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The political platypus and colonial koala – decolonising the way we talk about Australian animals

Jack Ashby

University Museum of Zoology, Downing Street,
Cambridge, CB2 3EJ

Email: Jda26@cam.ac.uk

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Abstract

Australian mammals are generally considered fondly, however there are particular trends in the way that they are represented in museums and other educational settings which inadvertently perpetuate a colonial view of these species by inferring relative inferiority. These tropes include describing species as 'weird and wonderful', 'strange', 'peculiar' and primitive; using often unhelpful comparisons with placental mammals; implying that convergent evolution is directional; the ways that placental-derived names deny Australian mammals an individuality; and the notion that 'everything in Australia is trying to kill you'. While these practices appear harmless, they risk devaluing and othering Australian wildlife. This paper traces the origins of these habits among early colonial accounts of Australia, and concludes that value judgements continue to be applied to Australian species, unlike animals from elsewhere. These subconscious suggestions that Australian animals are inferior have inevitable impact on the ability to lobby for their conservation; and were intertwined with political arguments for the British invasion and colonisation of Australia, which has had profound impacts on Indigenous Australians.

Keywords: Decolonisation; decolonial approaches; marsupials; monotremes; Australia; history of science; museum interpretation; taxonomy; public engagement; Indigenous Australia

Introduction

Decolonisation involves breaking down systemic hierarchies where European narratives have typically been elevated in the extent to which importance is placed upon them, and how much visibility they are afforded (Ashby and Machin, 2021) (for a wider discussion on decolonial research practices, see for example Smith, 2012). For good reason, decolonisation in museums is most commonly applied to human stories, often by highlighting how colonised people's (among others) contributions have been side-lined in order to promote European achievements (e.g. Ashby, 2020); or by being honest about the ways that

museum collections were put together as a product of empire (e.g. Das and Lowe, 2018) and much of the rest of this volume). However, the aim of this paper is to take a decolonial approach to explore whether European colonial narratives are also present in how we typically talk about some animals today, specifically Australian mammals.

In 1770, when James Cook landed on the east coast of what became known as Australia – and took possession of it for Great Britain – it fundamentally changed the political, social and natural worlds. This act was carried out on an



island which was part of the lands of Kaurareg (who hold native title today), Gudang Yadhaykenu, Ankamuthi and other Indigenous groups. Cook named it Possession Island, although it already had names including Bedanug and Tuidin.

The animals that the expedition encountered, described and exported would profoundly change the West's experience and understanding of zoology. This paper questions the ways in which Australian animals have been represented and described since the settlers and explorers of the seventeenth, eighteenth and nineteenth centuries arrived from Europe. As dramatic as it sounds, the ultimate question is whether – and how – the zoological and socio-historical stories of marsupials, platypuses, echidnas and other Australian animals may intertwine to have severe impacts on both global politics and conservation biology. The underlying assertion is that those early descriptions started a trend by which Australian wildlife is regularly denigrated through hierarchical language; and that museums risk being accidentally complicit in maintaining this practice today.

Museums create and utilise various platforms intended to engage audiences with the natural world, but which often use this questionable language, including in gallery text (labels and guides) and audio-visual interpretation, website content, publications, engagement activities (written resources and spoken content in events and films) and social media. Thankfully, these are in the museums' control, and so it is in museums' hands to decrease the incidence of this pejorative language and its effects. These suggestions could apply equally to any providers of information relating to Australian mammals.

'Strange' creatures: describing Australian animals

It is fair to say that today, Australian mammals are generally considered affectionately by the world at large, and it is unusual to come across explicitly (i.e. deliberately) negative descriptions of them in popular accounts. On the surface, either in tone or language, most descriptions of these species – in fiction and non-fiction books, television programmes (including cartoons and factual programming), museums and news articles – appear to treat them enthusiastically. Nonetheless, there are certain prevalent tropes for how nature in Australia is represented to the wider world which have implicitly negative connotations. They are considered fondly but not fairly. It is extremely common to see phrases such as 'weird and wonderful', 'bizarre', 'strange' and 'peculiar' being used. One illustrative example is a recent

cover-story about platypuses in *BBC Wildlife* magazine which read, 'Stranger things // Up close with nature's weirdest mammal' (Vergnani, 2019). Elsewhere, *The New York Times*' coverage of a story relating to monotreme genomes described the platypus as 'a Frankencreature' (Giaino, 2021). Additionally, in a slightly different way, platypuses and echidnas – but also marsupials – are regularly described as 'primitive' (see below).

Whilst these are arguably playful and are not necessarily negative in their own right, they are value judgments, which subconsciously continue to reflect a colonial mindset from early European descriptions of Australia. To pick one characteristic – and caricaturistic – example, there is this 1846 poem from English cleric Richard Whately (1787-1863):

*There is a place in distant seas
Full of contrarities:
There, beasts have mallards' bills and
legs,
Have spurs like cocks, like hens lay eggs.
There parrots walk upon the ground,
And grass upon the trees is found;
...Swans are not white, but black as
soot.
There neither leaf, nor root, nor fruit
Will any Christian palate suit,
...There quadrupeds go on two feet,
And yet few quadrupeds so fleet;
There birds, although they cannot fly,
In swiftness with your greyhound vie.
With equal wonder you may see
The foxes fly from tree to tree;
And what they value most, so wary,
These foxes in their pockets carry.
...Now of what place could such
strange tales
Be told with truth save New South
Wales?*

(Whately, 1846, pub. 2009)

A result of over two centuries of such teasing treatment is that it is extremely easy – and indeed probable – for an unintentional view to develop of Australia as an evolutionary backwater: that it is a country full of wonderful but ultimately peculiar little oddities. They are thereby reduced to colonial curiosities. By othering them in this way, we can detect a clear hierarchical narrative: the subtle implication is that Australian animals are lesser than species from other parts of the world. Arguably no wildlife in any other major landmass in the world gets consistently described in this way.

What's notable is that while nineteenth-century literature regularly used purple prose and human social value judgements for species from across the world (see, for example hyenas being described as 'repulsive', 'disgusting', 'cowardly' and 'maniacal' in (Wood, 1865), arguably Australasia is the only continent whose animals continue to be treated in that way today.

'Weird and wonderful'

To briefly unpick some of the terms associated with Australian animals mentioned above, two examples from the BBC Natural History Unit and the Natural History Museum, London (NHM) are typical of the way museums and other institutions with pedagogic missions may use them (it is not my intention to single these organisations out unfairly; I highlight them as two of the UK's major windows onto the natural world). In the BBC's landmark *Seven Worlds, One Planet* series, the blurb describing the episode about Australia reads, 'Isolated for millions of years, the weird and wonderful animals marooned here are like nowhere else on Earth.' (BBC, 2019). Not only does this include the 'weird and wonderful' trope, but it introduces the commonly repeated notion that Australia is isolated, which similarly has the effect of othering the fauna. In truth, Australian wildlife cannot be considered 'marooned', given that half of its native mammalian fauna (a quarter are bats and a quarter are rodents) descends from relatively recent waves of colonisation from Asia (Van Dyck and Strahan, 2008), and for instance, three of the world's most numerous groups of birds (collectively making up the majority of the world's bird species) – songbirds, pigeons and parrots – first evolved in Australasia but subsequently dispersed out of it (Low, 2016).

Second, when promoting an online event, the NHM tweeted 'Join us from 1200BST tomorrow to learn all about mammals, from the peculiar platypus to the humble haster' (@NHM_London, 2020). Both of these instances appear innocuous, but what do they actually mean? It is easy to demonstrate that literally every animal on earth is weird or peculiar. From deer to ants, bees to rhinos, and bears to owls, every animal is strange, and yet why is it that Australian animals so consistently get these labels applied to them?

These tropes are used as they are intended to engage through encouraging excitement. The notion of oddness and weirdness can appear to be an easy way to pique audience interest without having to provide any specific information. Their use relies upon the pre-existing public assumption that Australian animals are bizarre – a notion

which is deeply rooted in Australia's colonial history – and helps to perpetuate it. I believe this idea is grounded in subconscious colonial framing in a way that denigrates these animals.

No malice is intended by the use of these terms (particularly as it is reasonable to assume that they are used in the spirit of attempting to garner enthusiasm for the natural world – which are key missions of museums and natural history broadcasters). We can trace the roots of how the trope developed to the earliest written descriptions of Australian animals by Europeans. In the 1790s, Watkin Tench, diarist of the founding British settlement at Port Jackson, wrote:

'We have killed she-kangaroos whose pouches contained young ones ... At its birth... the kangaroo is not so large as a half-grown mouse. ... This phenomenon is so striking and so contrary to the general laws of nature, that an opinion has been started that animal is brought forth not by the pudenda [genitalia], but descends from the belly into the pouch by one of the teats.'

(Tench, 1793)

Tench's suggestion that kangaroos gave birth directly through their nipples became common among the European colonists, and it was likely influenced by a questionable translation of a seventeenth-century Dutch account of tamar wallabies by Francisco Pelsaert on the Houtman Abrolhos islands off the Western Australian coast (Pelsaert, 1629, trans. 1994). Tench's suggestion that kangaroo reproduction was 'contrary to the general laws of nature' puts marsupials well and truly beyond the realms of normality, and into the alien. Despite his wording, Tench was not referring to natural 'laws', he was referring to his own notions of what nature should be like, which were the result of the society he was part of. This is an early demonstration of the wider point: Western or 'Old World' animals have acted as the zoological standard, and in not being perceived as conforming to that standard, it is implied that Australian species are inferior to it.

'Primitive'

If the 'weird and wonderful' trope is most common in light-hearted or popular descriptions of Australian mammals, there is another term that is often also found in authoritative or apparently scientific accounts, and that is to state or infer that they are 'primitive'. This descriptor is most typically associated with platypuses and echidnas – the egg-laying mammals, known as monotremes – but is also applied to marsupials. As an example from museum interpretation, at the time of my

most recent visit (June 2019), the Field Museum's displays of monotremes and marsupials were positioned under a banner which reads 'Early Mammals', even though the species on display are all extant. Again, I don't mean to single out the Field Museum as an outlying perpetuator of this problematic message. It is well acknowledged in museums that permanent displays can be the most challenging to find budget to regularly refresh, seeing as they do not directly generate income in the way that temporary exhibitions can. The Field Museum is undergoing a redevelopment of its Indigenous American displays with an aim to remove problematic messaging. It is hoped that the discourse in this paper will encourage museums with natural history collections to interrogate their own displays and interpretation for similar practices. Perhaps they could then argue that historic colonial-derived terminology in their displays deserve resources being allocated for their refreshment. Similar assertions can be found in the scientific literature, such as in a book (Lewis, 1996) about the blood-clotting adaptations of different groups of animals – platypuses featured along with wallabies, to which they are only distantly related, in a chapter titled 'Primitive Australian Mammals', without any justification for this hierarchical view of nature. No living complex species should ever be described as primitive (Ashby, 2017).

The ancestors of modern marsupials and modern placental mammals (the group which includes the majority of living mammals, including humans and all mammals found in Europe) diverged approximately 160 million years ago (Newton, et al., 2018). This means that the two groups are exactly the same age. As such, there can be no logical justification for describing marsupials as primitive or 'early', which means we must look for an illogical one. I suggest that it stems from a subconscious hierarchical view of nature which places humans and other mammals like us as superior to species that do things differently.

Whilst describing living monotremes as primitive is also scientifically inaccurate, it does likely stem from a common misunderstanding about evolution. Nonetheless it is reasonable to assume that in this instance, the misunderstanding is made more probable given the underlying attitudes to Australian mammals. While living species should never be described as such, individual *features* are often described as primitive. This is used as a shorthand to indicate that a certain characteristic in a certain species has been inherited from its ancestors without much modification. In monotremes, egg-laying is described as primitive as it is a feature

which they inherited from mammals' reptile-like ancestors. It is singled out because it has been lost in the other mammal groups – marsupials and placentals – but is retained in monotremes. From there, people incorrectly make the leap to describe the species as primitive. But birds lay eggs too, a feature they also inherited from their reptilian ancestors, dinosaurs. So why does egg-laying make platypuses primitive, whereas the term is never applied to birds? The fact that humans have legs is also a primitive trait, because we evolved it from our fishy ancestors. However, we aren't considered primitive for having legs. The notion of primitivity in monotremes is a human-centred value judgment without any scientific meaning. All species have primitive traits, but that does not make the species primitive.

This label is just another colonial undertone which can be traced back to countless historical accounts. Among them, arguably one of the most influential popularisers of natural history in Victorian Britain was John Gould. In the introduction to his 1863 work *The Mammals of Australia* he supposes that the species there are stuck in a lowlier form of development, 'I may ask, has creation been arrested in this strange land?' (Gould, 1863). Another widely disseminated book was Arthur Mee's *Popular Science* that claims that marsupials are 'a low type of small-brained animal approaching the reptile, and developed chiefly in Australia' (Mee, 1912). This notion that marsupials have small brains was so ingrained that nobody had thought to check whether it was true, until 2010, when no differences in brain-size were found between placental and marsupial mammal of equivalent body sizes, if primates were excluded from the comparison – a group that is characterised by unusually large brains. In fact, at smaller body sizes marsupials had relatively large brains compared to their placental counterparts (Weisbecker and Goswami, 2010). This suggests that marsupial science had been held up by unscientific prejudices against them.

Denying individuality through comparison

Aside from the specific pejorative words, it is common to see Australian animals, and particularly marsupials, described through comparisons with well-known placental mammals, even when those comparisons do not stand up to scrutiny. For example, quolls are smaller, spotted carnivorous relatives of the Tasmanian devil, from Australia and New Guinea. They are very commonly described as 'cat-like', despite the fact that they share few distinguishing features with cats – they have long pointed faces (cats' faces are short and round) and very short legs (cats have long legs),

with bright white spots against a solid dark background (if cats are spotted, they are dark spots against lighter backgrounds). Likewise, the small carnivorous marsupials such as antechinuses, planigales and dunnarts are said to be 'mouse-like'. These descriptions do not fit the natural history or appearance of the species in question.

Using familiar species to describe unfamiliar ones might be assumed to be a useful method of communicating what they look like in an accessible way (for example by describing ichthyosaurs as 'dolphin-like reptiles'). However, as well as considering whether the comparisons are accurate, we need to think about where this practice positions the animals in any perceived hierarchies, and whether the comparison has particular risk of creating misunderstandings. Constantly describing Australian mammals in terms of how they resemble mammals from the rest of the world could be argued to place them as secondary to them, effectively denying Australian animals an identity in their own right.

In any case, when the comparisons are inaccurate, they render the descriptions useless. All of the Europeans that encountered hopping marsupials before James Cook's visit in 1770 used Old-World species to explain what they saw. The first was in 1606, when the Spaniard Don Diego de Prado y Tovar described what was probably a dusky pademelon (a wallaby-relative) in New Guinea. He wrote that it was,

'in the shape of a dog smaller than a greyhound, with a bare and scaly tail like that of the snake, and his testicles hang from a nerve like a thin cord; they say that it was a castor [referring to a beaver], we ate it and it was like venison'.

(George, 1964)

Subsequent pre-Cook accounts are similarly broad in the number of species they use to describe marsupials, and as difficult to relate to the animals themselves (for other examples see Ashby, 2015). While Cook had read the accounts of these voyages, when he himself met kangaroos he – understandably – failed to realise he was seeing similar species to those explorers who had come before. This demonstrates that such comparisons are of limited value.

Nonetheless Cook continued the tradition in his own reports (as did Joseph Banks, whose diary entries describing the kangaroos over this period are almost identical). Here follow some entries

from Cook's diary (reproduced in Cash, C. G. (ed), c.1905):

'June 22nd, 1770.

Some of the people ... had seen an animal as large as a greyhound, of a slender make, a mouse colour, and extremely swift.'

June 24th.

I saw myself one of the animals ... It was of a light mouse colour, and in size and shape very much resembled a greyhound; it had a long tail also, which it carried like a greyhound; and I should have taken it for a wild dog, if instead of running, it had not leapt like a hare or a deer. Its legs were said to be very slender, and the print of its foot to be like that of a goat.'

8th July.

some of our men saw four animals of the same kind, two of which Mr. Banks' greyhound fairly chased ... These animals were observed not to run upon four legs, but to bound or hop forward on two.'

July 14th.

Mr. Gore ... had the good fortune to kill one of the animals ... In form it is most like the jerboa [hopping rodents], which it also resembles in its motion, but it greatly differs in size, the jerboa not being larger than a common rat, and this animal, when full grown, being as big as a sheep'.

Despite the fact that Banks said, 'To compare it to any European animal would be impossible as it has not the least resemblance of any one I have seen' (Banks, 1770), this brief excerpt compares kangaroos to a greyhound (three times, in shape, size and tail), a wild dog, a hare and a deer (in movement), a goat (in footprint), a mouse (in colour), a jerboa (in movement and shape) and a sheep (in size) (Ashby, 2012). Aside from the entry for July 8th, there is very little here that would allow a reader to recreate the image of a kangaroo in their mind's eye.

Naming

The legacies of this comparative habit are perhaps most evident today in some of the names that are used for these species. Their scientific names regularly deny their individuality:

- Koalas' scientific name is *Phascolarctos*: 'pouched bear'.

- Bandicoots' scientific name is *Perameles*: 'pouched badger'.
- *Phascogale* is a genus of small carnivorous marsupials, meaning 'pouched weasel'.
- Pademelons' (small kangaroo-relatives)
- scientific name is *Thylogale*, which also means 'pouched weasel'. This is particularly lazy as pademelons are five-kilo hopping marsupials, and do not resemble weasels at all.
- *Antechinus* means 'similar to a hedgehog', although none are spiny and are a fraction of the size of a hedgehog.
- Dasyures are New Guinean carnivores with the scientific name *Phascosorex*: 'pouched shrew'.
- Thylacines are named *Thylacinus cynocephalus*: 'pouch-like dog-head'.

(Note on thylacine etymology: *Thylacinus* is almost universally said to mean 'pouched dog' from the Greek *Thylakos* (pouch) and *Kyon* (dog); and so *Thylacinus cynocephalus* would mean 'pouched dog dog-head' (Strahan and Conder, 2007). However, thylacine-researcher Douglass Rovinsky noted (pers. com.) that in other names, '-inus' means 'like', for example *anatinus* means 'duck-like' in the platypus's name. We could think of no other times when a reference to dogs was spelt with an i as in -cinus rather than a y as in cynocephalus. There is no etymology given for the name in Temminck's original French publication which names the animal *Thylacinus* (Temminck, 1824). I suggest that *Thylacinus cynocephalus* directly translates to 'pouch-like dog-head'. Temminck had seen no female specimens and mentions the 'sac' into which the males' scrotum fits, so perhaps that is the pouch the name refers to, but this is just my conjecture.)

The habit of using Old World models as the standard for naming Australian species is not restricted to scientific names, but is prevalent in common names too. Museums can avoid these unhelpful comparisons and allow Australian mammals to be freed from attempts to fit them into European boxes by avoiding Eurocentric names, as well as inaccurate comparative descriptions themselves. This does not involve opting for obscure names, as many uniquely Australian names are widely in circulation. Thylacine is preferable to 'Tasmanian tiger' or 'marsupial wolf/hyena'; quoll is preferable to 'native cat' or 'tiger cat'; 'marsupial mouse' should be avoided for any of the small carnivorous marsupials (including dunnarts, mulgaras, ningauis, antechinuses, false antechinuses, dibblers, kultarrs, kalutas, kowaris and planigales); bettong and potoroo are preferable to 'rat kangaroo'; echidna is preferable to 'spiny anteater' and numbat is

preferable to 'banded anteater'. Many museums are already doing this, as anecdotally it appears more common to see the comparative names on historic display labels than on modern ones.

Some of these have the benefit of being based on Indigenous words for the species, acknowledging the deep history that Aboriginal Australians have with their native fauna, and the role Indigenous knowledge played in knowledge-acquisition by Europeans (see Olsen and Russell, 2019). For example, 'quoll' derives from 'Je-Quoll' – a Guugu Yimithirr word for the animal, recorded in Joseph Banks' diary from the *Endeavour* voyage, along with 'kangaroo' (Banks, 1770). This was the first time that an Aboriginal Australian language is known to have been written down. Rakali is increasingly being used for *Hydromys chrysogaster* Geoffroy, 1804 in favour of 'Australian water rat' across all of Australia, but it should be noted that some common names derived from Indigenous words are only typically applied to individual animals from specific parts of the country, acknowledging that different species had different names in different languages (Van Dyck and Strahan, 2008; Menkhorst and Knight, 2004). For example, boodie and chuditch are names only applied to individuals of *Bettongia lesueur* (Quoy and Gaimard, 1824) and *Dasyurus geoffroii* Gould, 1841 respectively if they come from Western Australia – elsewhere the names burrowing bettong and western quoll are more commonly applied (but other Indigenous names are also in common circulation for these species in other parts of the country). Further positive steps in this area include a project by the Atlas of Living Australia to ethically map Indigenous names of plants and animals to scientific binomial names in its datasets (Duncan and Ashby, 2019). While Indigenous words have been incorporated in taxonomic names since the early days of Western taxonomy in Australia, it is encouraging to see recently described mammal species names derive from Aboriginal words. For example, the newly described species of extinct pig-footed bandicoot was named *Chaeropus yirratji* Travouillon, et al. 2019– yirratji being the Warlpiri word for the local species (Travouillon, et al., 2019).

The Australian Mammal Society published guidance on the use of common names (Strahan, 1980) recommending they be descriptive, pleasing to the ear and memorable, and reflect true relationships, while acknowledging the value of Aboriginal names. Others have since stated preferences for inclusion of words that correspond to the genus, to communicate relationships between species. For example, although the Aboriginal names Kakarratul for *Notoryctes caurinus* Thomas, 1920

and *Itjaritjari* for *Notoryctes typhlops* Stirling, 1889 are increasingly used, Jackson and Groves suggest northern marsupial mole and southern marsupial mole respectively (Jackson and Groves, 2015). While most of this guidance is not contradictory to the recommendations above, there are occasions like *Notoryctes* when museums may wish to decide for themselves between prioritising decolonising the names, or to communicate the relationship. This example is particularly fraught as it involves a comparative term to European moles, albeit a reasonably sensible one.

Convergent evolution

There are situations when marsupials and placentals do warrant close comparison, and that is in instances of convergent evolution – another topic that is regularly discussed in museum content. Convergent evolution is where similar features which perform similar functions evolve independently in different species on different branches of the tree of life. A prime example of this between marsupials and placentals is the extraordinary similarities between the adaptations of aye-eyes and striped possums. Aye-eyes are famously wood-pecking lemurs from Madagascar. They bite holes in tree branches with long, protruding, curved incisors, and use a remarkably elongated, single thin digit to hook beetle grubs out of these holes. Striped possum are marsupials from Australia and New Guinea which do precisely the same thing. They also have prominent, sharp, forward-pointing incisors for gouging holes, and a single long, skinny finger for hooking grubs. The only notable difference is that aye-eyes' third finger is the longest, whereas it is the fourth in striped possums. Striped possums also have the largest brain relative to body size of any marsupial, again showing a similarity with primates (Ashby, 2017).

Aye-eyes are well-known for their adaptations, thanks to regular features in natural history documentaries and in popular writing, whereas striped possums enjoy almost no limelight. It is not unreasonable to suggest that this imbalance is a result of placental chauvinism (*sensu* Paddle, 2000), but the key point relates to how convergences like this are commonly described. When placentals and marsupials have evolved similar features, it is typical for to hear, for example, that striped possums are 'marsupial versions' of aye-eyes. Likewise, thylacines are said to be 'marsupial versions' of wolves; *Notoryctes* are 'marsupial versions' of placental moles; and Tasmanian devils are 'marsupial versions' of hyenas. This phrase implies that marsupials have evolved *in order* to be like placental mammals; that one is the original and one is the cover version, and that's not how evolution

works. As in music, the cover version is never considered as good as the original. This implies a hierarchy which has no biological reality.

Everything is dangerous

Another common trope that paints an unreasonable picture of Australian wildlife is that everything there is dangerous (see for example an article in *The Huffington Post* entitled, 'Everything In Australia Wants To Kill You, In This Order' (Degnate, 2017) and the presenter of the BBC programme *Deadly 60*, Steve Backshall, describing Australia as the 'home of deadly' in *Australian Geographic* (Dineley, 2013). Museums may be tempted to reflect this notion in their content. Australia is certainly home to venomous organisms that pose a risk to humans, including snakes, spiders, jellyfishes, octopuses, ants, centipedes, stonefish, stingrays and even trees, plus sizeable crocodiles and sharks. However, this is not an unusual list for any coastal country outside of Europe. Further, very many other countries have several large land predators *in addition* to these, from big cats to bears; and massive herbivores which cause injuries to humans. As such, despite its reputation, one could argue that Australia is *less* dangerous than nearly every other continent. It is home to only some of the types of animals that people are often fearful of, whereas most other parts of the world have many more.

While the potency of the venom of some Australian snakes is extremely high, a report from Australia's governmental science body, CSIRO, outlined how the commonly stated notion that Australia contains the world's most dangerous snakes is inaccurate: there are very few human deaths from snake bites there each year, but tens of thousands across Asia, Africa and South America (Fender-Barnett, 2019). Much of the difference in fatalities is due to the differences in the likeliness of people encountering snakes, and the availability of medical interventions. Nonetheless the unique synonymy of Australia with killer creatures is noteworthy. In actuality, a study of the human toll of envenomation by animals in Australia between 2000 and 2013 found that stings from bees, hornets and wasps were responsible for more than twice the number of hospitalisations (12,351) as snakebites (6,123. NB. this figure also includes lizard bites). Beestings alone caused almost the same number of deaths (25) as snakes (27). Spiders caused no deaths (Welton, *et al.*, 2017). It is important to note that no native bee species in Australia have stings – these hospitalisations and deaths are caused by introduced European honeybees.

This commonplace attitude is just another form of colonial denigration; another unobvious hint that Australia is uncivilised and primitive. Considering the above tropes together, it is clear that Australian wildlife is subtly and subconsciously written off as inferior, even within Australia itself.

These suggestions should not be dismissed as navel-gazing 'woke' complaints – the characterisations so far described have real-world impacts. All of these issues fundamentally devalue Australian fauna, with significant human and ecological consequences.

Discussion: the impact on extinction

Although it would likely be impossible to demonstrate cause-and-effect in Australia's case, it is reasonable to assume that species that are valued less do not enjoy the same prioritisation when it comes to environmental protection.

Albeit inadvertently, the pervasive language that creates an impression that Australian animals are inferior inevitably impacts their extinction-rates and conservation. It is harder to make the political arguments to conserve them because they have been devalued by negative stereotypes. Equally, a misguided assumption that they are in crisis because of that alleged inferiority also damages the urgency to protect them: they risk being incorrectly written-off as biologically determined to go extinct.

Australia has the worst mammal extinction rate of anywhere in the world. In the 233 years since Britain invaded Australia, more mammals have gone extinct there than anywhere else. At least 30 Australian species have been lost entirely (almost 10% of the entire mammalian fauna). Taking into account the terrestrial species listed as extinct by the International Union for the Conservation of Nature, who consider a species extinct once 60 years have passed since they were last seen, 37% of mammals that have gone extinct anywhere since 1788 were Australian (IUCN, 2021).

Since the first of those extinctions, probably in the 1840s, Australia has lost one to two species every decade, and that rate appears to be holding true in the twenty-first century so far (Woinarski, *et al.*, 2015). Of those species that do survive, many have been reduced to a minute fraction of their pre-European range. Prior to the 2019-2020 Australian bushfires – which are assumed will have increased the extinction risk of many others – 124 land mammal species were considered to be threatened with extinction in Australia, or near threatened (Legge, *et al.*, 2018).

Australia's nationwide environmental catastrophe of the last 200+ years has a number of drivers. At the top of the list are introduced carnivores that the Europeans brought with them. Cats were imported both as pets and for rodent control. Foxes were imported simply to be hunted. On top of that, habitat destruction, primarily for agriculture and industry, has taken place at a continental scale. Land clearing in Queensland alone – the state with the highest rate of loss of native vegetation – was estimated to kill 100 million native mammals, birds and reptiles each year (Cogger, *et al.*, 2003). Watercourses are diverted for irrigation as well (over half the waterways that feed the largest catchment in the country – the Murray-Darling basin – have disappeared since colonisation (Gammage, 2011), stripping precious water from ecosystems. Alongside this came the introduction of non-native pigs, cane toads and herbivores (sheep, cattle, goats, camels, donkeys, horses, deer, buffalo, rabbits and hares) for food, pest-control, sport hunting and transport, all of which have eaten, trampled, buried and pooped on native vegetation and soils to such a degree that few native animals can prosper alongside them. If plants manage to avoid the livestock themselves, these newcomers compress the soil so water runs off it more quickly, changing which plants can live there anyway. Plus, this modified land then holds less water, so droughts hit harder and are more difficult to break.

These are the direct drivers of extinction, however the overriding cause of this conservation emergency is that the Australian government has consistently failed to sufficiently protect its native wildlife. This was the conclusion of a ten-year review of Australia's Environment Protection and Biodiversity Conservation Act (Samuel, 2020) – the major piece of national legislation which supposedly safeguards species and ecosystems. The fantastic work that conservationists undertake in Australia is achieved against a backdrop of weak federal environmental protection. The review found the Act to be ineffective, and that very little had been done to enforce it over the twenty years since it has been in place. Essentially, it creates laborious and inconsistent processes for how to assess whether species or habitats are threatened, particularly by major industrial developments like coal, gas and mineral extraction. If species are found to be at risk, plans have only rarely been developed for how to help them recover, and the Act makes no requirement to do so.

The review found that environmental laws in Australia were rarely policed, and when they

were, the penalties for breaking them were minor. The combined fines issued to developers who failed to deliver the environmental safeguards they had committed to were lower over the course of a decade than the parking fines individual local authorities collected in a single year (Samuel, 2020).

Australia has no legislation on its statute books which obliges the government to actively protect its threatened species, and so it doesn't. Australia has powerful industrial lobbies – for mining and mineral extraction, and for farming. In the context of this paper, it is worth noting that these are all themselves clear legacies of colonialism. These special interests have far more political power than marsupials and monotremes.

I suggest that this is all tied-in to the way they are represented to the outside world, and within Australia itself. As long as people continue to incorrectly infer that Australian wildlife is merely a weird bunch of primitive curiosities; cute, but inevitably doomed to be outcompeted by a superior evolutionary force from the north, then conservation is unlikely to be prioritised. If we add to that the incorrect but popular idea that they are less intelligent, the ill-informed might suggest that they are 'too stupid to survive'. Australian mammals are devalued by the way they are represented in everyday language, museums, popular culture and scientific research, and this is having a catastrophic impact by inevitably contributing to the extinction crisis. There are clearly many factors that are involved in mitigating the impact of the extinction-drivers mentioned above, but accidentally perpetuating negative stereotypes isn't helping the situation. Seeking to reduce the use and impact of those stereotypes is one relatively simple contribution museums and other trusted sources of information could make.

Discussion: the impact on notions of *terra nullius*

Another impact of pejorative inferences about Australian wildlife are the consequences for the people of Australia. Since European invasion, not only have species gone extinct, but Aboriginal Australian peoples' relationships with their country have been fundamentally changed (Olsen and Russell, 2019). (Unlike the sanitised and euphemistic word 'settlement', using the word 'invasion' recognises that European colonisation of Australia was not a gentle process. Many thousands of people died violently, and others were dispossessed of their land and sovereignty (Gammage, 2011). Museums may wish to use this term as part of decolonial practice.)

Invasion, occupation and colonisation were justified through the notion of *terra nullius* – meaning 'nobody's land' – by which the colonial establishment argued that Australian Aboriginal people were too uncivilized to lay legal claim to their land, and as such they did not own it. (On this topic, museums should be careful to avoid the suggestion that Europeans 'discovered' Australia, or any of its species, given that Indigenous Australians arrived there at least 60,000 years ago.) Instead, the narrative became established that Indigenous Australians were primitive hunter-gatherers; that they successfully exploited natural resources by passively moving across the land, but not by actively managing it.

This assumption remains pervasive today, however two recent works – by Bruce Pascoe (Pascoe, 2018) and Bill Gammage (Gammage, 2011) – have synthesised the arguments that across many parts of Australia, people were not hunter-gatherers at the time of European invasion. Early colonial accounts describe large permanent settlements alongside complex agricultural systems, fish-farming, the use of crops and intricate land-management practices operating through decades-long cycles. It is not true to say that all Indigenous Australians were hunter-gatherers and museums today should avoid describing them as such.

I suggest that the perceived status of the people and the animals in Australia were fundamentally intertwined in the minds and the words of the colonisers. It served their political narrative to dismiss both people and animals as primitive and inferior, because it augmented the arguments to justify the invasion. By tying animals and Aboriginal people together in an alleged collective inferiority, it became easier to paint Australia as a primitive, degenerative backwater. Through their denigrative written descriptions, the imperial establishment created a hierarchy in which Europe was made to look superior to Australia in every respect – the people, the animals and the climate.

There has been over-writing of both Australian cultures and ecosystems; people and animals have been dispossessed of their land. While colonists replaced or sought to replace human communities as owners and occupiers, European Acclimatisation Societies methodically sought to replace the fauna and flora of the land with familiar species from home. These locally organised groups aimed to bring a sense of comforting suburban England to the colonies by introducing familiar British species. They were also driven by the notion that their new home was faunally impoverished, and that the European species they let loose would improve

the landscape, again reflecting the attitudes relating to what was happening with Australia's new and existing human inhabitants.

The environmental legacy of many of these introductions is the major contribution they make to the extinction crisis discussed above. And the human legacy of these historical attitudes remains. Aboriginal and Torres Strait Islander communities continue to be institutionally marginalised in modern society, and many believe that the structure of the Australian constitution continues to be systemically racist (Bond, 2017).

Conclusion – what does this mean for museums?

Since their earliest encounters with Australian mammals, Europeans have consistently denigrated them through pejorative descriptions. While animals from other parts of the world were also subject to human value judgements in historical literature (see e.g. Thomson, 2008), arguably nowhere else on earth continues to be treated in this way today. A fuller comparison contrasting European descriptions of other continents' fauna with accounts of Australian species over time would be instructive (and this is discussed at length in (Ashby, In press, 2022)). It is interesting to note that notions of 'nobility' are often applied to African and Asian mammals, such as elephants, lions and tigers, but such descriptors are never given to Australian mammals. Pejorative descriptions of Australian mammals have become subconscious and socially ingrained, yet it is easy to trace their roots among hierarchical colonial attitudes that were based on assumptions that European fauna was superior to animals found in colonised territories.

I have provided suggestions to help museums avoid practices that risk maintaining these hierarchies by othering Australian animals. Some are specific, such as omitting suggestions that these species are 'primitive', being careful not to imply direction in convergences, selecting less comparative descriptions and common names (when options exist), and by not describing Indigenous Australian societies as nomadic hunter-gatherers. Other suggestions are more general. Museums should be conscious of whether language they use to describe Australian mammals could imply a hierarchy in any way, or give the impression that some species are 'weird and wonderful', 'strange' or 'peculiar'. These risk inferring that they are just evolutionary oddities, curious things that are fun to look at but ultimately less valuable than animals from the other parts of the world.

In propagating these views, museums risk perpetuating the subconscious assumptions that placental mammals – and European wildlife in general – are the zoological standard, and that anything that does not closely comply with that standard is biologically determined to be inferior to it. This is not only bad science, but has real world consequences for environmental conservation and human social justice.

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References

- @NHM_London, 2020. Promotional tweet. *Twitter*, 27 August, p. Accessed online August 27 2020.
- Ashby, J., 2012. Kangaroos cooked up by Cook. *UCL Museums Blog*, 13 March, p. Accessed online May 16 2020.
- Ashby, J., 2015. The earliest Strange Creatures: Europe's first meetings with marsupials. *UCL Museums Blog*, 2015 May, p. Accessed online May 16 2015.
- Ashby, J., 2017. *Animal kingdom: a natural history in 100 objects*. Gloucester: The History Press.
- Ashby, J., 2020. Telling the truth about who really collected the "hero collections". *The Natural Sciences Collections Association Blog*, 22 October, p. Accessed online December 30 2020.
- Ashby, J., In press, 2022. *Platypus Matters*. London: HarperCollins.
- Ashby, J. & Machin, R., 2021. Legacies of colonial violence in natural history collections. *Journal of Natural Science Collections*, Volume 8, pp. 44-54.
- Banks, J., 1770. *The Endeavour journal of Sir Joseph Banks*. Reproduced online: Project Gutenberg Australia.
- BBC, 2019. *Seven worlds: one planet: BBC iPlayer description for Episode 4: Australia*, s.l.: BBC.
- Bond, C., 2017. Fifty years on from the 1967 referendum, it's time to tell the truth about race. *The Conversation*, 30 May, p. Accessed online May 25 2020.
- Cash, C. G. (ed), c.1905. *Cook's voyages. the life and voyages of Captain James Cook. Selections with introductions and notes*. London: Blackie and Son.
- Cogger, H. et al., 2003. *Impacts of land clearing on Australian wildlife in Queensland*, Brisbane: World Wide Fund for Nature Australia.

- Das, S. & Lowe, M., 2018. Nature read in black and white: decolonial approaches to interpreting natural history collections. *Journal of Natural Science Collection*, Volume 6, pp. 4-14.
- Degnate, C., 2017. Everything In Australia wants to kill you, in this order. *The Huffington Post*, 18 January, p. Accessed online February 19th 2021.
- Dineley, J., 2013. Australia's dangerous animals: the top 30. *Australian Geographic*, 28 March, p. Accessed online February 19th 2021.
- Duncan, B. & Ashby, R., 2019. Indigenous language names in the ALA. *Atlas of Living Australia blog*, 2019 October, p. Accessed online October 1 2021.
- Fender-Barnett, A., 2019. Are Australian snakes really the most dangerous in the world?. *CSIROscope*, 27 May, p. Accessed online May 16 2020.
- Gammage, B., 2011. *The biggest estate on Earth*. Crows Nest, NSW: Allen and Unwin.
- George, W., 1964. An early European description of an Australasian mammal. *Nature*, Volume 202, p. 1130–1131.
- Gaiimo, C., 2021. A question hidden in the platypus genome: are we the weird ones?. *The New York Times*, 9 January, p. Accessed online January 25 2021.
- Gould, J., 1863. *The mammals of Australia*. London: John Gould.
- IUCN, 2021. *The IUCN red list of threatened Species. Version 2020-3*, s.l.: s.n.
- Jackson, S. & Groves, C., 2015. *Taxonomy of Australian mammals*. Clayton South, Vic: CSIRO Publishing.
- Legge, S., Woinarski, J. C. Z., Burbidge, A. & al., K. T. e., 2018. Havens for threatened Australian mammals: the contributions of fenced areas and offshore islands to the protection of mammal species susceptible to introduced predators. *Wildlife Research*, 45(7).
- Lewis, J. H., 1996. *Primitive Australian mammals. In: Comparative hemostasis in vertebrates*. Boston, MA: Springer.
- Low, T., 2016. *Where song began*. US ed. New Haven: Yale University Press.
- Mee, A., 1912. *Popular science*. London: Amalgamated Press.
- Menkhorst, P. & Knight, F., 2004. *A field guide to the mammals of Australia*. 2nd ed. Melbourne: Oxford University Press.
- Newton, A. H. et al., 2018. Letting the 'cat' out of the bag: pouch young development of the extinct Tasmanian tiger revealed by X-ray computed tomography. *Royal Society Open Science*, Volume 5, p. 171914.
- Olsen, P. & Russell, L., 2019. *Australia's first naturalists: Indigenous peoples' contribution to early zoology*. Canberra: National Library of Australia.
- Paddle, R., 2000. *The last Tasmanian tiger*. Cambridge: Cambridge University Press.
- Pascoe, B., 2018. *Dark emu*. London: Scribe.
- Pelsaert, F., 1629, trans. 1994. *The Batavia journal of Francois Pelsaert. Translated by Von Husyett, Marit*, Perth: Western Australian Maritime Museum.
- Samuel, G., 2020. *Independent review of the EPBC Act — interim report*, Canberra: Department of Agriculture, Water and the Environment.
- Smith, L. T., 2012. *Decolonizing Methodologies: Research and Indigenous Peoples*. 2nd ed. London: Zed Books Ltd..
- Strahan, R., 1980. Recommended common names of Australian mammals. *Australian Mammal Society Bulletin*, 6(2), pp. 13-23.
- Strahan, R. & Conder, P., 2007. *Dictionary of Australian and New Guinean mammals*. Collingwood, Victoria: CSIRO Publishing.
- Temminck, C. J., 1824. *Monographie de mammalogie*. Paris: s.n.
- Tench, W., 1793. *A complete account of the settlement at Port Jackson*. London: G. Nicol and J. Sewell.
- Thomson, K., 2008. Jefferson, Buffon and the moose. *American Scientist*, 96(3), p. 200.
- Travouillon, K. et al., 2019. Hidden in plain sight: reassessment of the pig-footed bandicoot, *Chaeropus ecaudatus* (Perameleomorpha, Chaeropodidae), with a description of a new species from central Australia, and use of the fossil record to trace its past distribution. *Zootaxa*, Volume 4566, p. 1.
- Van Dyck, S. & Strahan, R., 2008. *The mammals of Australia*. 3rd ed. Sydney: New Holland Publishers.
- Vergnani, L., 2019. Stranger than fiction. *BBC Wildlife*, July, pp. 40-45.
- Weisbecker, V. & Goswami, A., 2010. Brain size, life history, and metabolism at the marsupial/placental dichotomy. *Proceedings of the National Academy of Sciences of the United States of America*, Volume 107, p. 16216–16221.
- Welton, R., Williams, D. & Liew, D., 2017. Injury trends from envenoming in Australia, 2000–2013. *Internal Medicine Journal*, Volume 47, pp. 170-176.
- Whately, R., 1846, pub. 2009. There is a place in distant seas. In: J. Kinsella, ed. *The Penguin anthology of Australian poetry*. Camberwell: Penguin, pp. 28-29.
- Woinarski, J., Burbidge, A. & Harrison, P., 2015. Ongoing unraveling of a continental fauna: decline and extinction of Australian mammals since European settlement. *Proceedings of the National Academy of Sciences of the United States of America*, 112(15), pp. 4531-4540.
- Wood, J. G., 1865. *The illustrated natural history, Vol I: Mammalia*. London: Routledge, Warne & Routledge.