. hookeri* originally came from a population in New Zealand that included male insects, so it is of particular interest that they were able to reproduce parthenogenetically after traveling around the world. Crossing experiments revealed that although the Scilly Isles females mated with New Zealand males they mostly produced daughters. Despite being without males for only 100 generations the Scilly Isles females have acquired "a barrier to fertilization" and produced only about 3% of their offspring via sexual reproduction (sons and daughters).<sup>6</sup>

Alongside this genetic testing, several multimedia artworks about the *C. hookeri* have used scientific parameters to test theories of perception and behaviour; another drawing on this complex historical narrative and the lingering implications of early globalisation. A vivarium of live stick insects was included in each of the exhibitions.<sup>7</sup>

*The Nature of Appearances* juxtaposes historical ephemera of Dorrien Smith's expedition alongside contemporary photographs of mature New Zealand plants in Tresco Abbey Garden, Isles of Scilly taken during field research in 2006, and visual documentation of the PC2 insectary at Massey University, New Zealand during initial cross-breeding trials in 2014 and 2015. These digital montages bring together disparate elements of this little known colonial narrative in



an investigation of how seemingly small occurrences can reverberate through time and across the space of the globe, reflecting the historical conditions that have shaped and continue to impact upon our environment, society and culture.<sup>8</sup>

### ***Endnotes***

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[1] Wardian cases were designed by Londoner, Dr. Nathaniel Bagshaw Ward, in the early nineteenth century. The cases created a self-watering system by re-using condensation on the glass panels to enable living plants to survive long trips from the far corners of the globe.

[2] Tangata whenua are the indigenous Māori people. It translates as 'People of the land'.

[3] The Museum of New Zealand, Te Papa Tongariwa holds the holotype of the *Xanthorhoe oxyptera* Hudson moth collected by Dorrien Smith in the Auckland Islands 21 Nov 1907.

[4] As an aside the SS Arawa appears to be named after Te Arawa, one of the seven Māori ocean-going, voyaging waka (canoes) used in Māori migrations to Aotearoa New Zealand sometime between 1250 and 1300.

[5] Morgan-Richards, M.; Trewick, S.A.; Stringer, I.A.N. Geographic parthenogenesis and the common tea-tree stick insect of New Zealand. *Mol. Ecol.* 2010, *19*, 1227-1238. ISBN 10.1111/j.1365-294X.2010.04542.x.

[6] Morgan-Richards, M.; Langton-Myers, S.S.; Trewick, S.A. Loss and gain of sexual reproduction in the same stick insect. *Mol. Ecol.* (under review).

[7] *In Search of Self-Perception* (2010) Gillam, J., a multimedia installation at City Art Gallery, Wellington, New Zealand observed how two forms of stick insects moved around a vivarium in relation to the plants contained in it, and whether they attempted to remain on the plants that best camouflaged them.

*Sinatra vs Bublé – The Summer Wind* (2011) Gillam, J., a multimedia installation at The Engine Room Gallery, Massey University, Wellington, New Zealand playfully employed scientific methodologies observing 10 (non-hearing) insects' movement to two audio tracks played simultaneously – Frank Sinatra's 'The Summer Wind' from the left-hand speaker, and Michael Bublé's 'The Summer Wind' from the right. *At a distance of forty-two days* (2015) Gillam, J., Hansen, E., a large scale multimedia installation at Te Tuhi, Auckland, New Zealand presenting aspects of the Scilly Isles *C. hookeri* journey.

**Jenny Gillam's** art practice investigates visual constructs of the socio-politics of ecology. It engages with aspects of current debate around ecological tensions; humankind's relationship with animals and our place in the natural world. The resulting installations include elements of photography, audio, moving image, sculptural objects, as well as researching with living organisms within the gallery. She develops exhibitions as series, each extending a particular set of ideas, sometimes in a site specific manner and often produced collaboratively with other artists or with researchers from other fields. She studied photography in 1992-1993 at Carrington Polytechnic and gained an MFA from RMIT, Melbourne in 1999. She is a senior lecturer in the School of Fine Art, Massey University, Wellington, New Zealand.