

The rabbit, the ermine and the gaze: An account of introduction, ramifications and the role art plays as a mechanism to create awareness of scientific issues

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The rabbit, the ermine and the gaze: An account of introduction, ramifications and the role art plays as a mechanism to create awareness of scientific issues

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Abstract

This paper provides an account of the process and ramifications of the introduction of exotic species into Aotearoa New Zealand during the late 19th century. These introductions, which comprised both flora and fauna, commenced with the voyages of discovery and were motivated in the first instance by the necessity for food. While some species failed to acclimatise, others, such as the rabbit and the domestic cat, flourished, and in time began to wreak havoc on the landscape and existing biota. The response to these unexpected outcomes, which included parliamentary debate and various biological control measures, again produced unexpected consequences. At present in Aotearoa, these include naturalised populations of exotic predators, the occurrence of leucism due to a shrinking gene pool, and a variety of endemic species now poised on the cusp of extinction. The role literature and fine art played during the period of introduction in the 19th century, and continues to play, is also examined. At the outset, 'picturesque' depictions were commonplace; these have given way to more contemporary approaches, which provide a means for understanding, establishing and defining the identity of place and the species that inhabit it. The paper concludes with a case study of a series of contemporary egg tempera paintings, which illustrates various species; draws attention to their status; highlights the consequences of their existence in Aotearoa; and demonstrates how the confluence of art and science can act as a mechanism to raise awareness.

Introduction

"Rabbits, rabbits, rabbits" ('Rabbits' for luck 1909: 208) or "White rabbit, white rabbit, white rabbit": the first person to chant the word rabbit thrice within a household on the first day of the month is considered to gain good luck for the whole month; this tradition

has been conducted in most British Isles homes, if not further afield, for at least the last century. An abundance of rabbits monthly is apt, but why luck, and why further afield? Is it the fact that from the 15th century onwards they were considered an excellent food source? Or is it their predilection for incredible survival, combined with their natural fecundity? These are, after all, essential ingredients in the process of colonisation by flora and fauna.

In Aotearoa, the arrival of exotic species such as rabbits (rāpeti, *Oryctolagus cuniculus*), has occurred through a variety of means. There were assorted rationales for these introductions and the outcomes have been similarly various. Artists and writers have been inextricably entwined in this process and have played a significant role in the establishment of settler, and species, identity (Foote 2004: 8). Picturesque landscape paintings (Phillips n.d.) helped fuel the process of colonisation by English settlers hoping for a new beginning, and early depictions of flora and fauna were an invaluable tool for scientists in the process of cataloguing. In an extension of this relationship artists now work independently, or closely with organisations such as the Ministry for Primary Industries, to help protect and enhance the unique biota of Aotearoa. This is demonstrated by the numerous poster series and brochures featuring artists' impressions of threatened or invasive pests (Ministry for Primary Industries Manatū Ahu Matua n.d.).

An evolving biota and the ramifications

The evolving assortment of flora and fauna in Aotearoa is a result of long-distance dispersal, evolution, and the coming and going of people. However, it is people that have had, by far and away, the greatest impact. South Island traditions speak of ancestral canoes arriving laden with tī kōuka (cabbage trees, *Cordyline*



Figure 1. School boys hanging out rabbit skins to dry, at Petone. *New Zealand Free Lance*. Source: Photographic prints and negatives. Ref: PAColl-5936-22. Alexander Turnbull Library, Wellington, New Zealand. /records/22524466. Published in the *New Zealand Free Lance*, June 1, 1932, p. 25 (photographer unknown).

australis), aruhe (fern root, *Pteridium esculentum*) and mamaku (black tree fern, *Cyathea medullaris*), as well as many species of birds (Salmond 1993: 239). Captain James Cook's (1728–1779) ships were also generously stocked. Emeritus Professor Alan Frost writes, in 'Life on eighteenth-century navy / Life on Cook's *Endeavour*,' of Cook's provisioning of the *Endeavour*:

On the third voyage, Cook left England with a bull, two cows with calves and sixteen sheep 'with a view of stocking Otahiete and the Neighbouring Islands with these usefull animals'. At the Cape of Good Hope he added to these 'two young Bulls, two Heifers, two young stone Horses, two Mares, two Rams, several Ewes and Goats and some Rabbits and Poultry [Turkeys, Geese, Ducks, Guinea fowl, & one Peacock and Hen], all of them intended for New Zealand, Otahiete and the Neighbouring Islands. (Frost 2012: 21)

There were unintended consequences of these early interactions: Norway rats (pouhawaiki, *Rattus norvegicus*) were on the ships of the first settlers in c. 1772, and these were accompanied by cats (ngeru, *Felis catus*) (Cook [1777] 2005). Accounts of the impact of these arrivals followed soon after: Cook's journal

of his voyages includes the first written description, in 1777, of native birds falling victim to predation by cats; Johann Reinhold Forster (1729–1798), naturalist on Cook's second Pacific voyage, also references the relationship of cats and birds in his description of Dusky Sound, Fiordland. His son George Forster (1754–1794) recounted these observations:

This little boldness in reality at first protected them from harm, since it was impossible to shoot them when they approached so near; but in a few days it frequently proved the means of their destruction; for a sly cat on board, had no sooner perceived so excellent an opportunity of obtaining delicious meals, than she regularly took a walk in the woods every morning and made great havock among the little birds, that were not aware of such an insidious enemy. (Forster & Forster 1777: 127–128)

By the 1830s cats had become more common in New Zealand, and after a period of more intense introduction in the late 1870s to control rabbit numbers, their successful naturalisation was ensured. No matter that cats are companionable and useful in keeping rats at bay on ships, they certainly were not an advantageous

introduction to Aotearoa.

The introduction of another exotic species had similarly unintended consequences. The brushtail possum (paihamu, *Trichosurus vulpecula*), now one of the most common and virulent of pests currently in Aotearoa (New Zealand Plant Conservation Network n.d.), was first introduced from Australia in 1837, to Riverton in Southland to initiate a fur-trade industry. They failed to acclimatise on this occasion, but thrived when reintroduced from 1858 at multiple sites, and now occupy up to 95% of farmland, scrubland and bush (Wodzicki & Wright 1984).

Rabbits were introduced in 1838, and their viability as colonisers was soon established. Rampant breeding and the ensuing population explosion resulted in plagues, which scourged the landscape. These occurred in the early 1870s (Papers Past n.d.: 4), again in the 1920s (Wells 2006: 299), and there were population explosions during the 1940s and 1980s (Figure 1). Unfettered, rampant breeding of this creature in the countryside caused mayhem and devastation, bringing despair to the farming community and those caring for pristine native bush (Wodzicki & Wright 1984: 101).

Brown hares (*Lepus europaeus*) arrived in 1851, ferrets (tori hura, *Mustela putorius furo*) in 1879 and the stoat (toriura, ermine, *Mustela erminea*) in 1884; both the rabbit and the hare, like the possum, were introduced for meat and the fur trade. Unfortunately, the absence of an endemic predator for each of these species resulted in exponential growth, particularly within the South Island (Te Wai Pounamu). This was the catalyst for the introduction of ferrets and ermine in an attempt to control them (Wells 2006: 299); it was an optimistic response, given the natural fecundity of rabbits. In 1886, the Chief Superintending Rabbit Inspector, James C. W. Crommelin, provided the following, alarming formula:

Rabbits consort at three months, and at four months the does have their first litter... The progeny, then, of two rabbits left undisturbed, and allowing them to breed only nine times in the year... would amount [in three years] to thirteen million seven hundred and eighteen thousand (13,718,000). (*Evening Star* 1886: 4)

This sobering account appeared in an article entitled 'Rabbits, and how to deal with them,' which was published in Dunedin's *Evening Star* – a clear indication that the farming community of the late 1880s was cognisant of the terrible plague that could result from wild rabbits.

Environmental historian Philippa Wells adds to the discourse in "An enemy of the rabbit": The social context of acclimatisation of an immigrant killer.' She notes that

colonial administrator and politician Sir George Grey (1812–1898), a member of the New Zealand House of Parliament in 1867, was acquainted with the issues and perils of introducing an exotic species to control an earlier import. Grey was also aware of the threat mustelids, such as polecats (*Mustela putorius*), stoats and weasels (*Mustela nivalis*), posed for the bird life of New Zealand. He explained during a parliamentary sitting that the most undesirable of the family were weasels, as "they 'would materially interfere with the agriculture of the country' because they would kill the birds which destroyed the grain-eating insects" (Wells 2006: 303). Much debate regarding the introduction of mustelidae (carnivorous mammals) was held within the committee stage, specifically concerning "the basis that their economic value exceeded their noxiousness" (Wells 2006: 303). On this occasion, a government-sanctioned introduction was formally defeated, at various stages within the legislative process, and introduction was temporarily held off. However, the South Island rabbit boom in 1881, which led to The Rabbit Nuisance Act 1881 (45 VICT 1881 No6), empowered the government to act and as a result, between 1884 and 1886 alone, 4000 ferrets, 3099 weasels and 137 stoats were liberated (Wells 2006: 309).

Environmental researcher Carolyn M. King, in her 2017 journal article 'Pandora's box down-under: Origins and numbers of mustelids transported to New Zealand for biological control of rabbits,' continues the narrative: "Over the 50 years after 1870, upwards of 75,000 ferrets, most imported from Australia or locally bred, were released in the South Island" (para. 1).

These are extraordinary numbers, and are all the more alarming when one considers the species involved. Times have changed, but the mustelid family is now naturalised in Aotearoa and, as zoologists Kazimierz Wodzicki and Shelly Wright note: "Thirty-three species of introduced birds and thirty-two species of introduced mammals are now widely accepted as a part of New Zealand fauna" (1984: 79). Opportunistic and accidental introductions of other species continue to occur, ensuring the ongoing modification of the biota of Aotearoa.

Nature and the making of culture

In the early phases of human occupation in Aotearoa, the introduction of species was motivated primarily by the need to establish a reliable food source (Sullivan 1998: 8), but in time a desire to replicate a distant (European) homeland, complete with the comforting sights and

sounds of home, became an important motivation (Crosby 1986). As Philippa Wells states: New Zealand offered a romantically-envisioned, even Utopian, 'Britain of the South' [and] Settlers, who through duty, necessity or desire were compelled to leave a land corrupt, urbanised, overcrowded and polluted, had the 'British plough' to convert the New Zealand 'desert' into 'its original garden-like condition' and the things of 'home' to fill it – including game birds and songsters (for example, pheasants, quail, larks and thrush), shade trees (oak and elm) and small animals (including rabbits and hares). (2006: 299)

The Auckland Acclimatisation Society, established in 1867, provided the means for much of this transformation. They worked feverishly to fill the 'garden' with 'things of home' and in their first year introduced exotic birds, fish and animals of over 30 varieties (Ashby 1967: 34).

Artists were also involved from the outset. Many of them helped to repackage the 'alien' environment of Aotearoa in a more Euro-palatable guise (Foote 2004). Sydney Parkinson (1745–1771) and William Hodges (1744–1797) produced botanical images during the voyages of Captain Cook; during the early years of European settlement Reverend John Kinder (1819–1903), Alfred Sharpe (1836–1908) and John Barr Clarke Hoyte (1835–1913) generated picturesque landscape paintings; and romantic versions of these were produced by Petrus van der Velden (1837–1913). Artists such as the famous, self-taught Liverpoolian animal and anatomical painter George Stubbs (1724–1806) were also instrumental in generating a perception, without leaving Europe, of South Pacific environs. When Sir Joseph Banks (1743–1820), who sailed with Cook on his first voyage to the Pacific, returned to England in 1771 with the pelt of a Kangaroo (Gelder 2018), he commissioned Stubbs to imagine and paint the species. His painting *The Kongouro from New Holland (Kangaroo)* (1772) reveals how adroitly he managed this task (Figure 2). A previous, lengthy investigation of horse forms enabled Stubbs to perceive the skeletal form, and other underlining anatomical details of the kangaroo. In fact, the resultant work could be seen as a metaphor of Stubbs reinterpreting the form of a kangaroo: art triumphing over science. Royal Museums Greenwich describes this episode:

In the absence of live models, the artist worked from written and verbal descriptions provided by Banks himself and, in the case of the kangaroo, a small group of slight pencil sketches made by [Sydney] Parkinson and a stuffed or inflated pelt (now lost) that was in Banks'

possession (n.d.).

Apropos the background, it is picturesque, with more than a passing resemblance to the English countryside. Stubbs, whose artistic practice is inextricably connected to this time and the phenomenon of colonisation, thus assisted in generating an illusion of a South Pacific utopia.



Figure 2. George Stubbs, *The Kongouro from New Holland (Kangaroo)*, 1772, beeswax on mahogany panel, 605 x 715mm. Source: National Maritime Museum Collections, Greenwich, London.

Other animal occupants of these 'fabricated' landscapes have been reimagined at the hand of both authors and artists. Beatrix Potter's (1866–1943) books *Peter Rabbit* (Potter [1901] 1995) and *The Tale of the Flopsy Bunnies* depict rabbits as cute anthropomorphised creatures. Potter's illustrations (Figure 3) are human scale, and wear blue or red coats and blue pinafore dresses. They carry woven shopping baskets and invariably try to escape the clutches of the elderly gardener Mr McGregor – and always just manage to do so (ironically, a tale to learn much from). Miffy,¹ created by Dutch author and artist Dick Bruna (1927–2017) in 1953, continued this saccharine bunny theme, and bunnies continue to be much loved by further generations of children. The Easter mythology, surrounding Easter bunnies, is yet another example and illustrates the means by which 'identity' is generated. These narratives stand in stark contrast to the reality of rabbits' impact on the landscape of Aotearoa.

1 Her name in Dutch, Nijntje, is a contraction of the Dutch 'konijntje' meaning 'little rabbit,' and she is a highly stylised graphic white rabbit with black outlines and orange clothes.



Figure 3. Beatrix Potter, An original illustration of Peter Rabbit from 1902. Source: Wikimedia Commons.

Case study: *White Rabbit, Leucism I and Ermine*

THE ARTIST

Dr Hamish Foote is an artist and architectural educator who has researched the impact of colonisation on native and endemic flora, fauna and landscape (Foote 2004). These investigations often combine (his own) fine-art images with an accompanying text outlining the context and findings. Interdisciplinary collaboration has been a recurring theme, whereby science and art have combined to examine subjects such as placemaking (Foote & Blanchon 2013) – how the introduction of foreign flora and fauna creates a sense of place; the role of art to promote conversation and debate about controversial issues; and the potential spread of invasive species in Aotearoa (Foote et al. 2017). During 2018 and 2019, Foote generated a series of

paintings that focused on endangered endemic species and assorted exotic fauna. A selection of these works, some of which were exhibited in an exhibition entitled *Psalm* in 2019 (Foote & Cornish), is the subject of this case study, where we provide an account of the means artists and galleries employ to communicate: to alert a distracted and often ignorant populous to the perilous state of the natural environment of Aotearoa.

THEMES AND METHOD

Picturesque

The paintings in this case study feature ‘picturesque’ landscapes, which are a reference to the late-19th century period of species introduction and the work of artists such as George Stubbs who were practising at that time. Stubbs’ paintings extend and reveal the eurocentric gaze (a eurocentric painter in a eurocentric landscape), and exemplify the notion of ‘ecological imperialism,’ a term introduced by historian Alfred W. Crosby (1931–2018) in 1986. Crosby highlights this phenomenon in a description of Aotearoa:

In whatever part of either Island they have been planted, European vegetables, fruits, grasses, and many sorts of grain, flourish remarkably, but not more than the different animals which have hitherto been imported, such as rabbits, goats, swine, sheep, cattle, and horses. (Crosby 1986: 249)

Foote is urging the viewer to consider the impact of this colonial eurocentric gaze on Aotearoa; the determination to overwrite endemic bush with picturesque 19th-century depictions. It was of course motivated, in part, by the craving of homesick settlers for the sounds, smells and sights of their homeland – a yearning for the familiar as opposed to the foreign – but at what cost?

White animals

The striking whiteness of each subject, with connotations of purity, is a recurring theme within the paintings. This theme may be interpreted in a variety of ways, but there are two distinct yet entwined readings. One draws on the pragmatic world of science, while the other is concerned with paradox.

Science

In the case of the rabbit and the kiwi, whiteness is due to leucism or partial albinism, which transpires when genetic bottlenecks (Makino et al. 2018) occur within a species as a result of “a multitude of variables: artificial

selection, such as within pedigree breeding [rabbits]; partial extinction, due to introduced species predated on the creature [kiwi]; or a reduction in population size” (Foote & Pretty 2020: 216).

Ermine presents itself with its white winter coat, which is an evolutionary adaptation to ensure survival in winter habitat (Pallardy n.d.), as opposed to any manifestation of leucism.

Paradox

Humans have a fascination with leucistic or albino (white-coloured) native and endemic fauna, as illustrated by the frequent news items concerning these animals (Hanne 2020), and the white heron (kōtuku, *Ardea modesta*) has mythical status for Māori because of its rarity and beauty. The white rabbit is also compelling, as a result of its long association with magic (Middleton 2020). However, the delight and wonder associated with encountering these curiosities disguises an uncomfortable truth: the increasing incidence of leucism in a species reflects a plummeting gene pool and may imply impending extinction (Rayner 2019). To make matters worse, white specimens are conspicuous and therefore more vulnerable to predation. The ermine, in contrast, has connotations of prestige and exclusivity, as a result of a long-running association with royalty and the upper echelons of civilisation. In light of this, the devastating impact of this species on the unique birdlife of Aotearoa (New Zealand Plant Conservation Network 2019) is a horrific paradox.

Composition

The depiction of a subject in profile, prioritised within the frame, is a recurring strategy in the collected works. On one hand it is a reference to standard scientific practice, and also police mugshot protocol, that privileges a record of defining characteristics. On the other it is intended to bring a certain gravitas to the works by association with history, in particular the depictions of deities, monarchs and emperors on coins. In the history of painting, there are obvious parallels with the work of European artists, such as Piero della Francesca’s (1416/17–1492) *The Duke and Duchess of Urbino Federico da Montefeltro and Battista Sforza* (Figure 4). This desire for ‘gravitas’ reflects the serious underpinning themes of habitat loss, predation and extinction.

Medium and technique

The paintings are executed with egg tempera on gessoed kauri panel. The use of this historical and exacting medium



Figure 4. Piero della Francesca, *The Duke and Duchess of Urbino Federico da Montefeltro and Battista Sforza*, c. 1473–1475, oil on wood, 470 x 330mm each. Source: Le Gallerie Degli Uffizi, Florence.

reinforces associations with Renaissance portraiture and contributes to a sense of sobriety. The notion of a native kauri panel overlaid with (European) gesso and a picturesque landscape replicates the process of colonisation whereby native bush was overlaid with a neo-European alternative (Grey 1994: 17).

THE PAINTINGS

White Rabbit

The painting *White Rabbit* (2018, Figure 5), featuring its namesake, alludes to various allegories: the three eggs in the foreground are representational of rebirth and of fertility – they unambiguously draw attention to the Easter mythology surrounding Easter bunnies and eggs; the association of whiteness with purity; and the obvious reference to the magician’s prop. These buoyant themes of fertility, resurrection, purity and magic are contrasted with a desiccated landscape, which hints at the impact of this established pest. This darker, antithetical side exemplifies the necessity for the core biosecurity principle of prevention, and failing that, eradication or management (Biosecurity New Zealand Tiakitanga Pūtaiao Aotearoa 2020). As mentioned previously, the distant land and sky scape are intentionally picturesque – in this instance, they have been appropriated from the George Stubbs painting *Turf, with Jockey up, at Newmarket*.



Figure 5. Hamish Foote, *White Rabbit*, 2018, egg tempera on gessoed kauri panel, 115 x 115mm. Private collection.



Figure 6. Hamish Foote, *Leucism I*, 2019, egg tempera on gessoed kauri panel, 115 x 115mm. Private collection.



Figure 7. Hamish Foote, *Ermine*, 2019, egg tempera on gessoed kauri panel, 115 x 290mm. Private collection.

Leucism I

Leucism I (2019, Figure 6) depicts a leucistic kiwi (tokoeka, *Apteryx australis*). There is an underlying paradox in this image: the wonder and rarity of this spectacle belies the foreboding dimension of leucism, and the precarious status of this species. The desiccated bones in the foreground emphasise the transience of life in the manner of vanitas painting, and reveal the unexpected impact of introduced species on endemic fauna. As we are now aware, the ermine has had no real impact on the reduction of the rabbit population. Kiwi, on the other hand, have not been as fortunate. Most species are now listed as either vulnerable or endangered (Robertson & Miskelly 2013) with the mustelid their most feared predator (Department of Conservation Te Papa Atawhai n.d.).

Ermine

Foote's painting *Ermine* (2019, Figure 7) draws attention to unexpected outcomes arising from the introduction of an exotic species to control an earlier arrival. It is not only rabbits and ground-nesting birds such as the kiwi that are endangered by this predator. Mustelids are excellent climbers and will attack, kill and eat eggs, chicks and even full-grown native tree-dwelling birds (Taylor 2020). The lonely kererū (wood pigeon, *Hemiphaga novaeseelandiae*) feather in the foreground alludes to this alarming reality. In the background, to left and right, are stands of native bush, receding bays and offshore Islands, all of which are easily accessible and a happy hunting ground for this voracious predator (Taylor 2020).

The three images in this case study are all concerned with the ramifications of colonisation, in particular the unexpected impact of introduced species on endemic fauna.

Art as a mechanism for raising awareness

Why do we need artists, designers and writers to repackage, elucidate and reinforce the clarion call of scientists? Why is it useful that we have other forms of consuming information, and why is it important? Educationalists Stathis Stivaktakis and Evangelia Krevetakis, who work within the field of education and science, discuss the merits and essential necessity for the arts to highlight and to reformulate scientific notions; to recast them in a more tangible, accessible modality for a wider audience to consume. They suggest, “Art... by encouraging a more focused way of seeing reality... can facilitate a change in... perspective/outlook on the world in general” (Stivaktakis & Krevetakis 2018: 69). The repackaging and re-presentation of information can be very beneficial, whether it be raising awareness of kauri dieback (The Kauri Dieback Programme 2014), or alerting the population to the arrival of an invasive pest, such as the gypsy moth (*Lymantria dispar*) (Ministry for Primary Industries Manatū Ahu Matua, 2020) or the brown marmorated stink bug (*Halyomorpha halys*).

These types of biosecurity issues are now being highlighted by artists, and made palatable and consumable for the ‘everyday person.’ As mentioned, artists are working with scientists to produce visual material, such as posters and brochures, to reach a wide audience with an immediacy and impact, more reminiscent of an aggressive advertising campaign, or the propaganda machinery of nations during wartime. In the case of galleries and fine art, perhaps not all patrons will comprehend, in the first instance, the depth or complexity of biosecurity issues addressed in images such as *White Rabbit*, *Leucism I* and *Ermine*; viewers and consumers may privilege and enjoy the mechanism of style and aesthetics but, fortuitously, there are advantages in the public nature of exhibitions. The theatre of the opening night, and the accompanying press coverage, provoke dialogue and allow for the dissemination of more complex, underpinning concepts to a wide audience. The opportunity to supplement images with an informative narrative, as occurred with *Psalm* in *The New Zealand Herald* (2019), reinforces the merits of using art as a mechanism to raise awareness.

Conclusion

The remoteness and isolation of Aotearoa, which once insulated and enabled the evolution of unique flora and fauna, ended as the ‘voyages of discovery’ began. As outlined, a flood of species entered and mingled with

our endemic biota during the late 19th and early 20th centuries, with devastating consequences. As stated earlier, the number of now-naturalised exotic species is extraordinary, and the extent to which our environment has been modified seems to have escaped the notice of many New Zealanders. The grim reality of leucism, as a harbinger of potential extinction, seems also to have eluded attention – the focus instead resides in the category of wonder and novelty. Foote’s paintings, which are just one of the many manifestations of a type of citizen science (Bonney et al. 2016) occurring throughout the globe, provide a means to address this deficit, and to educate; an opportunity for the voice of science to be interpreted and amplified so as to reach a wider audience. The fact that it is possible to elucidate and consume science in multifaceted ways makes our society much stronger, and perhaps counters the damage of science denialism. As Polish artist Magdalena Abakanowicz states, “Art does not solve problems but makes us aware of their existence. It opens our eyes to see and our brain to imagine” (Grounds for Sculpture n.d.).

Multidimensional understandings can be cultivated, and colonial narratives reframed in a more contemporary modality – one that allows us to gaze at, and hopefully learn from, the past: no matter how cute the rabbit, the ermine (or the cat) is, their introduction to Aotearoa has had devastating consequences.

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