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Captive birds on Dutch Mauritius: bad-tempered parrots, warty pigeons and notes on other native animals

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Captive birds on Dutch Mauritius: bad-tempered parrots, warty pigeons and notes on other native animals
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During the occupation of Mauritius by the Dutch in the seventeenth century, live dodos and other animals were transported to the east and west as curiosities and gifts by the Dutch East India Company. How these animals managed to survive these journeys, when human casualties on-board ship were so high, has remained a mystery. Here, we present for the first time a translation of the recently discovered report of Johannes Pretorius, who stayed on Mauritius from 1666 to 1669. Pretorius kept a number of now extinct birds in captivity, which was probably an experiment to ascertain their captive requirements prior to transportation. He also provides the first ecological details of some of the now-extinct birds and Mauritian giant tortoises, the impact of introduced animals, and highlights how little of the interior of Mauritius had actually been explored during this time.

Keywords: Raven Parrot Lophopsittacus mauritianus; Mauritius Red Rail Aphanapteryx bonasia; Mauritius Blue Pigeon Alectroenas nitidissima; Mauritius Sheldgoose Aloochen mauritiana; Dodo; Dutch East India Company (VOC)

Introduction
The volcanic and isolated Mascarenes Islands, situated in the southwestern Indian Ocean, comprise Mauritius, Réunion and Rodrigues. Arab traders were aware of the Mascarenes from around the fourteenth century (Hume 2013), as were the Portuguese in the early sixteenth century (Toussaint 1966; North-Coombes 1980), but neither nation as far as known settled there. It was the Dutch, under Vice-admiral Wybrandt Warwijck, who claimed Mauritius for the Netherlands in 1598, after which the island was used as a replenishment station for Dutch trading vessels en route to the East Indies (Moree 1998). Initially, the island was visited only periodically by Dutch ships, but with the increasing presence of French and English traders, the Dutch in 1638 established a settlement at Fort Frederik Hendrik in the South-east Harbour (now Vieux Grand Port) (Floore and Jayasena 2010). Mauritius was administered by the Dutch East India Company’s (VOC) eastern head office in Batavia (now Jakarta) on Java, and food products such as cattle, deer, poultry, various fruits and vegetables and sugar were introduced (Sleigh 2000). A larger VOC replenishment station was established at The Cape of Good Hope in April 1652, as a halfway stopover point for ships travelling to and from Europe to South East Asia, which also took over administration of Mauritius (Moree 1998; Sleigh 2000). Consequently, Mauritius was considered an ‘outer establishment’ by the VOC directors at The Cape, with little to offer other than ebony (Moree 1998). Furthermore, after the discovery of the more economical Brouwer Route to the East Indies, which halved the duration of the voyage, interest in maintaining Mauritius as a second replenishment station was considered superfluous (Sleigh 2000); therefore, in 1658 the island was abandoned and the fort destroyed. However, the presence of the English East India Company and a few Dutch shipping disasters persuaded the directors of the VOC to order its re-occupation in 1664 (Moree 1998).

Part of the duties of the new officials on Mauritius was to record the suitability of the island for agriculture, and report on the natural resources, especially the availability of ebony (Sleigh 2000). The first Dutch commander of the second period of occupation Jacob van Nieuwland had died while on duty, so George Frederik Wreede was sent as his replacement in 1665 (Moree 1998). On 20 May 1666, the Council of The Cape made a decision about the annual shipment of supplies to Mauritius. The supplies were to be accompanied by several soldiers, a secunde [second-in-command] by the name of Dirck Jansz Smient, a bookkeeper Jacob Granat, as well as Johannes Pretorius, who was going to be either a secunde or ziekentrooster [comforter of the sick], depending on the presence on Mauritius of a commander (at that moment it was uncertain if Wreede was present, missing or dead) (Pretorius 2014). On 27 June 1666, Smient, Granat and Pretorius sailed for Mauritius on the Hoogcarchelp and arrived on 30 July, one month later (Liebbrandt 1901; Barnwell 1948). Wreede was still actively in command when they arrived, and satisfied with his secunde already in service, Jan van Laar; therefore, Smient was given a

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different task and Pretorius was employed as zieken-trooster (Liebbrandt 1901).

Granaet, who stayed for three months, and Smient and Pretorius, who remained for one and three years respectively, wrote important accounts about the state of Mauritius in the years 1666–1669. Our recent discovery of the report of Pretorius, which is by far the most informative on the native fauna, is here translated and transcribed for the first time.

Mauritius in 1666–1669

Although Pretorius, Granaet and Smient arrived on Mauritius during the command of Wreede, Wreede was subsequently absent for much of the time. After an initial enthusiastic welcome, Wreede soon lost the respect of his men who petitioned against him, so in 1668 he was ordered back to The Cape to defend himself (Barnwell 1948; Moree 1998). Van Laar took over command until 13 August 1668, followed by Smient until 31 October 1669. Both acting governors tried in vain to promote agriculture amongst the few freeburgers (farmers who were given land and worked independently of the VOC), but failed due to plagues of rats, locusts and caterpillars (Barnwell 1948). Van Laar (in Moree 1998, p. 78) gave an insight into the difficulties faced by the Dutch on Mauritius in 1668:

Farming has been attempted several times, and has not succeeded because, though the seed when sown sprouts up beautifully, as soon as it has grown fairly high, it is either burnt up by the sun or bitten off by the thousands or rats, which eat the ears.

Wreede was reinstated in October 1669, taking over from Smient, but soon degenerated into an alcoholic. Disillusioned with Mauritius and apparently trying to escape to the neighbouring island of Réunion, he drowned in early 1672 off the east coast (near present-day Belle Mare) (Moree 1998). During both periods of occupation, Mauritius was used as a holding area for captured slaves from Africa and Madagascar (Bissoondoyal and Servan-sing 1989), but inevitably some escaped. Runaway slaves had been a problem for the Dutch during the first Dutch occupation and were still a problem in the second (Pitot 1905; Barnwell 1948; Moree 1998; Sleigh 2000). Wreede’s report (in Barnwell 1948, p. 43) of 1666 November describes the situation:

Seven blacks, including a woman, were still in hiding there, and had often been seen by men of the garrison destroying an incredible number of cattle, and only using the humps and breast pieces, leaving the rest of the carcase to rot by the way. There would be no possibility to capture these people alive, but they might be killed, if orders were received in that direction.

The slaves in the interior were considered a threat to the men of the garrison, a situation that would only change when Wreede’s successor, Hubert Gerritsz Hugo, an ex-pirate notorious for his cruelty (Moree 1998; Panyandee 2002), rounded up any slaves that he could catch. Therefore, in the late 1660s, and due in part to the threat from runaway slaves, the interior of Mauritius remained unexplored. It was still densely forested and virtually impenetrable (Pitot 1905). Only the more open coastal and lowland vlaktes (plains or land with low relief), which were concentrated in the east, south and southeast, were used for agriculture (Figure 1). Furthermore, the only option for traversing the island was by boat (Pitot 1905; Cheke and Hume 2008).

Johannes Pretorius

Johannes Pretorius was baptised on 26 October 1642, in the Dutch Reformed Church in Ouddorp, on the mid-west coast of the Netherlands (see Barnwell 1992; Pretorius 2014). In his early twenties, he enrolled at Leiden University, but did not finish his study and enlisted with the VOC. On 17 December 1665, he was employed by the VOC as a soldier, and sailed to the Cape of Good Hope on the Nuissenburg. Pretorius left The Cape on 2 June 1666 and arrived at Mauritius on 30 July. Instructions from the council at The Cape and several reports and recommendations from the servants on Mauritius make it clear that Pretorius was regarded as a gifted and well-educated man. He was even considered for the position of governor, but this did not happen. Pretorius wrote his report, either partly or completely, on board the yacht Voerman as he left Mauritius with Smient on 9 December for The Cape, so it is likely that it is based on his most recent memories; it is dated 15 December 1669.

After three years’ service in Mauritius, in early 1670 Pretorius got a job as assistant in the VOC council Secretary’s office at The Cape. In mid-1673, he married Geertruida Meijntjes of Hasselt, a three times widow whose latest husband, Dirk Bosch of Amsterdam, had died on 31 March of that year (Barnwell 1992; Schoeman 2011). The marriage may not have been a happy one, as it is said that Geertruida had to leave her money and valuable properties with a friend, because Pretorius spent everything at the inn (Schoeman 2011). Pretorius was financially comfortable during this time and optimistic about his future, because in 1674 he had bought a house and grounds, cattle, tools and two slaves for 1500 guilders with a further credit of 3750 guilders, payable in equal shares over the next four years (Schoeman 2011); this generous deal was organised through Smient. Pretorius was considered one of the great farmers of The Cape, running a mixed agricultural and livestock farm. Geertruida passed away in 1676, and he later married a sister of another successful Cape farmer, Gerrit Victor (Schoeman 2011).

Johannes Pretorius died during a period of cold weather on 30 April 1694, when still a member of the
The city of Pretoria in South Africa was named after Johannes’ great-grandson Andries Pretorius (1798–1853), who was the leader of the Boers and the creator of the South African Republic (Beck 2014). Pretorius’s report (Figures 2 and 3) is extremely important. He not only wrote about the native fauna and effects of introduced animals in detail, but also provides the only account known that describes keeping now-extinct Mauritian bird species in captivity. During the time of Pretorius, Mauritius was in a transitional phase, having gradually changed from a near pristine island in 1598 to one now suffering the effects of anthropogenic changes. A full translation of Pretorius’s report is given in Appendix 1 (supplementary material), whereas in the following text we focus on key sections relevant to the fauna:

The island of Mauritius is a wild and rugged country, one mountain and valley is followed by another, as waves in the sea. Inbetween are rivers that supply the land with a lot of water, but also cause it to be rich in stones, that are everywhere. One finds only a few, small plains here and there. The animals gather on the plains to bake in the
sunshine after the rain. The largest and most famous is the one with the lemon trees 'Limoenbogaerd' [present day Ferney] and the one at the Vuijle Bocht [Poste de Flacq]. I will speak of this [latter] one first, and also of the whole island that is a size of 7 or 8 morgen [a large Dutch unit of measure]. The soil is of reasonably quality which is damp most of the time, caused by the water flowing from the high mountain. This plain is situated at its foot...

... On this plain many cattle come to graze. Cows, deer, goats and pigs. The cows with humps on their backs (that work very well pulling the yoke) come here daily when the ripe fruits have fallen. They always come in the evenings and nights to graze (one hardly sees them in daytime). When they came for the fruits, we tried to catch them by setting snares under the trees, but they are too smart for us because of their acute sense of smell.

The deer are all over the island, but mostly in the area around the lodge [Vieux Grand Port]. They grow very fat in April, May, June and July. In those months the males are solitary, the females are pregnant and can be caught easily, but they are clever and hide in the forest. They are very shy and seldom come within range of a gunshot. When the Dutch first introduced deer to the island they were not so shy. When someone encountered a deer by accident, the animal would startle and sometimes run into a tree, so it could be caught by hand. Its meat does not keep well (like all kinds of meat on the island) when just preserved in salt, but if smoked afterwards it is agreeable.

Goats are also here but at one mile from the lodge. In the areas seven or eight miles from the lodge, the quantities of these animals are indescribable. We cannot hunt there because it is too far a distance to transport a dead animal...
over land. We would have to go by sea and our sloop is not capable of this.

Almost all cattle are on the beaches and areas up to two or three miles inland. There are no cattle further inland because it becomes very wet and swampy and overgrown with broad-leafed trees, so that the sun cannot dry the forest floor. If a lost animal strays into the forest, its horns and feet rot away because of the dampness.

The Westside, the Varsse Valley, the Bars Vlackte, the Stony Vlackte, and the Vuijle Bocht are notable for the abundance of cattle. In the Vuijle Bocht the abundance is largest, and it is smallest in the Varsse Valley.

At Kronenburg [Grand River South East] there are islands [Hês aux Cerfs] with lots of cattle that reproduce quickly, which is an advantage when ships arrive that need to take in meat supplies. We dry many hides in the sun, and they provide us with shoes.

Pigs are here too, throughout the whole island, but especially on the beaches where the palmiste trees [Hurricane Palm Dictyosperma album] are abundant. They also come to the vlakte to eat the fallen fruit. They are usually thin except in January and February, when the ebony and other trees drop their apples [Ebony Diospyros sp. and some other Mauritian tree genera produce green, apple-like fruit] to the ground. There are many pigs which are easily found and captured. They are voracious, and when they chance upon a young stray goat, they will catch and devour it. That is why they also roam the beaches to look for slimy things, dead fish or tortoise eggs. They don’t even leave ambergris unmolested, especially when it is fresh.

There are many land tortoises all year round on the plains. Also in the mountains. They feed on dead leaves and apples. Ships take them in as stock during their voyages. The abundance of shells is testament to this. The meat is eaten, but the best is the ‘sourse [cooked meat soaked in vinegar, lemon juice and various spices]’ and the liver.

Now I have dealt with the plains and the four footed animals, I will speak of the birds in the water or on land, like pigeons, dodaersen, parrots, Indian ravens, bats, canary birds etc: or both [land and water], as in the Geese: the teals [Mascarene teal Anas theodori, extinct c.1700] and waterhens [Mascarene coot Fulica newtonii, extinct c.1700] are always in the water, and all live together in peace and quiet.

[Mauritius Red Rail Aphanapteryx bonasia, extinct c.1700]

The dodaers [Aphanapteryx bonasia] is a red bird, as big as a fowl, has short wings and cannot fly. It scratches in the earth with its sharp claws like a fowl to find food such as worms under the fallen leaves. This bird is unbelievably stupid. When one waves a stocking cap and makes a sharp sound with the mouth, it immediately heads towards that person, and if one carries a stick, all of them can be killed with it without any escaping. They are fatty and greasy to eat. They have a long, sharp beak which is slightly curved at the end.
The pigeons are beautiful in colour with crests on the head and warts on the face. I have tried to raise juveniles and to tame adults, but they always die under my hands.

Parrots are here too, there are many. Some are grass green and small [Psittacula echo], others are multi-coloured and large. The first mentioned could be caught with a net. We can sometimes catch them alive, but the others are too high in the trees and can hardly be caught. One never finds their nests.

The Indian ravens are very beautifully coloured. They cannot fly and are not often found. This kind is a very bad tempered bird. When captive it refuses to eat. It would prefer to die rather than to live in captivity.

Bats are plentiful here. They are as big as an owl from the fatherland. This bird has no feet. It is always in the air, flying, or hanging upside down in the trees on two hooked claws attached to its wings. After having given birth, this bird carries its young and feeds it on its breast. The young even hang on the breast while in flight. The meat is fatty and tastes reasonably well.

Geese are also here in abundance. They are a little larger than ducks, very tame and stupid, seldom in the water, eating grass, sometimes 40 or 50 or even a 100 together. When they are being shot, the ones that are not hit by the hail stay put and do not fly away. They usually keep to the north side of the island, far away from where the people live, except in the dry season when they are forced to drink on the other side of the island, and sometimes near the lodge.

Now we have seen the profusion [of the above-mentioned wildlife], let me dwell on the fish that are plentiful here, within the reef. Once, half a day to the west, our people caught 7 or 800 large steenbrasens [Seabream] with the sloop. But they are not very nutritious to eat and laid in salt they do not keep well, but when afterwards they are dried in the wind they do keep well. The harder [mullet] is large, but lean and dry.

Sea turtles are numerous here too but mostly on the north side of the island. Their eggs are incubated by the sun and hot sand. They [the eggs] are round.

There are also sea cows. I don’t know why they are so called because they do not look like cows. It is a misshapen animal, 9 or 10 feet long with a round shape. Its meat tastes good, consisting of layers of lard and meat. This meat can be salted or smoked. The meat has a fine structure and a natural taste. These animals come only to the shore after heavy rainfall, looking for seagrass which is their only food, so they are not abundant and are difficult to come by.

In the rivers there are not only small fish but unnaturally large and thick eels (if they may be called that). Once we shot one with a musket that was 6 foot long and 16 thumbs thick, but an old specimen is tough and unpleasant to eat. They can be caught by attaching a piece of meat to a string without a hook. We also have observed them trying to bite the feet off swimming ducks.

Jacob Granaet

Jacob Granaet was a bookkeeper, and his original account, which was written up on 30 November 1666, was transcribed and translated by Liebbrandt (1901). Granaet left The Cape with Pretorius for Mauritius on 27 June 1666. He arrived on 30 July at the Southeast harbour (Vieux Grand Port), stayed until 11 September, and returned to The Cape on 11 November after visiting Madagascar. Unlike Pretorius’s report, which was written after a three-year stay, Granaet’s observations are derived from a three-month sojourn. He describes the limited agriculture, but makes note about the escalating effects of introduced animals, including rats. His observation on the surviving native birds is brief, but they do give an indication as to their status:

The best spot hitherto found for the purpose [of agriculture], lies at a running river, about 1½ hours on foot from the Lodge, and named the Great Lemon Garden [Limoenbogaerd] . . .; however, wheat, rye, oats, barley, &c., are very much destroyed by rats, which are numerous there . . .

Within these forests dwell the parrots, paroquetes, turtle and other wild doves, the mischievous and unusually large ravens, falcons, bats, and other birds, whose names the writer does not know, never before having seen any. The ground of this wilderness serves as a shelter and lair for the cattle (which have large humps near their necks), for harts, hinds, goats and pigs (the destroyers of the young cattle that are running wild there in all directions), and for the slow tortoises whose livers and eggs are considered great delicacies, and whose fat (with which the garrison is amply provided) is very healthy and fit for use in food and other ways.

Waterfowls such as geese, teals, waterhens and flamingos [Phoenicopterus roseus, extirpated c.1770], are found among the marshes, and in large numbers; and, especially the teals, are so tame that they can be killed with sticks; all are fat and of good taste (Liebbrandt 1901, p. 198).

Discussion

The report by Pretorius provides the first information about the ecology and diet of Mauritian giant tortoises, red
rails and geese. He also resolves a number of outstanding issues, most notably on how some of the Mauritian native fauna manage to survive alive on long sea voyages, when human fatalities were so high. The answer may well lie with Pretorius’s experiments at keeping some of the birds in captivity. The VOC regularly sent exotic animals as gifts or for trading during the seventeenth century (Winters and Hume 2015), so if the Dutch were keeping native species in confinement on Mauritius as a matter of course, their husbandry requirements could be perfected prior to shipping. This would explain how dodos and other birds arrived alive in Europe and in the Far East. Most notably, in 1647 the last recorded captive dodo, a gift for Japanese dignitary, survived the 6500 + mile sea voyage from Mauritius to Dejima, Japan (Winters and Hume 2015), having been on-board ship for at least three months. The fact that exotic birds could be kept alive on sea voyages for long periods is remarkable, as sea voyages were still a high risk for mariners during the 1660s. For example, a report made during Pretorius’s stay on Mauritius provides a vivid description about the perils that sometimes beset crews, when the Ooiewaar, a ship that had left Texel, Holland on 29 April 1666, having called at Riau Island, Indonesia, on 25 June, before arriving at Mauritius on 3 November (Liebrandt 1901, p. 196). The report reads:

3 November 1666. Vessel sighted beyond the Lion Mountain. Wind contrary, preventing her from reaching Port. Fired three guns; at once the sloops of the Beurs and Kaawe and our own were sent to her assistance . . . she was the flute Oyevaer of Zealand, in a most desolate state, yea! so much so, that if she had not received assistance, she could not possibly have reached the roadstead and been saved, as there was not six healthy men on board, all being ill in bed . . . She had 178 men, of whom 48 had died, whilst more than 90 were laid up. Room was at once made on shore for them, that they might land to-morrow and be properly provided with accommodation and refreshments.

Mauritius, as well as Réunion and Rodrigues, once harboured the densest populations of giant tortoises in the world (Arnold 1979; Bour 1981). Mauritius had two species, a browsing saddleback form Cylindraspis triserrata, and a domed form C. inepta, which grazed on low vegetation. Giant tortoises were considered an essential food source for early mariners. They could survive alive on board ship for months without food or water, thus providing fresh meat, and consumption of their oil could prevent diseases such as scurvy (Cheke and Hume 2008). Tortoises were massacred by the settlers on Mauritius during the Dutch period, despite the protests of the governors, with large numbers being slaughtered just to collect the grease, the rest of the body left to rot (Cheke and Hume 2008). Commander Hugo reported that up to 50 were killed before a fat one was taken, and 400–500 were needed to make a barrel of grease, 30–40 to make a pint (Cheke and Bour 2014). Pretorius mentions that tortoises were still common on the plains and in the mountains, where they fed on the fallen fruit of ebony trees and fallen leaves. This is the only account that describes the diet and distribution of the Mauritian giant tortoises. The mainland populations seemed to have become scarce subsequently, with the last reports made around c.1721, but some still survived on the off-shore islets, the last of which were collected a decade or so later (Cheke and Bour 2014). All species of Mascarene giant tortoise suffered the same fate as those on Mauritius; the last Cylindraspis were recorded on Rodrigues in c.1795 and on Réunion in c.1830 (Cheke and Bour 2014).

The Mauritius red rail was mentioned in a number of accounts, of which the more detailed describe this species’ attraction to the colour red or, more likely, to the waving of a piece of material (regardless of colour); this technique could result in the capture of an entire flock of birds (Mundy 1634; Herbert 1638; Cauche 1651; Marshall 1668; in Khan 1927; Hoffman 1680; this paper) (Figure 4). Pretorius’s report also describes for the first time the foraging behaviour and diet of the red rail. Although worms [= soft invertebrates] were eaten, the red rail probably fed on the abundant terrestrial molluscs as well, as a number of shells of the extinct Mauritian snail Tropidophora carinata exhibit a puncture hole in a uniform position on the whorl close to the umbilicus (Griffiths in Hume and Walters 2012). This wound has been attributed to rail predation (Jones in Griffiths and Florens 2006). The red rail appears to have remained comparatively common until the 1680s, but was described in 1693 as rare (Leguat 1708). Their disappearance coincided with an increase of feral cats (Cheke and Hume 2008), which are formidable predators of flightless or ground-inhabiting birds (Hume and Walters 2012). This was the last time the red rail was recorded.

Neither Graaen nor Pretorius mentioned true dodos. The dodaersen described by Pretorius are certainly referable to the red rail and not the true dodo, which was presumably due to the similarly flightless red rail inheriting the name, purportedly as a result of the extinction of the true dodo (Newton 1868, p. 480; Cheke 2006, 2014). That a name change had taken place cannot be doubted, but that this name change was concordant with the actual extinction date of the dodo around 1662 (Cheke 2006, 2014), or that it survived for another two or three decades (Moree 1998; Sleigh 2000; Fuller 2002; Roberts and Solow 2003; Hume et al. 2004; Hume 2006; den Hengst 2009; Roberts 2013; Jackson 2014), is an issue still waiting to be resolved.

Pretorius described the Mauritius blue pigeon as having a warty face (contra Hume 2011; Hume and Walters 2012), a character seen in all other species of Alectroenas (Gibbs et al. 2001). All contemporary illustrations and accounts (e.g. see Tuijn 1969; Hume 2003; Hume 2011; Winters 2013) show or describe this
species without warts or carunculations, so it was assumed that the Mauritian species lacked this ornamentation (Figure 5). Pretorius’s account suggests that the Mauritius *Alectroenas* may after all have resembled other *Alectroenas* species in having a warty face, despite this being a feature contemporary artists failed to illustrate. The Mauritius blue pigeon was also a difficult species to keep alive in captivity, as all of Pretorius’s attempts at hand-rearing the young and keeping adults alive failed. This was most likely due to the almost exclusively frugivorous diet common to all *Alectroenas* blue pigeons (Gibbs et al. 2001; Hume 2011). It was 130 years or so later in the 1790s that the only individual ever transported alive out of Mauritius reached the Netherlands, where the bird only survived for three months before dying of dropsy (Tuijn 1969; Hume 2011; Winters 2013) (see Figure 5, lower right).

Pretorius mentions the difficulty of catching different species of parrot, including the echo parakeet, alive with nets, presumably for captive keeping. Parrots were regularly captured for the bird trade during the seventeenth century, as a number of parrots were given as gifts or sold by the Dutch to Japanese dignitaries in Dejima, along with the aforementioned dodo (Winters and Hume 2015). Therefore, it seems most likely that parrots were maintained in captive conditions on Mauritius prior to exportation. Mauritian parrots of different species were also mentioned in many earlier accounts, most notably about their tameness and the ease in which they could be caught (Hume 2007; Cheke and Hume 2008 and references therein). Mariners could simply swing a baton in the air to knock down passing birds or make a captured individual squawk in order to attract an entire flock; hundreds of birds could be taken in this way (Hume 2007; Winters 2011). By the late 1660s, it appears that the parrots had become wary, kept to the high trees and had learned to avoid humans, as Pretorius bemoans the fact that they were now so difficult to catch.

The account of Pretorius, along with those from the voyage of Admiral Jacob Cornelis van Neck in 1598 (Het Tvveede Boeck 1601) and the preacher Johann Christian Hoffman in 1673–1675 (Hoffman 1680), provides important information about the colouration and flying capabilities of the raven parrot. Van Neck’s account states:

... a bird which we called the Indian crow, more than twice as big as the parroquets, ... (our translation).

Hoffman (1680) further records:

... red ravens with hooked-beaks and with blue heads, that cannot fly well and are known by the Dutch as Indian ravens [our translation].

The term ‘Indian raven or Indian crow’ was used to describe large parrots and macaws during the seventeenth century (see Hume 2007; Winters 2011), which was thought to be in reference to their raucous, crow-like call, or in part indicative of dark colouration (Hume 2007;
Cheke and Hume (2008). Hume considered that the ‘red’ described by Hoffman was in reference to the beak colour, with the overall colouration being blackish-brown, and the head blue. However, the aforementioned accounts and that of Pretorius strongly suggest that this was not the case. A blackish-brown parrot could hardly be called ‘beautifully coloured’. Based on Pretorius’s description and on reinterpretation of Hoffman’s account, the raven parrot was more likely to have been brightly coloured (contra Hume 2007; Cheke and Hume 2008), being predominantly red with a blue head. Furthermore, its probable relationship with SE Asian parrots also suggests that the bill was similarly red (Hume 2007; Winters 2011). Like other Mascarene parrots, it may have also exhibited iridescence or gloss that changed with the angle of light (Hume 2007; Hume and van Grouw 2014), which could be why it was described as having ‘two or three colours’ (Het Tveede Boeck 1601) (Figure 6).

Pretorius also states that the raven parrot was flightless, whereas Hoffman noted that it could ‘not fly well’. The wing and pectoral bones were reduced in the raven parrot, but not to the extent exhibited in the only known flightless parrot, the Kakapo *Strigops habroptilis* (Hume 2007). It seems likely that the raven parrot had become behaviourally flightless, an attribute that also occurred in another now-extinct island parrot, the Norfolk Island Kaka *Nestor productus* on Philip Island (Gurney 1854). Like the Kaka, this would eventually prove to be the raven parrot’s downfall. That a near flightless parrot survived for so long against plagues of tree-climbing, predatory black rats *Rattus rattus* and introduced crab-eating macaques *Macaca fascicularis* is remarkable, but this ‘mischievous’ and ‘bad-tempered’ parrot, which was also described as ‘fierce and indomitable’ (Herbert 1634), was probably aggressive enough to ward off introduced predators for decades. Ultimately, however, even the aggressiveness of this bird could not stave off extinction. The raven parrot had become scarce around 1669 and Hoffman’s account in 1673–1675 is the last record (Hume 2007). It is a great pity that Pretorius’s attempts at keeping the raven parrot in captivity were in vain (Figure 7); as far as is known, not one individual, alive or dead, ever left Mauritius.

Only the larger Mauritian fruit bat is mentioned by Pretorius and after being considered endangered in the 1970s, has steadily increased in numbers; it is considered vulnerable today (IUCN 2014). A second smaller species, *Pteropus subniger*, was less fortunate. It had a peculiar ecology, roosting in hollows in trees or in caves, and was entirely nocturnal (Cheke and Dahl 1981; Cheke and Hume 2008), so it appears to have escaped the attention of Pretorius. It became extinct on Mauritius around 1870 (Cheke and Hume 2008).

Prior to Pretorius’s account, virtually nothing was known about the ecology of the Mauritian sheldgoose, which disappeared c. 1700 (Hume and Walters 2012). The Log of the President in 1681 (in Barnwell 1950–54) noted that:

Up a little within the woods are several ponds and lakes of water with great numbers of flamingoes and gray teal and geese; but for the geese these are most in the woods or dry ponds.

This account is interesting as, like in Pretorius’s report, the geese were noted as occurring predominantly on land. Furthermore, the tarsometatarsus of this species shows that the legs were more robust compared with the extant Egyptian goose *Alopochen aegyptiacus* (Hume and Walters 2012; Hume 2013, 2014), the most likely founding species. The robustness of the hind limb is indicative of a more terrestrial ecology (Hume 2013, 2014). According to Pretorius, the Mauritian sheldgoose also undertook intra-island migration, being forced south during the dry season (Austral winter) to obtain water. Like many geese, the Mauritian sheldgoose was a grazer and the diet comprised grasses, of which Mauritius once harboured seven endemics (two extinct, the others now endangered), and a number of native and indigenous species (Hubbard and Vaughan 1940).

The dugong, which once occurred in the lagoon surrounding Mauritius, disappeared due to over-hunting around 1800, having been recorded as rare at least from the
1760s (Cheke and Hume 2008). It is not known if the resident population differed genetically from those occurring elsewhere, but dungog have never returned to Mauritius.

After the departure of Pretorius, all subsequent governors and commanders on Mauritius suffered from a lack of support from the motherland and the VOC dependencies at The Cape and at Batavia (Sleigh 2000). The presence of rival French and English trading fleets forced the Dutch to maintain a garrison on the island, but by 1710 Mauritius was finally abandoned. This was in part due to rats, which by 1696 had multiplied to thousands of millions and swarmed everywhere from the coasts to the tops of the highest mountains (Dutch commander Deodati in Liebrandt 1896). The VOC ordered the razing of all buildings to the ground, and all settlers, bar a few deserters and slaves, were repatriated (Moree 1998). During the second period of Dutch occupation, the geese, teal, coots, rails, raven parrots and, of course, the dodo had all become extinct.

It is probable that Pretorius was requested by the council of The Cape to report on the suitability of Mauritius as a source of food supplies and other commodities, and if it was still necessary to send complementary rice. Pretorius, as did many before and after him (Moree 1998), tried to enthusiastically ‘sell’ the island to the council, and in doing so not only described the forests, agriculture, introduced, native and captive species in a positive way, but also provided important details about other things that he thought were worth mentioning, especially if he found them extraordinary.

Pretorius fulfilled the request of the council at The Cape and reported that, apart from rice, Mauritius in 1666–1669 had an abundant and long-term food supply; unfortunately, this was to change drastically by the end of the century:

I believe that if a ship was stranded here for a year there would be no reason for concern about the matter of sufficient food supply on the island. Therefore the rice could be missed. But not for ever.

Supplementary material
Supplementary material related to this article is available online.

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