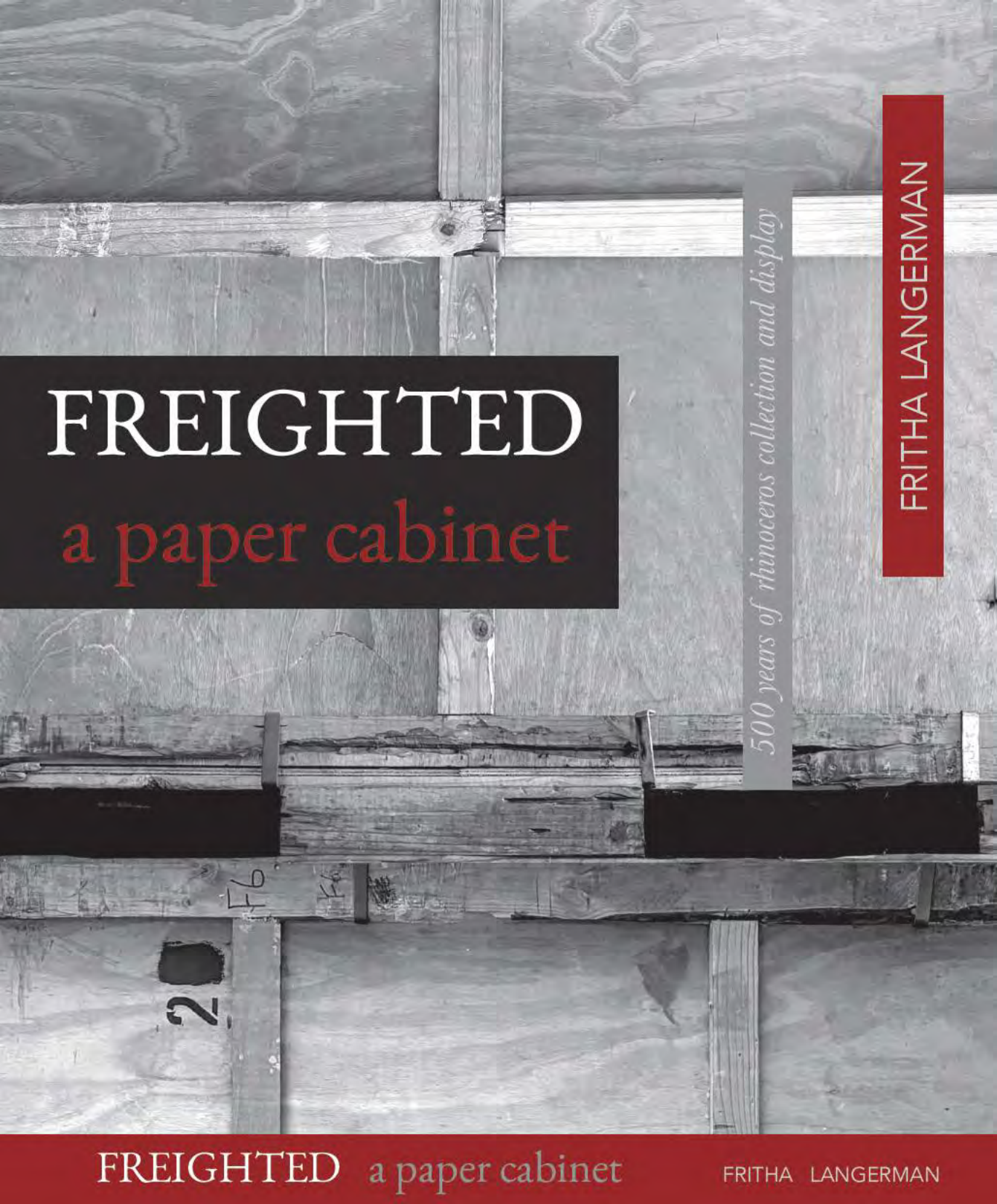

FREIGHTED a paper cabinet FRITHA LANGERMAN

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FREIGHTED: a paper cabinet
A book to accompany the exhibition, *FREIGHTED: 500 years of rhinoceros collection and display.* Exhibited 2018-2026: Iziko South African Museum, Cape Town; National Museum of Science and Technology, Lisbon; National Museum of Natural Sciences, Madrid; Natural History Museum, Leipzig; Royal Belgian Institute of Natural Sciences, Brussels; University of Antwerp; Opel Zoo, Kronberg; Prague Zoo; Natural History Museum, Vienna; Ditsong National Museum of Natural History, Pretoria.

Edited by Fritha Langerman.

Contributors: Peter Anderson, Annie Antonites, Ruth Appeltant, Ronna Bloom, Kathleen Coleman, Susan Dackerman, James Elkins, Denise Hamerton, Catherine Kovesi, Nina Liebenberg, Siyakha Mguni, Bongani Ndhlovu, Kees Rookmaaker, Pippa Skotnes, Catarina Teixeira, Gijs van der Ham and David Waterhouse.

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And lastly, to my family, who have lovingly supported my rhinoceros travels: Andy, Oscar, Echo, Neutron, Electra and Cosmos.

CONTENTS

If the occidental
prototype
is Dürer's little
Indian,
sheathed as if
by a Renaissance
armourer (you
can all but see
the rivets
on the plates) then
we are at a multiple
loss. How can we
see anything so
innocent ever
again? We rue
extinction
for its abrupt
and final un-
spooling of DNA,
but there's a kind
of shunt in
curiosity too:
never again
will we see it
anew. It will go
into the twilight
of curiosities,
the gloom where
dodo and auk
moult to a dust.
Dust to dust.
Yet remember
crossing to Paterson
on the public road
and suddening on
a mother and infant
in the scurf scrub-
land. Everyone
dotes on the obvious
horn, but it is
so plainly antic
phallic. Recall
instead how
bandy-legged
they are, and their
differentially
evolved lips;
and there, in that
degraded thicket
under the low
clout of the sky
out east, how
the infant orbited
its massive maternity.
You were there
with me then,
and now that's
extinct, yet
I'm writing you
this drizzle of words,
pepper-milled
horn of compact
hair. I think lust
drove us forward
before those
all-but-last
rhinoceros
turned for the
occluding
xeric thicket, there
to become
the slenderest
hope of something
enduring.
Monumental,
let's say, got up
on the fifth
day, worked over
by Dürer and Kipling:
after all
deserving their cud,
milk, shadow
and respite. To you
I send this
fond glance
in the rear-view
as we go forward
into the general
catastrophe.

Peter Anderson

INTRODUCTION: OF MOBILITY AND BELONGING

Fritha Langerman

In 1849, Sir Richard Owen, then the Hunterian Professor and conservator of the Hunterian Museum in the Royal College of Surgeons of England, dissected a male Indian rhinoceros. This animal had originally been purchased as an exhibit by the Zoological Society of London in 1834. He was to produce a monograph in 1852 with fourteen accompanying lithographs, which would serve as a core reference for over a century.[1] During this examination, he identified "a small compact yellow glandular body attached to the thyroid at the point where the vein emerged,"[2] a discovery that became known as the parathyroid glands. Also referred to as the pedal scent glands, these are found only in the Indian and Javan species of rhinoceros – *Rhinoceros unicornis* and *Rhinoceros sondaicus*. Territorial animals, rhinos of these species exude a thick secretion from these glands almost continuously, using it to mark their trail and communicate with other rhinos in the area. Between the sixteenth and nineteenth centuries, the many pachyderms extracted from India and shipped via Africa to Europe would have stained their wooden aquatic enclosures with this secretion – both laying an unanswerable trace and trying to interpret their mobile surroundings so very far from home.

The pedal glands introduce the rhinoceros' narrative as one of loss and belonging; of finding home and being found homes; of death, transportation and mobility. The movement of megafauna around the globe has been a symbol of political power and influence for centuries. This includes the many African animals that made their way to ancient Rome, the giraffe presented by the Sultan of Egypt to Lorenzo de' Medici in 1487 as a diplomatic gesture, the giraffe gifted to Charles X in 1827 that famously walked a spectacular 900 km across France and the numerous rhinos that toured European centres between the sixteenth and eighteenth centuries. As much as these animals were exotic curiosities, they were equally symbols of dominion over nature. In all cases, the passage of rhinos was a demonstration of imperial authority and a testament to the control that these powers wielded – not only over animals but over these powers' colonies and human subjects. This spirit was no less apparent in the many natural history expeditions of the nineteenth and early twentieth centuries, which amassed vast collections of dead specimens, as well as collections of living ones to populate the growing number of zoos.

In 2018 I produced an exhibition that reflected on these issues. For the past eight years, *FREIGHTED: 500 years of rhinoceros collection and display*, has perambulated between venues in South Africa and Europe. The project was precipitated by my participation in an exhibition that in 2015 celebrated 500 years of Dürer's image of the rhino. I found the narrative of Ganda, the Indian rhinoceros, compelling and saddening. That this animal was shipped as a diplomatic gift from India to King Manuel in Lisbon and was regifted to the Pope before drowning in the Mediterranean seemed symbolic of the perilous bounty of empire, a theme that resonated for the next 500 years in the collection of animals for museums, zoos, game hunting and poaching. Ganda represents the thousands of specimens that have left the Indian subcontinent, Africa and Southeast Asia for American and European collections since. With this in mind, I conceived a project that imagined a reversal

The London Zoological Society acquired its first Indian rhinoceros in 1834. When this animal died fifteen years later, its dissection, performed by anatomist Richard Owen, led to the discovery of the pedal or parathyroid glands on which much endocrinal research is based. The original organ, measuring 30×14×8 cm, is preserved at the Hunterian Museum.

– a rhinoceros making its way back from Lisbon and Europe to its place of origin. However, this would be a specimen of absence: a travelling museum in the spirit of early travelling animal exhibits, but with the main attraction existing only as a surrogate, a reproduction. As a proxy animal, *FREIGHTED* consists of two wooden crates that together match the size used to transport a living rhinoceros. These crates are lined with cases containing images and objects that replicate collections and archives as simulations. The contents of the cases draw attention to the practices that are anchored to specific historical moments and ideologies, yet which continue to resonate in the present. They reference a broad history of colonial representation and interconnected practices within and beyond animal exhibition and display. In this way the rhinoceros is situated as a player with a wide cultural significance.

The exhibition opened at the Iziko South African Museum in Cape Town in November 2018, from where it travelled by ship to the National Museum of Natural History and Science in Lisbon and then by road to major centres in Europe. It has been shown at the National Museum of Natural Sciences, Madrid; the Leipzig Natural History Museum; the Royal Belgium Institute of Natural Sciences, Brussels; Antwerp University; Opel Zoo, Kronberg; Prague Zoo and the Natural History Museum, Vienna in July 2025. Unlike the many animals that could never follow their pedal secretions home, the exhibit will embark on a final voyage – a journey of repatriation. From 2026 onward, it will be on permanent display at the Ditsong National Museum of Natural History in Pretoria, South Africa. This marks a symbolic act of return.

In recognition of the end of eight years of travel, this book brings together some of the key themes of the exhibition, featuring contributions from authors who have been influential to the project or whose work connects to the passages of the rhinoceros. A 'paper cabinet', it is part serious scholarship, part curiosity and part a collection of tangled narratives. This introduction connects all the multiple intentions and disparate elements through loosely bound threads – quires that are punctured but not fully stitched. It is a delicate amalgam.

Pippa Skotnes, Annie Antonites and Siyakha Mguni provide the oldest references to the rhinoceros in this collection.

Antonites, an archaeozoologist, writes of the genetic divergence of rhinoceros species following their migration from Eurasia to Africa 16 million year ago, using the fossil record to trace these evolutionary changes. Mguni, an archaeologist, examines early depictions of rhinoceros in Africa, from the rock art of the Tsodilo Hills in Botswana to the mythologies of the |xam in the Northern Cape, South Africa. Skotnes writes of the extraordinary paintings of rhinos on the Chauvet Cave and connects their secluded, processional spectacle to the themes of this exhibition.

Classicist Kathleen Coleman's essay reveals how the exhibition of exotic animals in the Roman Empire served as a demonstration of power, reinforced through the circulation of the image of the rhino on first-century coins. At the inauguration of the Roman Colosseum in 81 CE by Emperor Titus, 9 000 animals were slaughtered, including 30 elephants and an African rhinoceros. After the fall of Rome, rhinos disappeared from Europe for centuries, however – until in 1515 the *Nossa Senhora da Ajuda* set sail from Goa for Lisbon, laden with a cargo of spices and a single pachyderm in its hull. Serving as both cargo and ballast, this two-ton creature endured a 120-day journey below deck, rounding the Horn of Africa on a southerly course past the Cape of Good Hope to arrive in Lisbon on 20 May 1515. Traversing the globe from India, around southern Africa to Portugal, the route of the rhino measured the limits of control by the European nation – the rhino's passage actualising the extent of the map. Mobility is simultaneously a loss and a gain, and over 500 years of colonial exploitation have tipped the scales of possession heavily in favour of Western nations.

The spread of Dürer's image of Ganda is an extension of this mobility. Scholars widely agree that it is unlikely Dürer ever saw the creature before producing one of the most iconic and widely published images of the natural world in 1515. His initial drawing was based on a sketch and description by an unknown Nuremberg artist, yet his woodcut was reproduced throughout Europe for hundreds of years, some canonical examples being Conrad Gessner's 1551 *Historia animalium* and Edward Topsell's 1607 *The history of four-footed beasts*. Far from the political diplomacy that first gifted Ganda as a living beast, the rhinoceros' presence endured through its image, functioning as a form of diplomatic exchange through circulation and reproduction. In archival terms, a 'diplomatic transcription' is the attempt to reproduce a source document as closely as possible. While typically applied to historical documents, the international dissemination of Dürer's image became an exercise in this etymological form of the word for centuries to come. Similarly, *FREIGHTED* seeks to reproduce the absent rhino as closely as possible, and this conceptual impetus was informed by Dürer's use of the word *abconderfet* in the textual banner of the print. Susan Dackerman, in her essay, 'Dürer's indexical fantasy: the rhinoceros and printmaking' (from her 2011 book *Prints and the pursuit of knowledge*, reproduced in this book), identifies *abconderfet* – as taken from the Latin *imago contrafacta*, meaning an accurate copy of an absent original – as a copy that bears witness. In the early modern period, images were increasingly deployed as evidence, bridging scientific inquiry and imaginative speculation. Prints in this context gained authority as evidence and verification of 'fact', shaping perceptions of the unknown. Through the concept of *imago contrafacta*, prints became more than mere reproductions; they were visual documents that authenticated knowledge. The *contrafactum*,[3] or *abconterfeit* in German, stood as a genuine proxy of a prototype – both a faithful representation and a substitute. Texts often accompanied such images, providing empirical evidence of the context in which the image was made and reinforcing the image as testimony to an event and the print as a witness of history. By employing *abconderfet*, Dürer's print asserts reliable and direct visual testimony of the veracity of the (absent) creature's appearance, yet at the same time denotes a faithful copy; a copy either of a reproduction or an experience. In the process of production and reproduction of this print, a chain of images emerged as *imago contrafacta*, visual records that bore witnesses to an unseen form.

As a printmaker working with relief processes myself, Dürer's image has been an enduring part of my visual world. *FREIGHTED* draws on this history of printmaking and reproduction – particularly poignant in the current context, where the rhinoceros, threatened by extinction, risks becoming a digital image only. The work highlights these

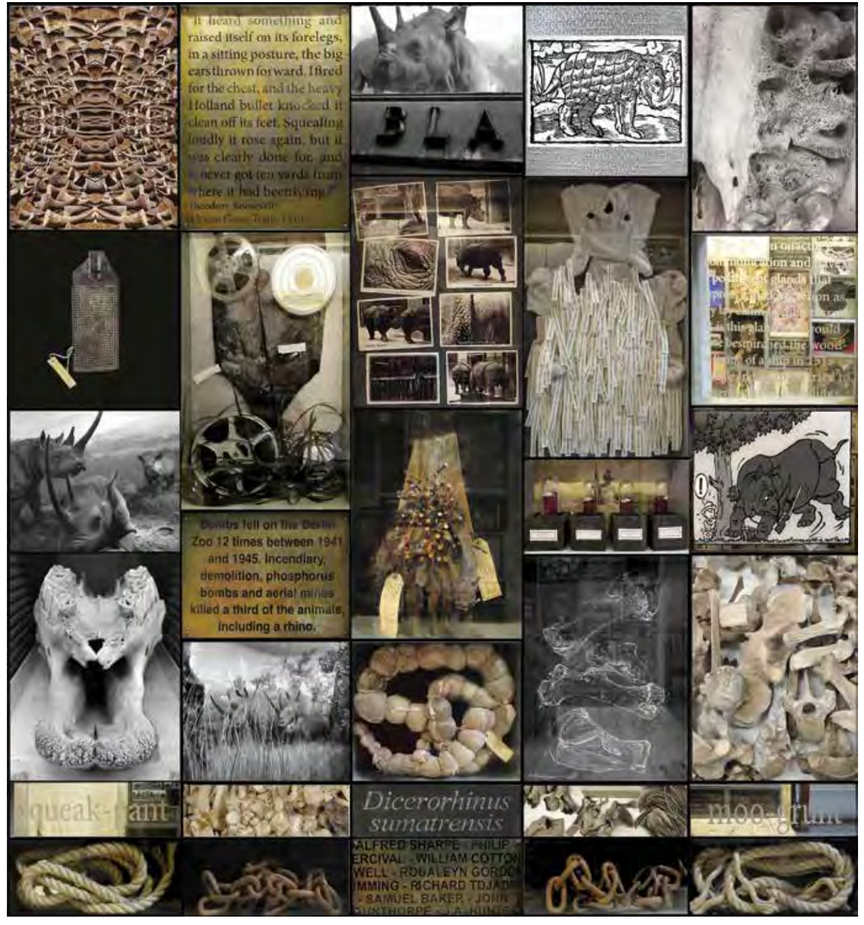
potential lacunae, presenting the rhinoceros in fragments. The interior of the crates become *contrafacta* of 500 years of rhinoceros exhibition and display. Lined with shallow cabinets containing objects, images and videos, the work assumes an encyclopaedic form. Yet there are no 'authentic' objects from collections – everything is reproduced or replicated, creating an analogical reference to the absent rhinoceros and various extinction narratives. Prints have been remade, study skins, labels and documents meticulously copied, teeth and bones manufactured. The exhibition functions as an inventory and an impossible and futile attempt to collect long lists. While the fragment has become a mode of contemporary art practice, set in opposition to the entirety of the Enlightenment list, in this exhibition the list itself becomes a fragment. It stands both as a reflection on museum practice and the museum experience itself, questioning the very acts of collection and display. The Rhino Resource Centre, under the editorship of Kees Rookmaaker, has amassed the definitive encyclopaedic collection of everything that is known about rhinoceroses (http://www.rhinoresourcecenter.com/). A vast compendium of images, journal articles, books and news items, the website has been enormously generative and invaluable to my project. For this paper cabinet, Rookmaaker penned 'Burchell, Teeth, Rhinoceros', an essay linking William Burchell's taxonomic identification of *Ceratotherium simum* in 1817 to the current demise of the subspecies, *Ceratotherium simum cottoni*.

The composition of Dürer's print serves as a reminder of the image as a construction. The rhino's body is tightly cropped within the frame, its scale exaggerated by its proximity to the edges. This compressed perspective emphasises the constricted space, and the frame becomes both a window and a tool of control, establishing a measured distance between viewer and subject. In later representations derived from Dürer's print, ropes and chains become ubiquitous and, tethered and tamed, the rhino operates as both prisoner and sacrifice, both a celebratory and commemorative figure. A transitional animal, it moves between continents, caught between spectacle and subjugation.

Ganda was followed by many other Indian rhinoceroses, among them Abada, the Madrid Rhinoceros, kept by Philip II of Spain in the 1580s, and – perhaps the most imaged rhino of all time – Clara. Known as the Dutch Rhinoceros, she arrived in Rotterdam from West Bengal with her manager, Douwe Mout van der Meer, and moved between European cities as a touring event between 1841 and 1858. *FREIGHTED* follows much of her route. Curator Gijs van der Ham staged an exhibition about Clara at the Rijks Museum in 2022, and his contribution to this cabinet draws on the sad story of her as a spectacle. Accompanying my surrogate rhinoceros on its voyages to natural history museums, universities and zoos, I have increasingly felt like Clara's keeper, or perhaps showman P.T. Barnum, as I perform with the travelling attraction. But unlike Clara, this rhinoceros is neither a living nor dead specimen. Instead, it exists in a state of suspended animation, a physical manifestation of an imagined referent.

During the centuries in which the rhinoceros was absent from Europe – between the imperial powers of Rome and those of Portugal and Spain – it acquired the status of an imaginary beast, an object of invention. Associated with the unicorn of medieval bestiaries, it symbolised both sin and ferocity: a creature that could only be subdued by virgins but ultimately tamed by divine power. Dürer's fantastical interpretation of the rhino reinforced these perceptions. With its second dorsal horn and exaggerated folds of skin, his rendering positioned the animal somewhere between armoury and beast, between reality and invention. Though imaginative, the image gained evidentiary status through sheer circulation, gaining validity and veracity as a reliable rendering over the next 300 years. As Susan Dackerman writes of Dürer's engraving, "the image embodies and enacts the pervasive tension between nascent developments in empirical investigation of subjects from nature and the emergence of artistic practices that articulate the nature of representation itself."[4] His print occupied a liminal space between invention, imagination and observation. Historian Catherine Kovesi explores the interplay between myth, reality and imagination in her contribution, which examines Marco Polo's 1292 description in his travels in Sumatra, where he encountered what he described as a hairy unicorn with a thorned tongue. She argues that this fabrication was shaped by long-entrenched unicorn lore – beliefs so resilient they resisted empirical evidence to the contrary for centuries. This elusive creature and the mystical properties attributed to its

Iziko South African Museum. Photograph: Fritha Langerman



horn have clear parallels with contemporary perceptions of the rhinoceros, particularly in relation to its exploitation. Kovesi, an authority on luxury and consumption in the early modern world, expands on these themes in *Luxury's fragile frontier: the rhinoceros and Venice*, a book that also includes poems by Ronna Bloom. These two poems, reproduced in this paper cabinet, speak to the delicate and complex relationship between humans and the rhino – and what we imagine them to be.

Inasmuch as the exhibition *FREIGHTED* evokes a cabinet, it is equally a book – one that mirrors the museum itself. Conrad Gessner's Renaissance work, *Historiae animalium* (1551), was the first encyclopaedic attempt to list and chronicle all known animals, yet it included mythological creatures such as the basilisk and monoceros (unicorn). The rhinoceros appears in its pages, illustrated with an image derived from Dürer's famous print. Gessner's book was a hybrid of scholarship and imagination – an unprecedented synthesis of cultural and mythological interpretations with detailed naturalistic observations. *FREIGHTED* follows this encyclopaedic model, drawing from diverse references and associations of the rhinoceros across time and geographies, weaving together history, myth and representation.

Books prefigured museums as spaces of natural history collection. John Jonston's *Natural history of quadrupeds* (1657), considered the first book of 'natural history', was the first book to link 'natural' with 'history', omitting allegory in favour of anatomical and descriptive terms. Many canonical natural history texts followed, including Comte de Buffon's *Histoire naturelle* (1749–1804) and Linnaeus' *Systemae naturae* (1735–1768). These books proposed structures for the natural world, organising it within the geometries of the page. Their binary, recto-verso format prefigured the museum as a method of natural collection and collation, with the printed book serving as a template through which nature was classified and compared. The two crates in the exhibition evoke the pages of an open book, with the viewer walking the spine. Mirroring this exhibition, the book's structure echoes the aspect ratio of the crates. *FREIGHTED: a paper cabinet*, is neither a work of natural history nor a catalogue, but rather a work in which the animal is considered as a cultural phenomenon – an artefact of human enterprise. Curator Nina Liebenberg is a maker of connections, and she uses set of steel-rimmed rhino feet in the National Finnish Hunting Museum as the starting point for a web of related inferences in her contribution, 'MM 4672:2-5'. As such, her curation stands as a complement to *FREIGHTED* as a collection.

Not only does *FREIGHTED* draw attention to forms of acquisition and collection, it also interrogates the representational practices of display, both in zoos and museums. Encased within glass tombs and choreographed in arrangements that best depict the human taxonomy of species, the view of the natural world within museums is one of tidy containment. 'Natural history' is both a practice and a concept: of labelling, collecting, naming – all underpinned by an implied progression in time, a linearity or naturalisation of the past. Yet there is an implicit contradiction in these terms. The study of nature is positioned as an empirical, objective endeavour, but it is simultaneously historicised and absorbed into cultural discourse. Just as Renaissance curiosity collections served as instruments of power, asserting dominance through object wealth, the display of natural history within colonial museums remains inseparable from the ideological imperatives that shaped and continue to shape the collection and organisation of nature[5] and the place of humans within it.

These systems of display, which privilege authoritative classification, reinforce narratives of human progress and mastery over the environment. Through exhibition practices, the epistemic values of institutions are made visible, and it is these iconographic structures that must be reimagined if natural history museums are to transcend their colonial and imperialist origins – origins laden with biases and prejudices. *FREIGHTED* functions as a travelling museum that both resembles and confounds these programmes of display. Each panel is densely packed with objects and images, forming an interconnected yet non-linear assemblage. Each case serves as a page, further linking to a website where extended associations unfold.

As an artist-curator, many of my past exhibitions have considered the visual vocabulary of speciation, particularly how it manifests in institutional museum spaces. *FREIGHTED* similarly works as an act of insiderism, simultaneously mimicking the ark, early museums and curiosity cabinets while critiquing

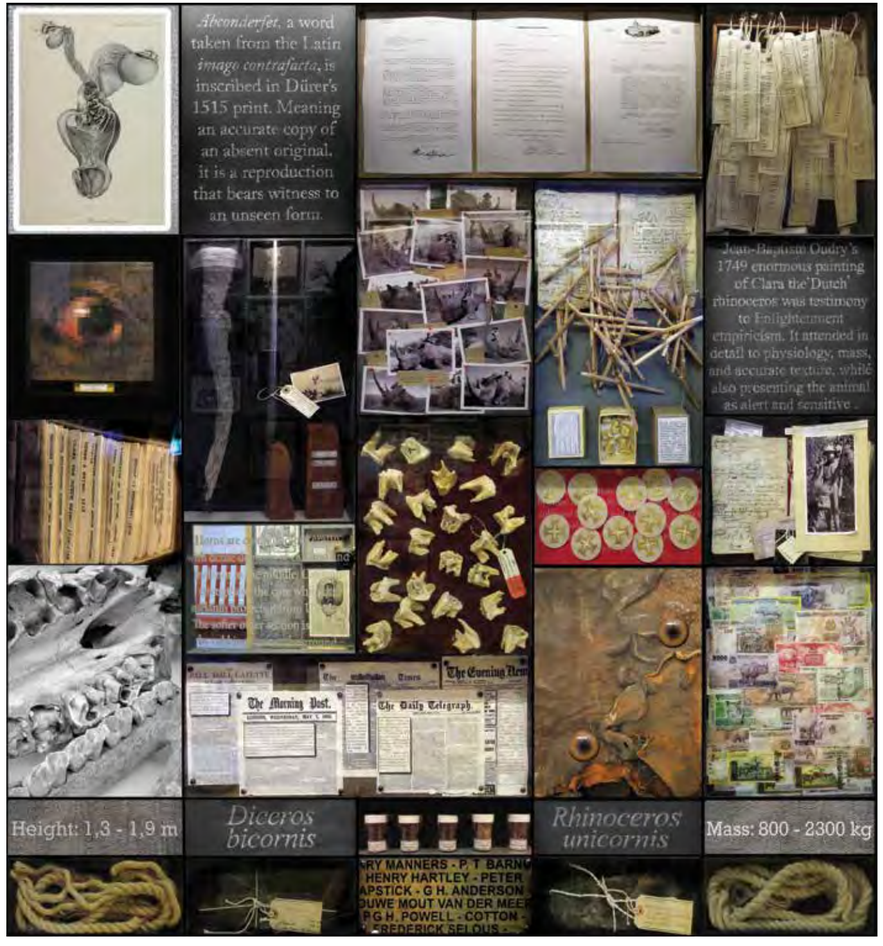
the very museum practices that gave rise to their specimen collections. During my research for the exhibition, I visited numerous museums in America and Europe, examining both their public collections and those in deep storage. I was fortunate to gain access to the collections of the American Museum of Natural History (AMNH) in New York and the Smithsonian National Museum of Natural History in Washington. Many of these collections were assembled during early twentieth-century expeditions, including the Lang and Chapin American Museum Congo expeditions (1909–1915) and the Smithsonian-Roosevelt expeditions (1909–1910) to central and east Africa. These artefacts find their way into the *FREIGHTED* cabinets and the website, both as reproduced objects and images, as well as through photographs of the dioramas and cabinets in these institutions. The dioramas in the Hall of African Mammals at AMNH, created by Carl Akeley in 1950, have become iconic representations of an Edenic vision of nature within museum environments, demonstrating a view of nature that is seemingly untainted by human cultural imprint. Yet while these displays present an illusion of untouched wilderness, they are cultural constructions and products of ideology as much as of science. Natural history museums are not neutral spaces; they are deeply embedded within cultural and historical narratives, shaping and reinforcing particular ways of seeing the natural world.

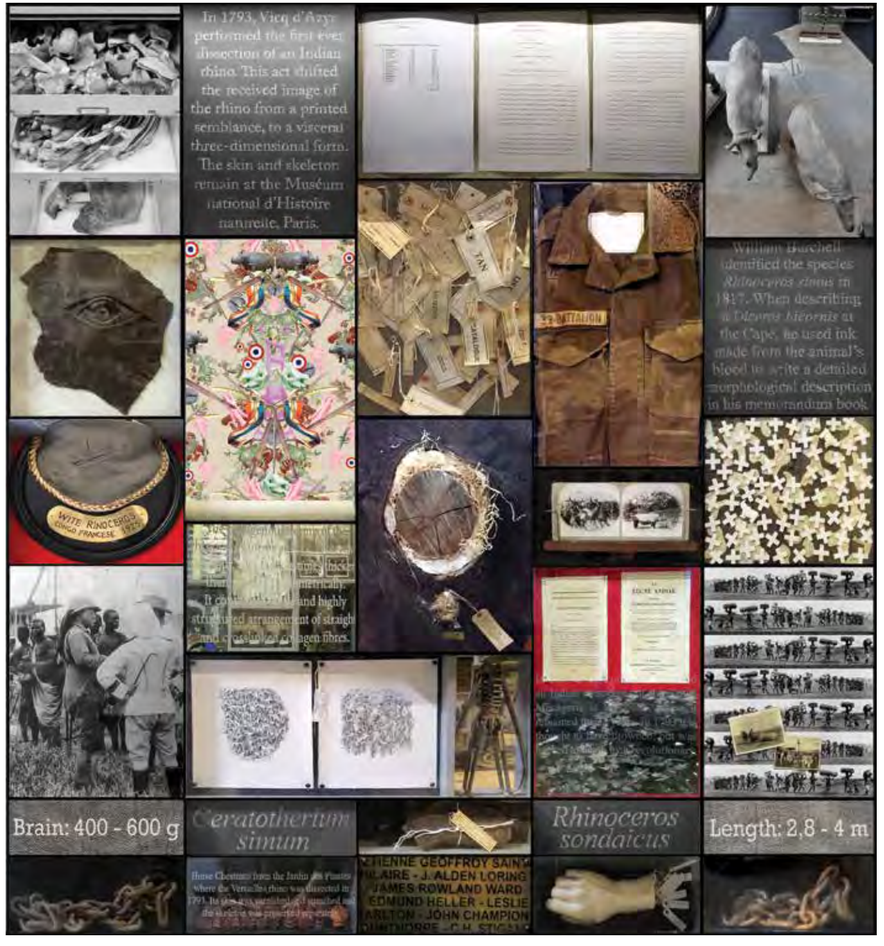
Ironically, the very rhino specimens that were hunted, shipped to the Western world and placed on display in museums have become the targets of a second wave of looting. In the early 2000s, organised crime syndicates began targeting museums, violently removing horns from taxidermied collections. Museum curators Denise Hamerton and Bongani Ndhlovu discuss a colonial-era specimen in the South African Museum collection that fell victim to such theft – an object that now forms part of the *FREIGHTED* exhibition. Meanwhile, Catarina Teixeira and David Waterhouse articulate the challenges of rhino horn replication and mount restoration at the Lisbon Museum, the first European institution to have hosted *FREIGHTED*.

Between Roman times and the end of the twentieth century, more than 2 500 rhinos were kept in confinement.[6] The use of crates in *FREIGHTED* emphasises both the mobility and restriction of these rhinos, underscoring the paradox of captivity. Art historian James Elkins has contributed a short essay, 'Afternoon with zoo people' to this collection. His recent novel, *Weak in comparison to dreams*, follows the character Samuel Emmer as he visits zoos across Europe and America, tracing the repetitive, stereotypical movements of captive animals. This text documents a meeting of zoo rhino experts, exposing some of the absurd contradictions of animal husbandry and conservation.

Outside of museums and zoos, only a scattering of people have ever been in close proximity to a rhinoceros, either alive or dead. Most interactions with wild animals are mediated in some way, and, for many, a soft toy version of the rhino may be the closest material encounter they have. In his essay 'Why look at animals', John Berger argues that our lived connection to animals is eroding, replaced by mediated experiences – through images, video and other media – that shape our understanding of them. He calls this form of looking "compensatory,"[7] suggesting that zoos are "monuments to the impossibility of such encounters."[8] In her book *Extinction narratives*, Ursula Heise writes that "Nature in the sense of a domain apart from human intention and agency no longer exists", and that human intervention means that there is nothing outside of human impact.[9] Animals in zoos and museum dioramas are presented as real and as authentic experiences, yet these are ultimately simulations tailored to meet our expectations of what this experience should be. Visitors' views are directed through bars and through glass, creating a carefully orchestrated spectacle. *FREIGHTED* inverts the relation between viewer and specimen: the viewer is invited into the vitrine, becoming an actor within the enclosed space. By so doing, the work underscores our complicity in framing other species as objects of spectacle.

Heise reminds us that the loss of biodiversity and the perception of endangered species are cultural issues.[10] and that an implicit hierarchy, shaped by aesthetics, economics and ideology, determines which species are valued, mourned or cared for as others are rendered invisible. She describes an "extinction taxonomy" in which species falling outside certain classifications go unnoticed.[11] Most extinctions are thought to have occurred during the twentieth and twenty-first centuries,


Abconderfet, a word taken from the Latin *imago contrafacta*, is inscribed in Dürer's 1515 print. Meaning an accurate copy of an absent original, it is a reproduction that bears witness to an unseen form.
Jean-Baptiste Oudry's 1749 enormous painting of Clara the Dutch rhinoceros was testimony to Enlightenment empiricism. It attended in detail to physiology, mass, and accurate texture, while also presenting the animal as alert and sensitive.
The Morning Post.
The Daily Telegraph
The Evening News
Height: 1,3 - 1,9 m
Diceros bicornis
Rhinoceros unicornis
Mass: 800 - 2300 kg


In 1793, Vicq d'Azyr performed the first ever dissection of an Indian rhino. This act shifted the received image of the rhino from a printed semblance, to a visceral three-dimensional form. The skin and skeleton remain at the Muséum national d'Histoire naturelle, Paris.
William Burchell identified the species *Rhinoceros simus* in 1817. When describing a *Diceros bicornis* at the Cape, he used ink made from the animal's blood to write a detailed morphological description in his memorandum book.
WITE RHINOCEROS
Brain: 400 - 600 g
Ceratotherium simum
Rhinoceros sondaicus
Length: 2,8 - 4 m

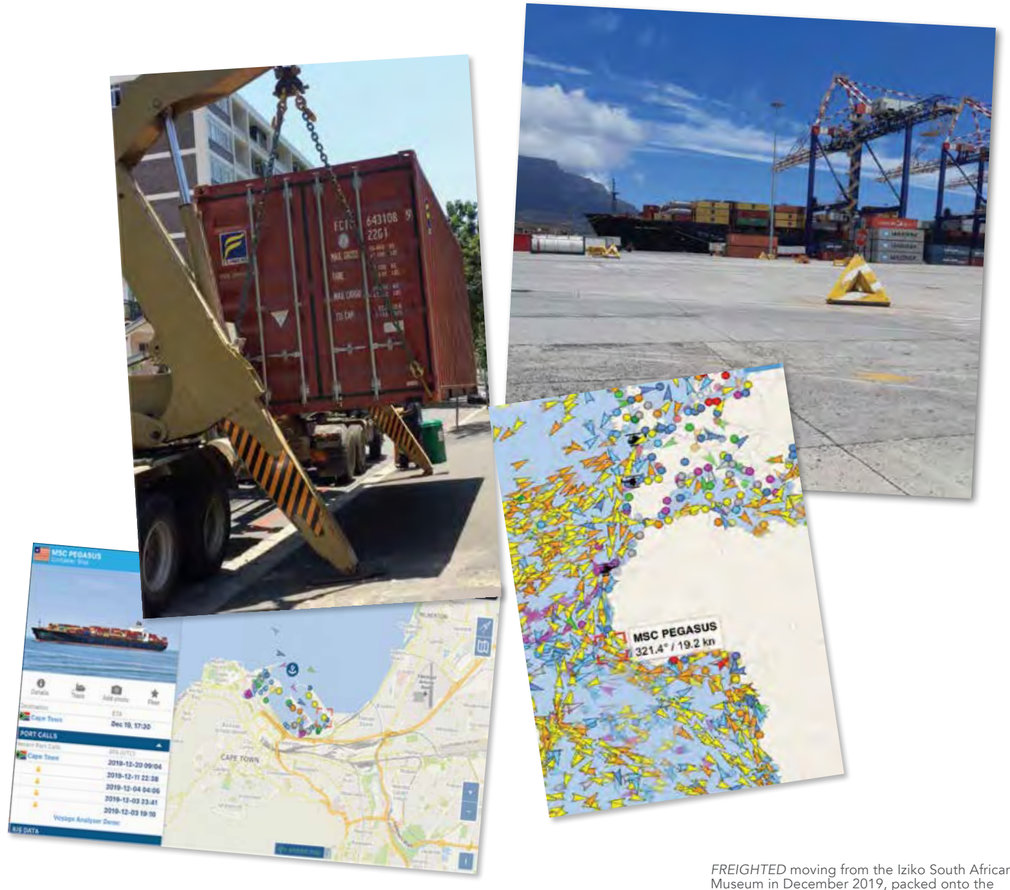
and it is estimated that between 10 000 and 100 000 species vanish each year. For uncharismatic microfauna, most losses go unnoticed, so that "for every species listed as endangered or extinct at least a hundred more will probably disappear unrecorded."[12] The idea of extinction is a longing, an experience of an absence for something rarely known intimately. It is the sense of losing the potential proximity to a species otherwise only known through secondary means. Heise also discusses the "aura of the last", wherein rarity is coupled with value. The rhinoceros does not typically conjure thoughts of intimacy. A solitary animal with an impenetrable hide and notorious bad temper, it is, despite the abundance of soft toys that populate supermarket shelves, not easily anthropomorhised into cuddly companions. Nevertheless, along with pandas and polar bears, they have become emblematic 'megafauna' and flagship species for extinction, symbolising the tragedy and mourning that accompany such loss. In this sense, the rhino stands as a headstone, an immovable block of granite that marks the end of life.

The rhino speaks to the losses of thousands of unseen and less-seen species. In his *Flight ways,* Thom van Dooren notes that extinction stories focusing on the "last of a kind" often centre on individual animals, and typically those in captivity. This perspective can erase the complex entanglements that define an animal's life beyond human contexts, reducing it to a mere specimen. Moreover, extinction is a gradual process of loss and violence that unfolds over time, rather than a single, isolated event.[13] Van Dooren's book surfaces narratives that implicate people in the "webs of entanglement in which living beings emerge, are held in the world, and eventually die. Life and death do not take place in isolation from others; they are thoroughly relational affairs for fleshy, mortal creatures."[14]

The death of the last male northern white rhino, Sudan, in 2018 rendered this subspecies functionally extinct. His final moments, captured in a poignant photograph with wildlife ranger Zachariah Mutai at the Ol Pejeta Conservancy in Kenya, resonated widely, and this individual rhino was mourned throughout the world. The images conveyed a quiet tenderness between the two and the witnessing of the passing of 'the last of its kind' evoked a deep personal empathy for the loss of an entire lineage. With Sudan's passing, the northern white rhino joins species like the quagga, passenger pigeon and mammoth, now subjects of ambitious de-extinction efforts aimed at reversing biodiversity loss. In this era of the sixth mass extinction, zoos and museums find themselves in an uneasy position: while human activity has driven species to the precipice, these institutions are now central to their survival. This paradox, where captivity becomes a tool for conservation, raises difficult ethical questions, and the violence of captivity runs parallel to the violence of extinction.[15] Zoos have taken on an urgent role in captive breeding programmes, safeguarding the last genetic remnants of vanishing species. By reinvigorating DNA and using surrogates, scientists breathe life into absent species that would otherwise be lost forever. Ruth Appeltant works on a pioneering programme that uses stem cell technology to fertilise surrogate rhinos in the hope of reviving the northern white rhino. Her contribution to this collection highlights this intervention and offers a fragile but profound hope for the future.

This book is an assemblage. It mirrors what the rhino has become: an imagined collection of disparate parts, understood through multiple disciplinary lenses, fragmented and disassembled. Like the pedal gland secretion, the rhino has left traces across cultures, histories and geographies. More than 500 years after Dürer created his print of Ganda, the rhino is now imperilled. With some species functionally extinct, fewer than 50 Javan and Sumatran rhinos remaining, only 4 000 Indian rhinos left and the African black rhino population at 6 000, the notion of an image as testament is all the more poignant. It is not impossible that in the foreseeable future, Dürer's rhino will be no more fantastical than the many tourist snapshots taken in game parks today. In the truest sense of *abconderfet*, these digital renderings will bear witness to an absent original, providing evidence of something that, outside of museum collections, no longer exists. Peter Anderson's poems serve as the bookends of this publication and as an elegy of sorts. This is an elegy of an absent species – the ending foreseen – marking the final expirational breath of the last of its kind.

[1] Owen, R. 1852. On the anatomy of the Indian rhinoceros (Rh unicornis, L.). *Transactions of the Zoological Society of London* 4(2): 31–58
[2] Cave 1962: 686
[3] Peter Parshall (1993: 555–6) writes of how this translated visually into a division between invention and objective recording. The term *contrafactum* was introduced as an image as a bearer of fact – a "class of representation that came to be determined by function … for images reporting specific events, and for portrayals of both natural and preternatural phenomena."
[4] Dackerman 2011: 165
[5] See Bennett 1995, 2004; Foucault 2002
[6] Rookmaaker, 1998
[7] Berger 2009: 35
[8] Berger 2009: 30
[9] Heise 2016: 8
[10] Heise 2016
[11] According to science historian Geoffrey Bowler.
[12] Wilcox 1988: ix
[13] Van Dooren, 2014: 11–12
[14] Van Dooren 2014: 4
[15] Van Dooren 2014: 116



FREIGHTED moving from the Iziko South African Museum in December 2019, packed onto the container ship *MSC Pegasus* in Cape Town harbour, and sailing to Sines in Portugal in January 2020.

Photograph: Fritha Langerman

CAVE, CAPTURE, CRATE

Pippa Skotnes

This book opens with a startling, poignant image: an incarcerated Indian rhinoceros staining the wooden floor of its crate with the secreted scent that, back home, would have declared its presence to all who passed by. The invisible stain, conjured only in this paper cabinet, becomes the odourless presence of the rhinoceros underfoot: the trampled place of an animal described by Stephen Jay Gould as "a creature that seems to have survived in its current form for millions of years, evoking the illusion of stasis and an unbroken link to the past."[1] In an era of almost total human dominion over animals, Fritha Langerman's empty crate explodes this image, and with its remade fragments of the contemporary reality of the rhinoceros, stands in almost perfect contrast to the animal's earliest surviving representations.

In December 1994 Jean-Marie Chauvet, Éliette Brunel and Christian Hillaire were searching for sites in the Ardèche in France, and discovered the cave later named Chauvet. They had felt a gentle draft of air coming through a cavity and removing stones, then slithering through a narrow passage, Éliette Brunel saw the cave floor ten metres below her. She shouted into the darkness and the disappearing echo told them they had found entrance to an immense cavern. After collecting equipment, they returned to the shaft and dropped a ladder to the ground below. They could smell the damp odour of clay and, moving in single file, walked into the black, unknown space ahead. What they found was astonishing: floors covered with glistening calcite and caverns so large their torch light could not find the cave walls. There were the bones and teeth of bears, and the hollow nests in which they had slept in for the long cold winters. As they continued stepping carefully in each other's footprints so as not to damage the cave floor, they found small paintings – a symbol, a little red mammoth, a winged creature. Then looming out of the blackness, "an immense red rhinoceros … a real shock, because no depiction of rhinoceros had ever been seen in the Ardèche caves."[2]

Almost hermetically sealed, this vast crate-in-cave-form carried the earliest surviving depictions ever made of rhinos from the Aurignacian into the present. As it turned out there are many rhinos depicted in Chauvet. David-Lewis-Williams, one of the few people to have visited the cave, says there are 34. While numbers mean very little, if nothing, to hunter-gatherer people, the intense clustering and presence of these animals in different parts of the cave suggest that they were much on the mind of the one who brought their likeness into being. With stick, charcoal, perhaps stone blade in hand, the maker drew, scratched and scraped, creating thick engraved marks and sooty black outlines with gestures that are very rarely seen in the more controlled fine-lined art of southern African hunter-gatherers. The images conjure not only a species of animal, but the presence of the human at work. I see a man with outstretched arm, toned and shaped by well-exercised biceps and brachioradiales. I see a focused attention on finding the form, creating a sense of movement, exposing the white clay surface of the walls to throw the weighty figures into relief. I see perspiration and labour and the pleasure of recognition as idea materialises as image.

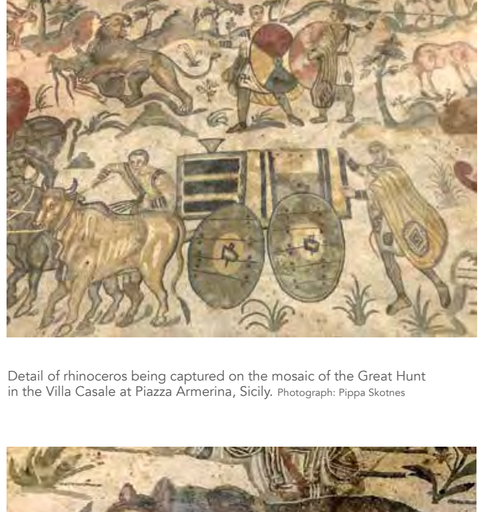
In one scene somewhat confusingly called the Lion Panel (since it comprises as many if not more rhinoceroses than lions, and includes a mammoth, perhaps a horse, a bison and other forms) crowded groups of images are folded over an undulating rock surface. The torsos and faces of the lions, beautifully rendered in profile, appear to head towards a congested mass of animals and shapes and beyond them to a group of rhino. Most of the rhinos have the horns we might expect to see,

Replica of the paintings in the Chauvet Cave. Photograph: SYCPA-Sébastien Gayet

others are greatly lengthened like giant simitars, their outlines repeated in several rows. Did Lewis-Williams count seven rhinos (there are seven horns), or four (there are four nuchal humps) or one, vigorously shaking his head? Most appear to be moving along the cave wall in one direction, two have reversed course, none face the sweaty maker. These animals are moving on and moving away. The procession, vigorously drawn and engraved, seems less an attempt to confine, for all time, and more a way of recognising the world of free and autonomous beings beyond the cave.

The rhinos in the Chauvet cave continued to exist in their soot-black time capsule as they became extinct in the wild in Europe, along with the cave lion, the woolly mammoth and the cave bear. It would be many thousand years before the making of the next most striking surviving image of them was created outside of a cave, this time on the floor of a Roman villa near Piazza Armerina in the early 4th century. If not the first to do so (the Greeks depicted the rhino before them, as Kathleen Coleman's essay in this volume shows), the image of the capture of an Indian rhinoceros in the long passage of the villa heralds and celebrates with astonishing detail and poignancy, the violent war against the rhinos begun by the Romans in the common era. Here the animal is tied with ropes, and dragged towards waiting boats to take it to one of the amphitheatres of the Roman Empire. The crates depicted are not unlike Langerman's crate in size and construction, apparently wooden, but with grills to allow for the flow of air. These crates too, would have been stained with the scent that marked the captive's temporary territory.

The resonance of Langerman's crate, becomes a counterpoint to the wonder of the charcoal drawings of Chauvet, and the fulfilment of the mosaic depictions at the Villa Romana. Her bounded representations must be read, studied, correlated, accounted for. To know her absent rhino, we must understand the spectacles, the dissections, the superstitions, the careless hunts, the countless depictions, the human names, the expressions of human power and desire. And we can know all this through the repeated framed facsimiles and in the context of the chains and ropes that fill the lower cases of the four sides of her crate. But to truly know Langerman's rhino we must also hold in mind its opposite: the depictions of animals that, as Renaud Ego most eloquently writes, have "been subjected



Detail of rhinoceros being captured on the mosaic of the Great Hunt in the Villa Casale at Piazza Armerina, Sicily. Photograph: Pippa Skotnes

to a fascinated gaze, as though their singular bodies, fur, and distinguishing marks were the key to some knowledge kept secret through silence – the unsettling silence of animals."[3]

Langerman's crate has, by now, travelled to many capitals in Europe and been visited by thousands of people in the noisy context of captive animals in zoos and specimens in museums. She speaks for the silent animal. The cave that is its opposite is mute, closed to the public, and few people will ever know of its riches (except ironically, in replica). Sealed for tens of thousands of years, it has only been seen by relatively few recent visitors, and its vast spaces and densely packed images remain hidden in the perpetual darkness. Unlike Langerman's portrayals: fragmented and dismembered representations of human power over animals, the images in Chauvet show only creative power: the trait that represents human imagination. Then the charge was to represent something of the wholeness of what a rhinoceros might mean. More recently it has been to classify, dissect, mutilate, traffic and devalue. The mirror Langerman's crate holds up to us as viewers is the image of the post-cave-human similarly boxed, broken and degraded.

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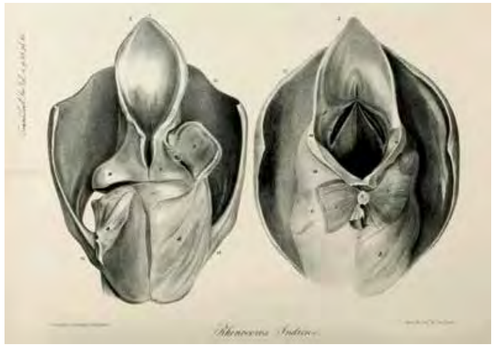
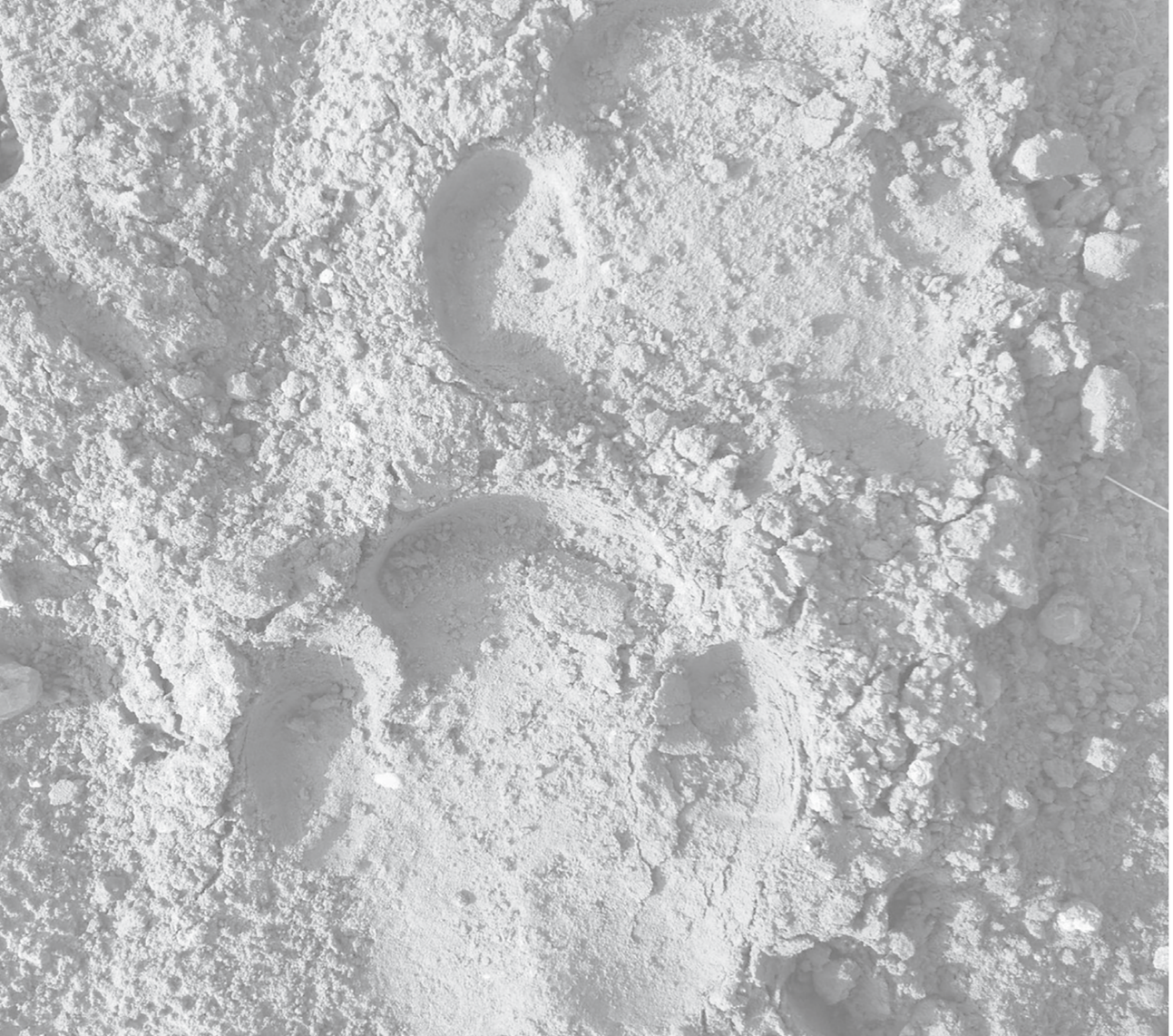
[1] Gould, 1980: 147-157
[2] Chauvet et al, 1996: 41
[3] Ego, 2015: 5



Anatomical drawings of an Indian rhinoceros, back view of the larynx
From Richard Owen, 1852. 'On the anatomy of the Indian rhinoceros' (L.).
Transactions of the Zoological Society of London

Rhinoceros are largely solitary creatures, yet have a range of different social behaviours that include olfactory, visual and auditory communication. They communicate by scent marking: dung scattering and urine spraying, but also have a range of vocalisations that include: Hiss, Snort, Moo-grunt, Hic-throb, Mmwonk, Humph, Bleat, Squeak-pant and Shriek.



A SOUTH AFRICAN PERSPECTIVE ON RHINO HISTORIES

Annie Antonites

Rhinoceroses have been inhabitants of the African continent for millions of years. Here, people and rhinos share an intertwined history – from early modern humans hunting them with stone-tipped weapons to their use as political power symbols in early kingdoms and their emblematic representation of shamanic transformation in San rock art. Palaeontologists and archaeologists approach the study of these mega-herbivores in different ways to access layers of evolutionary, environmental, social and symbolic meaning.

Once a diverse clade, rhinos have been reduced to only five species: black, white, Sumatran, Indian and Javan. Genetic analysis of fossil, museum and modern specimens has revealed that the African and Eurasian lineages split around 16 million years ago. Rhinos immigrated from Eurasia to Africa via the land bridge between the Eurasian and the Afro-Arabian landmasses. From here, mixed-feeding ancestors of the two African Diceroti started to diverge between 5–6 million years ago into the browsing black and the grazing white rhino – mainly driven by larger climatic changes. Gene flow between the two species continued, and evolutionary biologists argue that by around 3.3 million years ago, animals with distinct preferences for either grasses or woody shrubs had diverged into reproductively isolated species. The earliest fossils of modern dietarily specialised black rhinos, from Koobi Fora in Kenya, date to ~ 2.5 million years ago, and modern white rhino fossils, from Olduvai in Tanzania, to ~ 1.8 million years ago.

One of these two species walked across a dune surface on the Cape south coast of South Africa during the late Pleistocene. Its footprint became fossilised in the sunbaked sand, covered by millennia of sediment deposition. To the untrained eye, the large footprint has an amorphous shape. Using image enhancing software, however, reveals a familiar tridactyl shape with rounded digits. Both black and white rhino fossils are present in the region's Pleistocene record, but it is not possible to confidently assign the footprint to either species.

Comparative skeletal anatomy forms the basis of palaeontology and archaeozoology – disciplines that study ancient animal remains. Skeletons of once-living creatures line the shelves of museum storerooms, kept as biodiversity records that form the backbone of scientific study. Individuals of known species, recorded at the time the specimen was accepted into a museum collection, enable the comparison of anatomical features between black and white rhinos.

Differences in anatomical features – such as the shape of articular facets and the proportion of compact bones – can help to differentiate between the bones of black and white rhinos. Because of their different browsing and grazing diets, their teeth also look slightly different. White rhino teeth have higher crowns, their worn occlusal or biting surfaces are flatter and the occlusal outlines of their lower cheek teeth are distinct from those of black rhinos. Dental eruption and wear rates measured in extant specimens of known ages can also be applied to fossil teeth.

The plants that the two rhino species consume follow different photosynthetic pathways with specific carbon isotopic signatures. Analysis of these molecular signatures imprinted within fossil bones and teeth can identify the carbon source as originating from twigs and leaves or from grasses. These types of analyses enable us to picture individual rhinos in their past landscapes.

Distinguishing species in figurative art draws on the physical and behavioural features of the two rhinos. Arguments are made based on a combination of elements, such as size, lip shape, ear shape, lumbar and pelvic humps, tail position,

position of the calf when moving (front or back) and how the head is carried.

Rhino remains occur at South African archaeological sites associated with early modern humans through recent centuries, but their occurrence is uncommon and usually limited to a few isolated bones or enamel fragments.

During the Middle Stone Age (~ 280 000 to 50–25 000 years ago), early modern humans consumed and deposited rhino portions at several sites in the Eastern and Western Cape. The presence of white and/or black rhinos not only provides information about the prevalent environmental conditions at the time, such as grasslands or tree cover, but also on strategies that early humans used to acquire dangerous prey. The small number of rhino skeletal elements at Middle Stone Age sites could, on the one hand, point to carcass scavenging. In this case, only easily transportable parts would have been brought back to shelters. On the other hand, dangerous prey such as eland, buffalo and the extinct giant buffalo are also present at the sites. The presence of other large-bodied species, together with hunting tools, shows that early modern humans were able to hunt or trap large prey. Perhaps the low incidence of rhinos at these sites is due to the availability of other meat, a reluctance to hunt dangerous prey or even to small rhino populations in the landscape.

More recent evidence for rhino hunting or trapping comes from a first millennium CE site in the modern-day Kruger National Park. At a hunting village on the Letaba river, archaeologists excavated fragments of black rhino bones. The animals were likely killed for their horn – an item traded with other animal products across the Indian Ocean rim in return for glass beads. As rhinos are creatures of habit, people may have used pit traps along regular pathways to water to immobilise them for an easier kill. The archaeological evidence for black rhinos at Letaba suggests a wider distribution range in the past than today. This change may well be linked to larger climatic and rainfall shifts.

The Mapungubwe gold rhino is arguably the most iconic cultural incarnation of this large herbivore. During the thirteenth century, rulers of the Mapungubwe kingdom in the northern parts of the Limpopo Province incorporated rhino imagery into symbols of leadership. Some scholars argue that the figurine is of a black rhino, drawing parallels with characteristics such as dangerous behaviour, unpredictability, power and solitary life to those of the Mapungubwe rulers. The figurine measures 55 millimetres in height and was made from gold foil pieces fastened to a wooden core with small gold tacks. It is possible that the rhino was mounted on a ceremonial staff that formed part of the royal insignia and was later buried with the ruler after his death.

Rhinos have also been a feature of southern African figurative art for the last 30 000 years. At the Apollo 11 Cave in southern Namibia, seven painted portable stone slabs were discovered that date to the Late Pleistocene. These represent the oldest preserved figurative art in southern Africa, and one of these stone slabs portrays a rhino.

Golden rhinoceros from Mapungubwe.
Photograph: University of Pretoria Museums

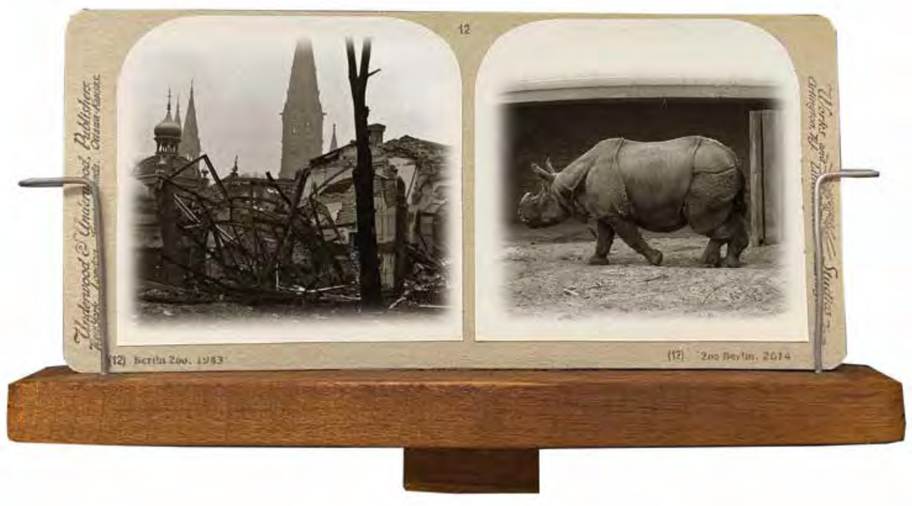
They also feature in later hunter-gatherer San rock art, where they are more commonly engraved on rock surfaces than painted. Sixty-two rhino engravings were recorded at the site of Thaba Sione in South Africa's North West Province. Here, smoothed outlines of some figures mimic the animal's habit of rubbing against rocks to remove parasites – the creators clearly combining observed behaviour with beliefs. San ethnographies suggest that some groups attached supernatural importance to rhinos.

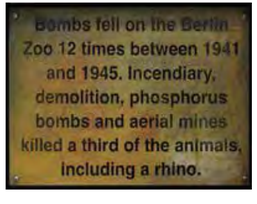
In general, black rhino depictions far outnumber those of white rhinos, even in regions where both species occurred together. At Thaba Sione, however, most engravings are of white rhinos. Their predominance is curious but may relate

Rhinoceros skin. American Museum of Natural History Collection.
Photograph: Fritha Langerman, 2017

to conceptions of potency. Many San people believe that fat contains a high concentration of supernatural power. The white rhino, with its very thick fat layer between hide and flesh, could well have signalled high potency levels – like the famed eland that is so common in the region's rock art tradition. Shamans may have drawn on rhino potency to heal people or control game. At Thaba Sione, a depiction of a shaman transforming into a rhinoceros links the animal to shamanistic beliefs.

Exhibition detail.
Photograph: Fritha Langerman





Exhibition detail.
Photograph: Fritha Langerman

Photograph: Fritha Langerman

BEAST OF BEAUTY AND POWER: A RHINOCERINE GYNOCENTRIC METAPHOR IN A |XAM STORY

Siyakha Mguni

Centuries of curiosity witnessed the objectification of rhinoceroses largely from modernity's ever-prying gaze, often intrusive, violent and destructive. Predicated on anthropocentrism, the cost of this gaze is its contribution to the near extinction of members of this family. The collision of humans and rhinoceroses falls in the broader area of human–animal relations. The exhibition *FREIGHTED* is a glimpse into natural history pursuits that have long exposed rhinoceroses to slaughter. The very organisms which humanity sought to discover were killed and turned into skin-and-bone facsimiles that largely served the gaze. Voyeurism engendered a harmful blending of knowledge with pleasure by collapsing visual and heuristic contexts. The vulnerability of rhinoceroses, with their peculiar appearance playing into the spectacle, fell at the heart of age-old practices in museums, circuses and zoos. All this stirred common imagination in ways echoed by Emilio Gargioni, art collector of modern rhinoceros art, who said of his inspiration, "I had two passions: from one side the preference for grotesque art, from the other the interest for endangered species…to put together an ensemble of artworks devoted to an endangered grotesque animal and then the rhino came out!"[1] Grotesquerie and endangered-ness are shrouded in this articulation, as both these qualities are framed as bizarreness repurposed into the currency of the contemporary gaze.

Conversely, a healthy place of refuge for rhinoceroses is shown in the abridged |xam myth described in this essay. KhoeSan worldview holds animals as sentient kin to humans. Though not a contrast of pre-literate ways of knowing with scientific approaches, this piece uncovers a congenial kind of gaze with which ancient societies probed the biosphere for clues to understand and frame their own place in the cosmos. Prehistory studies show that profuse savanna biomes nestled human lifeworlds for many millennia, from early foragers who roved the craggy landscapes to later herders and farmers on the plains of the interior plateau. Not only did these biomes offer humans ample faunal and floral food sources and by-products, they also provided a rich menagerie of cognitive tools to think with when organising themselves in the biosphere and their social interactions. To that end, rock art offers a unique vista into those long-gone ways of thinking and knowing.

Rhinoceroses in KhoeSan worldview, with particular emphasis on the |xam

Rhinoceroses rank second only to elephants in size, strength, grandeur and resilience. Despite local-level variations, they generally surpass elephants in vivacity in ancient visual imagery around the world. They have featured in beliefs and cosmologies of forager-herder societies and agropastoralists since antiquity. In world rock art, the oldest known rhinoceros images date between 26 000 to 32 000 years ago on the walls of Chauvet Cave in France.[2] Similarly, about 30 000 years ago, people in Africa painted rhinoceroses typified by images on portable stone slabs that were excavated at Apollo 11 site in southern Namibia.[3] The undated regional sites, however, show rhinoceroses as more plentiful and contextually varied than their Upper Palaeolithic and African Pleistocene counterparts. Figure 1 depicts four rhinoceroses in varied manners. Rhinoceroses are seldom depicted in groups in this region but

Figure 1. An engraved rhinoceros from Mamuno in western Botswana, showing similar features and proportions as the painted examples from Tsodilo Hills. Photograph: Siyakha Mguni, 2013

often singly (fig. 2) or surrounded by archers, being hunted. While twosomes or mother-calf pairings are familiar, this panel of a possible family group is rare. Following the widespread pattern of San imagery, some features of these pachyderms are purposefully accented while others are enfeebled. In this formality, disproportionality sets the distended bellies and large horns in disharmony with the short limbs and small heads. These meaningfully constituted asymmetries and associations direct the observer's attention to the subject's highlighted particulars. Likewise, omissions are crucial in gesturing significance.

Though the only two extant African species – so-called black and white rhinoceroses – are double-horned, the uppermost rhino on the right side of the panel has a single large horn. Its near match underneath has two horns that are remarkably true to proportions in reality. A little below this rhinoceros is a calf, which, unlike the outlined adult animals, is fully shaded. A notable presence in this cluster is an outlined bovine placed behind the rhinoceroses, but in relational unity with them. This bovid is often speculated to be an ox, but based on the typical deeply curved horns, sturdy neck and short-humped back profile, it is more likely a buffalo. The significance of rhinoceroses is further confirmed not only by these enduring paintings and engravings, but also by sculptures in wood, terracotta and metal found in excavated deposits. In South Africa, the iconic Mapungubwe golden rhinoceros falls in the latter category. Even more evocative of rhinocerine aura in indigenous architecture are plinths, stelae and monoliths that stand erect in the manner of horns of this species, adorning walls, entrances and courtyards. Amidst this diversity of representation and signification, the keys to the symbolism of rhinoceroses are attainable by probing diverse culturally situated stories, such as found in the nineteenth century |xam folklore collections.

Numerous tales in southern Africa depict the rhinoceros as irascible and aggressive. Indigenous oral accounts, early explorers' travelogues and even modern-day safari diaries attest to common rhinoceros attacks. And for good reason! When threatened or provoked, a rhinoceros would inevitably charge as a pre-emptive display of territoriality and would even attack in self-defence. Predictably, tragic rhinoceros encounters were common among the colonial |xam-speaking San in the Northern Cape. For example, *ttõnŏ wŏ*, the maternal grandfather of ǁ*kabbo*, one of the foremost |xam teachers, was impaled to death by a rhinoceros. On another occasion, ǁ*kabbo* himself was gored by a young rhinoceros. No megaherbivore is more cross-culturally revered and well-signified in diverse knowledge systems. No wonder the conceptual equivalence (i.e. weapon of war) is the word "¯di" from several Ju|'hoansi dialects and

Dama in Namibia, meaning both the rhinocerine long horn and the broad-bladed assegai such as that used by the Herero.[4] However, the perceived rhinocerine bellicosity is not so much in form (aggression) as it is the content (motivation) of their hostility. As expressed in the |xam story, this division is evident in how different cultures in this region understand the species from taxonomic and behavioural viewpoints.

A less-recognised rhinocerine trope occurs in the long but little-known |xam story titled "The she-rhinoceros and her elder daughter's suitors"[5] (for brevity, the story is considerably paraphrased here). A she-rhinoceros had two daughters, the elder called !kwa-!khe and the younger Ssuai-ssuai-ǁa-|uhai (or Driving-away-husbands). It happened that suitors started to visit !kwa-!khe in secret courtship. One after the other they came into her hut, but each time the mother rhinoceros abruptly interrupted their brief rendezvous. Unbeknownst to them, Ssuai-ssuai-ǁa-|uhai espied all their clandestine visits and alerted her mother for a reward of morsels of food. The jackal went into her hut first, then another jackal came, who was himself followed by the hyena, and fourth came the lynx to join the courtship. "Be quickly flying! Be quickly flying!" Ssuai-ssuai-ǁa-|uhai urged as she sprinted to inform her mother that a man had come to her sister's hut. "Oh mother! A man is the one who is yonder with thy daughter." Her mother replied, "Go and fetch the short horn, for uncle jackal it seems to be." Putting on the horn, she fiercely attacked the suitors, "lifting up" each one in turn to drive them away. (While the |xam called the short horn of the rhinoceros !kuruken, there is no direct name for the long horn. There is also no indication that they distinguished between the species of rhinoceros.) Meanwhile (and to no effect), the silver fox kept watch over these rendezvouses, screaming and throwing sticks to warn the lovers of the approaching she-rhinoceros. She did not come gently but ǁkwommaŋ-ǁkwommaŋ, a swift lumbering rhinocerine gait that lifts up a menacing dust cloud.

At last a brave leopard took on the courtship challenge. First he approached !kwa-!khe while she was sifting Bushman rice at the waterhole, and he persuaded her to take the bounty back to her hut in his company. He said: "I do not intend to eat, for I do not eat raw Bushman rice. For thou must quietly go drying to place for me the Bushman rice." When they returned home, the younger sister threated to expose this suitor too, but !kwa-!khe reacted "Oh Person! Thou dost seem to think that jackals and their companions they are. For a man who is different is there" The young sister ignored this retort and reported to the she-rhinoceros: "Oh! Our mother here, the man who is yonder with thy daughter, he does not resemble the people who have been coming, for a tall man he is. His eyes are not small. The man has lain down." As she always responded, the she-rhinoceros said, "Thou must go to fetch for me the long horn; thou must not bring the short horn; … fetch for me the long horn, the real horn; for, Uncle Leopard it seems to be." Despite her several attempts to impale and "lift up" the suitor from the ground, the leopard remained unperturbed, and so eventually took !kwa-!khe in marriage. "My daughter's little husband!" exclaimed the she-rhinoceros, standing with her back to the leopard – possibly in reserved satisfaction.

While rhinoceros grotesquerie has gratified scientific and voyeuristic gazes, from trophies adorning walls to taxidermic models in museum displays and presences in zoos and circuses, the unparalleled beauty of this species can only be fully appreciated in its natural settings. This |xam story highlights the spirit of this contextual emphasis: rhinoceroses are beautiful in their place. Established readings usually invoke rhinocerine masculinity predicated on their horns, from signifying royal strength and authority among Bantu-speaking groups[6] to the notions of their fat's supernatural power in rain-making symbolism among KhoeSan societies.[7] In an unfamiliar interpretation, this story exposes rhinocerine gynocentrism. Prevailing perspectives, informed by androcentric worldviews, emphasise masculine supremacy among Bantu-speaking patriarchal societies, and are inconsistent with the largely egalitarianist KhoeSan societies. Hence, the story portrays the virtuosity of the she-rhinoceros as overprotective motherhood, while her daughter exudes a latent fecundity of youthful femininity, both desirable qualities in hunter-gatherer societies. !kwa-!khe's feminine charm is signalled by relentless courtship pursuits from many suitors – notably all are carnivores, from smaller canids to larger felids (the hyena too, as an intermediate feliform). It is plausible that !kwa-!khe's frustration with familial meddling rested on naivety from being infatuated by her desirability to her suitors. But her wise mother actively shielded

her from vulnerability, as would a responsible mother. Her determined goring of these untried and ineligible suitors was itself an effective selection process for a good husband. Chronic antagonism was aroused in response to the suitors trying to take her daughter without the mother's consent or proper decorum. The caveat is therefore in recognising a mother's capacity for discernment of uprightness in a suitor who might be a good husband for her daughter.

In reality, female rhinoceroses typically raise their single calves on their own, oftentimes in solitude. Furthermore, males do not generally stay with the harems after mating, nor do they defend females and calves from harm. This incongruity is not lost in the story, as the failed suitors point out that the he-rhinoceros just lies at home while they rendezvous with !kwa-!khe. Unlike strongly bonded elephant societies, where the young are raised communally, rhinoceroses habitually pursue single parenthood, with ferocious maternal overprotectiveness being a necessary survival strategy. Females reach reproductive maturity early in their lifecycle, just a year or two after being weaned. In some respects, this biological trait mirrors the journey of motherhood in KhoeSan societies, where motherhood is realised early in life. Here too, as with rhinoceroses, it is evident that although the San live highly social lives, mothers still raise one child at a time, with infants nursing longer than in other societies. But San children have stronger bonds with their mothers than with any other group members, a fact that is also observable from the archival genealogical profiles of |xam informants.

Figure 2. An engraved rhinoceros from Mamuno in western Botswana, showing similar features and proportions as the painted examples from Tsodilo Hills.
Photograph: Siyakha Mguni, 2013

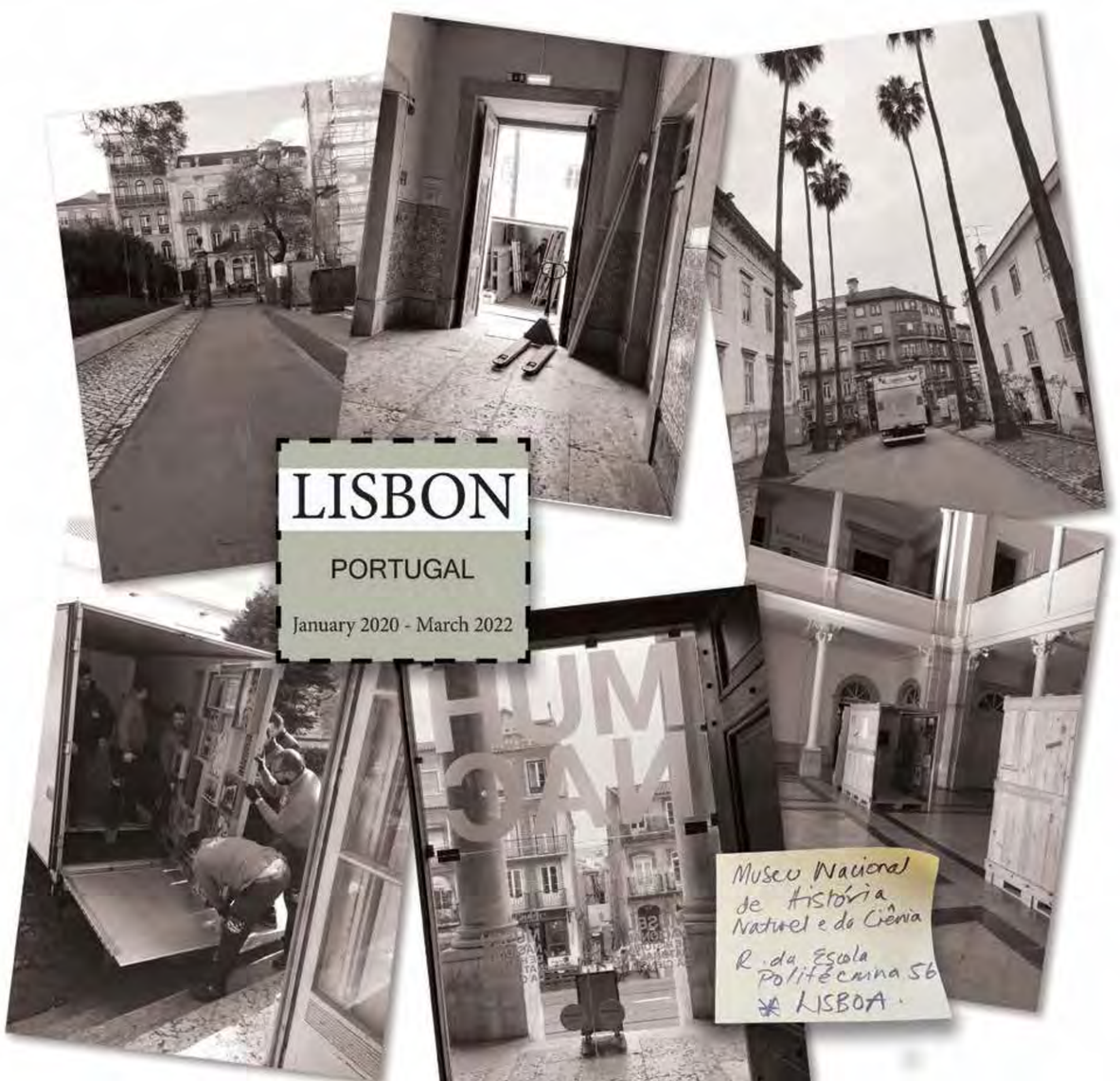
In |xam knowledge and experience, informed by observations of predator-rhinocerine relations, the rhinoceros horns echo the feminine strength and aggression that emerge from selfless motherhood when protecting young. Significantly, the artists of the Tsodilo Hills panel downplayed sexual dimorphism in rhinoceroses and did not separate the two African species, preferring instead to portray them very likely as a single category that bears these maternal virtues. In parenthood, therefore, it is unimportant that males are absent fathers, as the desired qualities are pre-eminently possessed by ever-present females, who are responsible and overprotective mothers. Virtuous motherhood is a social competency marker of leadership in the family and even in a network of close-knit families. The she-rhinoceros signals this resonance when she "puts on" the horns, first the short one and then the long one, to repel the unwelcome suitors of her daughter. A consideration of |xam lexicon sheds light on idioms employed in the narrative: the verb "!kʌm:" means "to put on" and "to lead, be first, return."[8] All these metaphorical resonances come into force in the story. When the she-rhinoceros "puts on" the horns to fend off her daughter's suitors, she demonstrates her leadership by proactively rising up to the challenge of confronting carnivores even as the unconcerned he-rhinoceros lies snoring under a thornbush.

Recalling the buffalo on the Tsodilo Hills panel, it is plausible that this representational focus echoes territorial security of the breeding ground. In megaherbivore inter-species interactions, buffaloes and rhinoceroses are fierce antagonists, even as the latter habitually win territorial battles. To extrapolate from the Zulu worldview, buffaloes epitomise the social category of maleness,[9] as do carnivores. Similarly gendered interspecific social relations are re-enacted by the Swati during the Incwala ceremony, where the lion, signifying the King (iNgwenyama), is conjoined with the elephant, a category symbolising the Queen (iNdlovukati), as twins[10] uniting the masculine-feminine power nexus. These ideas spring from long-established meshing of animal symbolisms within Nguni-KhoeSan ideologies produced from over a millennium of forager-herder-farmer interactions. This view completes the metaphoric relation of ferocious feminine protectionism (rhinoceros) with intrusive masculine peremptory (carnivore). Furthermore, to 'reign' over their territory, rhinoceroses routinely return to favourite resting and feeding spots. Yet in the story, *neighbourhood* is blended with *personhood* to denote a 'return' that is not only to a spatial locale but is also a social category. With her young nursing daughter, the she-rhinoceros displays maternal concern through her persistent 'return' to protect the elder daughter, who by now ought to be autonomous.

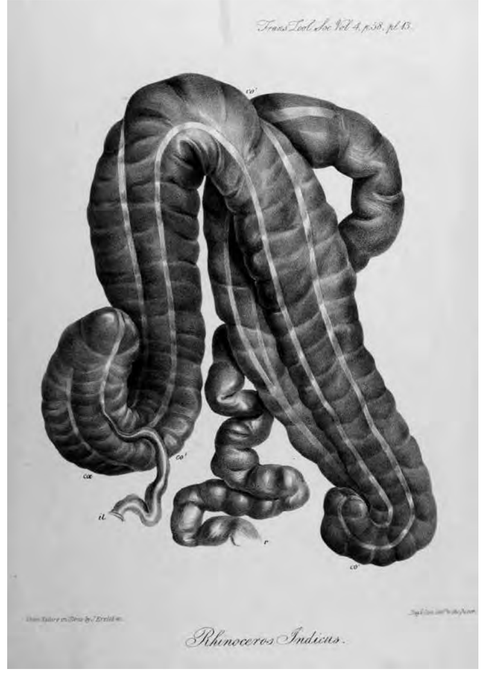
Overall, the incidence of rhinoceroses in only a few |xam stories is a noteworthy inversion of their obvious prevalence in rock art, especially the engravings of the |xam's Karoo homeland. This paucity in folklore does not, however, render rhinoceroses any less important than the more commonly featured animals, such as springboks, ostriches and others. Though the |xam symbolism of proper parenthood predicated on the purposeful ferocity of female protectionism may at first seem to be an outlier, it is a central KhoeSan social metaphor. This metaphor rests on the liminal pliability and strength of the horns of rhinoceroses as organs of defence that occur on both males and females. They are compounded into a single feminine category embodying the *mater familias* as a force binding together social groups in San social worldview.

[1] Gargioni 2024
[2] Chauvet et al. 1996
[3] Rifkin et al. 2015
[4] Bleek 1956
[5] |han≠kass'o 1878
[6] Boeyens & van der Ryst 2014
[7] Ouzman 1996
[8] Bleek 1956
[9] Berglund 1972: 149
[10] Kuper 1973: 621

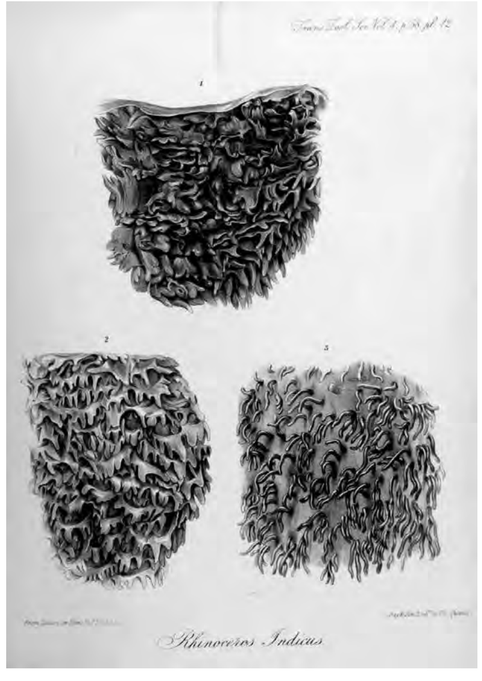
Photograph: Fritha Lan



Exhibition detail. Intestines based on Owen's rhinoceros dissection of 1849.
Photograph: Fritha Langerman



Anatomical drawings of an Indian rhinoceros. From Richard Owen, 1852. 'On the anatomy of the Indian rhinoceros' (*Rh unicornis*, L.). The caecum, colon and the beginning of the rectum.
Transactions of the Zoological Society of London



Portion of the inner surface of the beginning of the jejunum, at the end of the jejunum, near the end of the ileum.
Transactions of the Zoological Society of London

Photograph: Fritha Langerman

THE RHINOCEROS COMES TO EUROPE

Kathleen Coleman

As Rome's influence spread throughout the Mediterranean, the Romans came into contact with exotic flora and fauna. From the cherry trees of Pontus on the north coast of Turkey to the crocodiles of the Nile, they brought examples back to Rome to display as prized imports. The generals and statesmen of the late republic competed fiercely in the acquisition of such plants and animals. The plants took root on their estates and in the courtyards of the public buildings they sponsored; the animals were displayed at public venues and hunted in violent spectacles, but apart from elephants there is no evidence that they were bred in Italy. Elephants are the one exotic species known to have been reared in an imperial gamepark a few kilometres from Rome.

The rhinoceros, with its massive body, folded skin and distinctive horn on the tip of its nose, was one of the most impressive beasts known to the Romans. The Greeks encountered it first. The Roman name for it, which is ours, too, is transliterated from Greek: *rhinoceros* means 'nose horn'. One of the Greek rulers of Egypt, Ptolemy Philadelphus, displayed a rhinoceros in his grand procession in Alexandria in the early third century BCE, and a pig-like animal with two horns – one enormous, the other merely vestigial – is drawn on the wall of a roughly contemporary Hellenistic tomb at Tel Maresha, about 33 miles south-west of Jerusalem, and labelled 'rhinoceros' in Greek. Because the second horn of both of the African species, the white and the black, can sometimes be a mere excrescence, as is the case with the rhinoceros at Maresha, the Romans and their Greek predecessors seem sometimes to have confused the two-horned African rhinoceros with the other species known to them – the single-horned Indian rhinoceros. The native habitat of the other two Asian rhinoceroses, the Sumatran and the Javan, was too distant for the Romans to have encountered them.

The first rhinoceros to be displayed at Rome was one of the starring attractions at the opening of Rome's first permanent theatre, built by the Roman general and politician Pompey in 55 BCE. Alongside the display of this exotic beast, Pompey also showed off his capacity to import exotic plants by building a portico behind his theatre and planting plane trees and other exotica in the courtyard. Ten years later, Pompey's arrival, Julius Caesar, gained comparable kudos by displaying Rome's first giraffe. Caesar's heir, Octavian (later to become the emperor Augustus), defeated Mark Antony and his consort, the Egyptian queen Cleopatra, at the battle of Actium in 31 BCE. At his formal triumph to celebrate this victory, he displayed a rhinoceros and a hippopotamus, two species appropriately associated with the African continent. A victory over a ruler meant the acquisition of his (or her) territory; the territory could not be moved to Italy, but its characteristic products could.

The Romans and the tribes who helped them to import rhinoceroses could probably have fed them an adequate diet if they could have stored enough of it or guaranteed a constant supply. Both species of African rhinoceros can survive on a diet of clover or lucerne, supplemented with hay for the white rhinoceros, which is a grazer, and with grass and vegetables for the black, which is a browser. Crucially, their skin would have to be kept damp to prevent it from cracking. If an African rhinoceros captured in sub-Saharan Africa and destined for Rome had been shipped down the Nile to Alexandria, it would still have had to survive a minimum voyage of nine days to reach Italy, where it might have arrived severely debilitated.

Animals acquired for spectacles at Rome were often too weak to put on a vigorous display, a misfortune bitterly lamented by sponsors and spectators alike.

Yet the poet Martial in the late first century CE comments on the excitement generated by a rhinoceros, which, although apparently sluggish at the beginning, eventually charged a bull and tossed it into the air as though it were a ball stuffed with straw. In a second epigram, Martial describes an even more impressive spectacle, in which the attendants in the arena had almost despaired of goading the rhinoceros into action when it suddenly recovered its former aggressive spirit and tossed a series of animals with its horn, including a bear, two bullocks and possibly also a bison and an aurochs (a shaggy-haired ox); a lion, no less, fled from it in fright. The terror sown by Martial's rhinoceros has been borne out by modern observation: when it has young to defend or when water is scarce, the black rhinoceros has been known to attack lion, buffalo and even elephant.

Roman depictions of the rhinoceros on coins and in artistic media testify to a combination of acute observation and erroneous detail. A *quadrans*, worth one quarter of an *as* (the lowest denomination of the Roman currency), would have reached most people's pockets. Its capacity to disseminate an official message was therefore enormous. Putting a rhinoceros on a coin confirms the propaganda value of this curiosity. A *quadrans* minted by the Senate under Domitian (reigned

Figure 1. Rhinoceros on a bronze quadrans of Domitian (84–85 CE).
Photographs: ANS 1944.100.54620. Images courtesy of the American Numismatic Society

Figure 2. Rhinoceros (middle row, right) on a mosaic from a Roman bath beneath the former church of S. Elisabetta, now the Dipartimento di Chimica, Università degli studi di Perugia. Photograph: DAI Rome 76.1849R

81–96 CE) shows a two-horned rhinoceros advancing left with its head lowered and its tail curling over its back, which is precisely the attitude of a white rhinoceros in motion (fig. 1). On the coin, however, the animal's hindlegs have an 'elbow' like a horse, instead of being 'graviportal', straight up and down, to bear the enormous load of its body. Some fifty years later, a very similar depiction, with the head held even lower, was created in a mosaic at Perugia representing the standard mythological scene of Orpheus charming multiple species with his lyre (fig. 2).

On the Mosaic of the Great Hunt at the fourth-century villa at Piazza Armerina in central Sicily, a rhinoceros with a pointed snout – so probably a black rhinoceros – is being lassoed around its horn by one hunter and prodded with a goad by another (fig. 3). It is depicted standing in a marsh, perhaps to allude to its habit of wallowing in mud to keep its skin moist and get rid of

ticks. A jaunty rhinoceros perched on a rock in the middle of the Nile on the Palestrina Mosaic faithfully displays two horns, but the effect of zoological exactitude is belied by the fanciful details of its row of menacing teeth and its ears, which are not only fringed but also flop instead of standing upright (fig. 4). Yet this animal is definitely meant to be a rhinoceros, because it is so labelled in Greek, most likely copying the caption and, doubtless, the representation from an illustrated manual of Greek zoology.

After the Roman era, it was another thousand years before a rhinoceros was seen in Europe again. It belonged to the Indian species and was presented to the governor of the Portuguese Indies by the sultan of the Gujarat kingdom, who sent it to Lisbon as a gift for King Manuel I. Two weeks after its arrival in the spring of 1515 it had recovered sufficiently from the journey to terrorise an elephant against which it was pitted in a display in the royal courtyard. The elephant, in panic, charged through a wall, and the rhinoceros' performance generated an outburst of fandom. This impressive beast, named Ganda (or Genda), soon set sail again, destined this time for the Vatican as an offering to Pope Leo X, whose fascination with exotic animals was well known, but a shipwreck off the coast of La Spezia cheated the pope of an exotic new acquisition.

The animal lives on, however, in Dürer's immortal print, the equivalent of the epigrams, coins and mosaics that have memorialised for us the place of the rhinoceros in the spectacle culture of ancient Rome – even if Dürer's rhinoceros is less zoologically accurate, its heavily folded hide more closely resembling armour plating than skin. For each rhinoceros that entered the arena, we cannot know how many shared Ganda's fate before they reached their destination. Those that survived, however, although slow to be roused to action, earned the admiration of the spectators and their place in the history of the ancient world.

Figure 4. Detail of rhinoceros on the Nile Mosaic from Palestrina. Museo archeologico nazionale di Palestrina. Photograph: Drew E. Griffin

Figure 3. Detail of rhinoceros being captured on the mosaic of the Great Hunt in the Villa Casale at Piazza Armerina, Sicily.
Photograph: Erich Lessing / Art Resource NY, ART200328

Rhinoceros foetus skin. American Museum of Natural History Collection.
Photograph: Fritha Langerman, 2017

Ceratotherium simum cottoni. Skull in the Smithsonian Museum of Natural History.
Collected by Heller, E, 1910. Lado enclave, Uganda. Catalogue number: USNM 164596.
Photograph: Fritha Langerman

DÜRER'S INDEXICAL FANTASY: THE RHINOCEROS AND PRINTMAKING

Susan Dackerman

The story of Albrecht Dürer's portrayal of the rhinoceros is a well-worn tale.[1] Sultan Muzaffar II, ruler of Cambay (now Gujarat), presented an Indian rhinoceros as a diplomatic gift to Alfonso d'Albuquerque, governor of Portuguese India. The governor forwarded it to King Manuel I of Portugal, who maintained a menagerie at the Ribeira Palace in Lisbon, where the animal arrived on 20 May, 1515.[2] As the first rhinoceros to reach Europe since ancient times, the extraordinary beast was sent to Pope Leo X in the hopes of securing in return exclusive privileges for the Portuguese empire in India. Departing Lisbon in December, the ship carrying the rhinoceros stopped at an island near Marseille, where the king of France saw the animal. The gift-laden vessel never reached Rome, however. It sank in a storm off the coast of Italy. It was said that the rhinoceros's carcass was retrieved and stuffed and continued its journey to the Vatican, but records of its arrival and subsequent existence there are inconclusive.

As the rhinoceros was regifted across continents, accounts of its appearance travelled between European cities as well. Following a sketch and description of the animal sent to Nuremberg, Dürer produced a drawing (fig. 1.) and woodcut of the rhinoceros (fig. 2.).[3] The artist's printed depiction was, for many centuries, a model of the animal's appearance; for instance, it was appropriated by the cosmographer Sebastian Münster for his 1544 volume on the description of the world, *Cosmographia,* and by the natural historian Conrad Gessner for the entry on the rhinoceros in his 1551 zoological encyclopedia, *Historiae animalium.*[4] Nonetheless, it has also been criticised for its lack of verisimilitude, with commentators adamantly disparaging the animal's rigid and overly ornamented hide, as well as the inclusion of a dorsal horn protruding from between the beast's shoulders.[5] Erwin Panofsky's description of the rhinoceros clinches its characterisation in modern scholarship: "Dürer stylised the creature, bizarre in itself, into a combination of scales, laminae and shells, suggesting a fantastically shaped and patterned suit of armour."[6]

I propose instead that the depiction of these "unnatural" features was not a mistranslation of the original drawing, as has been claimed, but a deliberate exaggeration of characteristics intended to draw attention to, and thematise, the artist's printmaking practice. The embellishments signify the material nature of print production-blocks, plates, incising tools and paper – thereby demonstrating Dürer's complex engagement with the medium as an efficacious means of representing subjects from nature, as well as displaying his own considerable mastery of it. Structured by the contradiction between its iconic status and its lack of verisimilitude, the image embodies and enacts the pervasive tension between nascent developments in empirical investigation of subjects from nature and the emergence of artistic practices that articulate the nature of representation itself. Dürer's woodcut rhinoceros is caught between the impulse toward the faithful depiction of nature and the drive to invent artistic forms that rival it.

The number of editions and copies made of Dürer's woodcut rhinoceros attest to its representational authority. However, an enhanced impression of a 1560 copy by the Antwerp print publisher Hans Liefrinck the elder helps us infer some of Dürer's potential ambitions for his depiction of the animal (fig. 3.). Imprinted on the expanded margins of Liefrinck's copy are inked botanical specimens, all common

European plant varieties from the fern, conifer, aster and rose genera.[7] Stems and veins were inked in black, much as the key block would have been in a multi-coloured woodblock print, while the blooms were inked in red. A yellow-green wash was applied by hand to the leaves. The similarity of the colours to those used to highlight the rhinoceros suggests that the colouring of the beast and printing of the flora occurred at the same time, most likely in the sixteenth century, when the sheet was incorporated into an album of natural history subjects and architectural prints.[8]

The practice of impressing specimens was an important development in early botanical studies, as naturalists established procedures to record the results of their empirical investigations.[9] Perhaps the most renowned nature print, as the form is called, is the depiction of a sage leaf found in Leonardo da Vinci's *Codex Atlanticus*, produced sometime after 1507 (fig. 4.).[10] Inscriptions surrounding the leaf detail the plant's medicinal properties. Although Leonardo did not imprint the leaf himself (it was done by the artist Francesco Melzi), he did note alongside the image the most successful method for producing nature prints: "The paper should be painted over with candle soot tempered with thin glue, then smear the leaf thinly with white lead, in oil, as is done to the letters in printing, and then print in the ordinary way. Thus the leaf will appear shaded in the hollows and lighted on the parts in relief.[11]

This technique of inking and imprinting botanical samples was a dependable means of reproducing the plants' features, from vein structure in the leaves to the pattern of petals. The technique not only provided an incontrovertible reproduction of the specimen's appearance, it also evidenced the maker's direct engagement with nature, affirming the veracity of his representations. As the burgeoning field of natural history prized knowledge of flora and fauna garnered through observation and experience over that transmitted through canonical text, the most valued illustrations of nature also emerged from those practices. Within this newly established framework, the directness of imprinting flora onto the page was highly regarded as a means of producing, in modern parlance, an indexical image – one that has a physical relationship to the object it represents.[12]

The nature prints on the sheet with Dürer's rhinoceros speak to the early modern investment in accurate portrayals of nature arrived at through hands-on investigation.[13] But why are common European botanical specimens impressed alongside Dürer's depiction of such an exotic animal? Does the combined presentation of nature prints and woodcut rhinoceros – the flora and fauna, common and exotic, allied

Figure I. Albrecht Dürer. Rhinoceros, 1515. Pen and brown ink.
The British Museum

through shared vivifying colours – suggest a parallel gesture? Is there an implication that the woodcut of the rhinoceros is similar to the direct impression of nature taken from the plants, with both depictions the result of observation and experience? Or was their juxtaposition symbolic, meant to convey for the early modern viewer a relationship between natural history and the usefulness of printmaking for its study and representation?

Even if Dürer could have managed the unthinkable act of inking and imprinting an animal as large and ornery as a rhinoceros, the fact remains that he never saw the creature that was brought to Europe in 1515. Nonetheless, the artist presented his woodcut as a reliable representation of nature, exploiting the characteristics of the medium to make that claim. Like many woodcuts of the period depicting dubious subjects, the inscription affirms the trustworthiness of the representation through the use of the word "abconderfet", a German variation on the Latin "imago contrafacta" – a faithful copy of an absent original, often another image, and in this case the drawing upon which the woodcut was based.[14] This term is also used on Dürer's drawing of the rhinoceros, assumed to be the more faithful copy of the original sketch, carrying an inscription seemingly transcribed verbatim from a description sent from Lisbon. It reads:

> In the year 15[1]3 on 1 May was brought to our King of Portugal to Lisbon such a living animal from India called a rhinoceros. Because it is such a marvel, I had to send it to you in this representation made after it. It has the colour of a toad and is covered and well protected with thick scales, and in size it is as large as an elephant, but lower, and is the deadly enemy of the elephant. It has on the front the nose a strong sharp horn: and when this animal comes near the elephant to fight, it always first whets its horn on the stones and runs at the elephant pushing its head between his forelegs. Then it rips the elephant open where the shin is thinnest and then gores him. Therefore, the elephant fears the rhinoceros; for he always gores him whenever he meets an elephant. For he is well armed, very lively and alert. The animal is called *rhinoceros* in Greek and Latin but in India, *gomda*.[15]

Despite his claims of faithfulness to the original, in translating the drawing to the medium of woodcut Dürer made modifications to the inscription, the rhinoceros's appearance and the composition that indicate his investment in the printmaking technique, both as a means to represent nature and in his own practice as an artist. A comparison of the inscriptions on the drawing and woodcut is instructive. The amended woodcut inscription reads:

> On 1 May 1513 was brought from India to the great and powerful king Emanuel of Portugal to Lisbon such a live animal called a rhinoceros. It is represented here in its complete form. It has the colour of a specked tortoise and it is covered and well covered with thick plates. It is like an elephant in size, but lower on its legs and invulnerable. It has a sharp horn on the end of its nose which it always begins sharpening when it is near rocks. The obstinate animal is the elephant's deadly enemy. The elephant is very frightened of it as, when it encounters it, it runs with its legs down between its front legs, and gores the stomach of the elephant and throttles it, and the elephant cannot fend it off. Because the animal is so well armed, there is nothing that the elephant can do to it. It is also said that the rhinoceros is fast, lively and cunning.[16]

Several seemingly minor semantic alterations significantly shift the implications of the inscription toward a focus on Dürer's printmaking practice. A revealing adjustment is the way the animal's colour is described. The drawing's inscription claims that the rhinoceros has the "colour of a toad" (*farb wy ein krot*), whereas the woodcut's inscription describes the colouring as that of a "speckled tortoise" (*farb wie ein gespreckelte Schildtkrot*). The change in animal described to define colour is indicative of a consequential transformation in the conception of the rhinoceros's outer covering. Toads' bodies are covered with soft skin, while speckled tortoises are housed in hard, textured shells. The following line of the woodcut inscription describes the rhinoceros as "covered with thick plates" (*von dicken Schalen uberlegt*), an exterior clearly more akin to that of a tortoise than a toad. The textured hardness resonates with the materials of

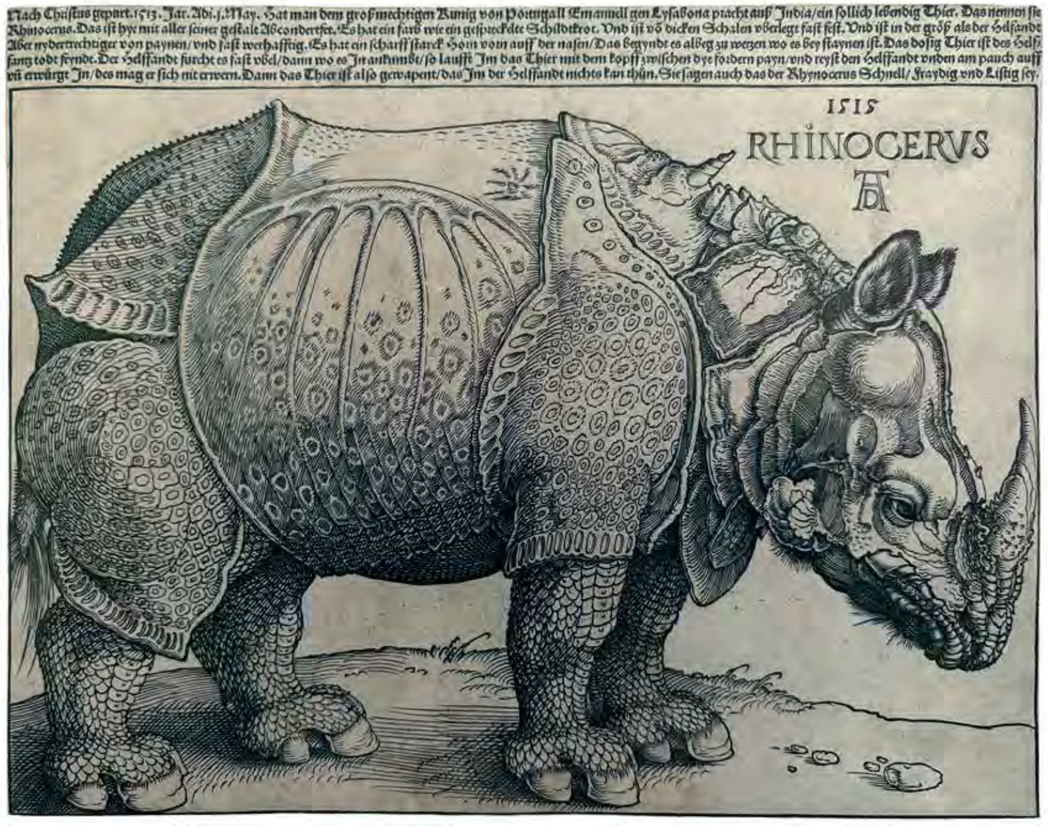


Figure 2. Albrecht Dürer. *Rhinoceros,* 1515. Woodcut and letterpress.
Museum of Fine Arts, Boston

Dürer's craft-printing plates and woodblocks. The inscription uses the German word *Schalen,* which can be translated as shells, scales or plates, which Dürer perhaps likened to the materials from which printed images emerge.[17] His added flourishes to the beast's hide – the exaggerated armour-like panels with prominent ribs, decorative scalloped edges and raised nubs, whose volume is especially visible at its rump – emphasise the hard, ornamented quality of its outer covering. These features are much more pronounced in the woodcut than in his drawing. They are also more noticeable on Dürer's woodcut than on that of his compatriot Hans Burgkmair the elder, who also depicted a rhinoceros in 1515. The posture and physical features of the animal make it likely that Burgkmair worked from a similar, if not the same, sketch and description as Dürer. Yet his depiction of the animal is remarkably different. Downplaying the rigidity of the skin and scales, Burgkmair portrays the rhinoceros with a softer, more pliable surface. His front legs shackled, Burgkmair's rhinoceros seems less majestic and more lifelike than Dürer's, which has led to claims that his portrayal is more naturalistic.[18] But rather than seeing Dürer's rhinoceros simply as a less faithful representation of nature, I think it can be understood as a meditation on printed modes of representation and the claims they make.

Consider, for instance, a recent interpretation of the rhinoceros's outer covering as a visual artifact of Dürer's father's work as a goldsmith and his own juvenile work designing armour.[19] Encased like a warrior in overlapping plates resembling crafted and embossed metal, the animal affirms the inscription's statement that it is "well armed". Thus, the rhinoceros's exaggerated exterior could imply that Dürer used his printed depiction of the animal to refer to his familial knowledge of metalwork. Similarly, the rhinoceros's outer covering can also be interpreted as an allusion to his prolific and virtuosic printmaking practice. Just as the hide is redolent of metalwork, the exaggeratedly textured surface of the animal's exterior also evokes the highly textured surface of printing plates and woodblocks, with their deeply carved incisions and sculptural raised lines. Early impressions of the woodcut, whose embossing from the block is sharply pronounced, might even suggest – however fantastically – that the print was created by rolling ink over the rhinoceros's plates and imprinting them on a sheet of paper.

Given Dürer's exceptional skills in a variety of media, his choice of woodcut technique for representing the unseen rhinoceros is telling. The artist produced from direct observation numerous ink-and-wash drawings of animal subjects, as well as two engraved portraits of horses, which are admired for their verisimilitude.[20] The rhinoceros, however, is his only depiction of a single animal in relief. Because his woodcuts are printed from the surface of woodblocks, the medium evidences the nature of the animal's skin by the embossment made in the paper when the image was printed. In early impressions, each of the rounded protuberances depicted by Dürer on the animal's exterior would have been raised from the paper's surface, producing a bumpy texture not unlike the imagined *feel* of the hide of the animal. The materiality of printmaking thus suggests a tangible, physical experience of the natural world. The immediacy of the encounter with the rhinoceros through the woodcut is akin to the immediacy of the experience of the sage leaf in the nature print from Leonardo's codex, suggesting a similar physical relationship to the represented object. Indeed, the Liefrinck copy with the impressed leaves is possible evidence of such a contemporaneous reading.

In this regard, the excessive ornamentation of the beast's skin takes on a new valence. For if its exaggeration was critical to engendering an experiential representation of nature, one seemingly based on engagement with the animal, then the embellishments to the rhinoceros's hide also point to the work of printmaking as a means to faithfully depict nature, even if deploying creative measures was necessary to produce the appearance of that "faithfulness". Leonardo also recommends artistic intervention in the production of the nature print of the sage leaf. He advises preparing the paper with candle soot and inking the leaf with white lead, essentially printing light on dark, to achieve the illusion of the three-dimensional form of the leaf through shading. Even the technique of nature printing, the most direct impression of nature, was enhanced by the artist's manipulation of the representation. Because Dürer could not directly engage with the rhinoceros, his intervention was more radical, requiring outright invention to create the illusion of firsthand knowledge of the animal.

Another oft-criticised feature of Dürer's Indian rhinoceros

is the dorsal horn. Indian rhinoceroses have a single nasal horn, as conveyed in the inscription. (Critics have speculated that Dürer may have been aware of a description of African rhinoceroses, which do have two horns, although both are on the animal's snout). Burgkmair, who copied a similar original drawing, did not include a horn on the animal's withers, which suggests that Dürer's addition of a dorsal horn was not a mistake of transcription but rather another calculated gesture.[21] The position, shape, and compositional prominence of the ancillary horn announce that the woodcut is an emblem of the artist's printmaking practice. Again, the artist has made significant alterations from his drawing to his woodcut of the rhinoceros. The title and date, centred above the animal in the earlier depiction, are positioned more provocatively in the printed depiction. The spiralled second horn is larger in the woodcut and points directly to the name of the animal and title of the work: "RHINOCEROS" printed in capital letters. Above the title is the date the woodcut was made and below it is the artist's unmistakable and authoritative monogram. The horn points to the name of the wondrous subject that Dürer fashioned in 1515, providing the viewer with a complete account of its making. Its position establishes a connection between the label "rhinoceros" and its referent, as well as between the woodcut image and its maker.[22] Dürer was the first artist to put his monogram on woodcuts; by 1515, it would have been eminently recognisable. Joseph Koerner writes that "it is useful to think of Dürer's monograms as attempts by this artist to tether his visual utterances to their origin."[23] His placement of the monogram within the constellation of the rhinoceros's horn, identifying label and the date of the woodcut's making seems to do just that – irrevocably bind the artist not only to the woodcut image but to its very process of making and, further, to align that virtuosic process of making with the sense of wonder evoked by the rhinoceros itself.

Dürer makes another telling modification to the inscription from drawing to print, eliminating the primary text's designation of the rhinoceros as an object of wonder that demands illustration. The drawing's inscription, following the original Lisbon letter, asserts "Because it is such a marvel *[Wunder]* I had to send it to you in this representation," whereas the woodcut states, "It is represented here in its complete form."[24] Why would the artist omit language that touts the spectacle of the rhinoceros? Through this seemingly trivial change, Dürer's revised statement slyly shifts attention to his own work, redirecting consideration from the marvel of the animal itself to the marvel of its represented form. This elision suggests that the woodcut as well as the animal is an object of wonder. Late in his life, Dürer described the gift of artistic skill as wondrous *(wunderlich)* in his *Vier Bücher von menschlicher Proportion*:

> One man may sketch something with his pen on half a sheet of paper in one day, or may cut it into a tiny piece of wood with his little iron, and it turns out to be better and more artistic than another's big work at which its author labours with the utmost diligence for a whole year. And this gift is wondrous. For God often gives the ability to learn and the insight to make something good to one man the like of whom nobody is found in his own days, and nobody has lived before him for a long time, and nobody comes after him very soon.[25]

Figure 4. Unknown artist. Rhinoceros, c 1550. Woodcut with hand-colouring, letterpress and impressed plants.
Published by Hans Liefrinck, Antwerp. The British Museum, 1928, 0310.98

The artist no doubt had in mind his own work, including the wondrous rhinoceros, as he penned these words.

Koerner has said that Dürer's prints are "an icon and index of himself. And this agrees with how his images came to be received, as spectacles of their maker's talent more than as depictions of the subjects they show."[26] In making the woodcut rhinoceros, Dürer deploys his skills to compensate for not having seen the animal. He does so by aligning the texture of the animal's hide with the texture he creates on the printed page, substituting the processes of invention and representation for those of observation and transcription. The rhinoceros print thus is a complicated demonstration of the tension between the growing importance of empirical investigation and Dürer's display of his own virtuosic techniques of representation, in which his skills of making are rendered equal to or better than the results of direct observation. The outcome is an iconic image that masquerades as an indexical one, an image that volleys back and forth between the marvellous and the literal, creating the oxymoronic category of the fantastical index.

Figure 3. Francesco Melzi and Leonardo da Vinci. Sage leaf printed on manuscript page of the Codex Atlanticus (after 1507).
197v. Biblioteca Ambrosia, Milan. Museum of Fine Arts, Boston

[1] See Bartrum 2002: 283–292; 'The ill-fated rhinoceros' in Bedini 1997: 111–136; and Clarke 1986.

[2] On menageries, see Pérez de Tudela and Gschwend 2007: 419–447, esp. 421–432.

[3] Dürer most likely saw a description and drawing of the animal sent from Lisbon. One such report was forwarded by Valentin Ferdinand, a Moravian printer, to his humanist acquaintances in Nuremberg. An Italian copy of this description survives in the Biblioteca Nazionale Centrale in Florence (Cod. Strozziano 20, CI-XIII 80); see Bedini 1997: 119–121. More recently, Jim Monson has proposed that Dürer may have based his drawing on an anonymous drawing now at the Vatican Library; see 'The source for the *rhinoceros*'.

[4] Ernst Gombrich discusses the representational authority of Dürer's rhinoceros in *Art and illusion*, 81–82.

[5] The criticism goes back at least as far as 1586, when Philip Galle made an engraving of another rhinoceros brought to Lisbon, the first since the Indian rhinoceros of 1515. Galle's inscription reads, "this beast is rarely seen in our region and has never been, as far as I know, correctly depicted by anyone, either in drawing or in print." (Translation by Dániel Margócsy)

[6] Panofsky 1955: 192

[7] Judy Warnement, director of the Harvard Botany Libraries, and Kanchi Gandhi, bibliographer and nomenclature specialist at the Harvard University Herbaria, identified the printed specimens as Podocarpus, Sanicula, Fern, Asteraceae and Rosaceae. I am grateful for their efforts.

[8] See Bartrum 2002: 287. The album, bequeathed to the British Museum by Sir Hans Sloane in 1753, also included a broadsheet by Jan Mollijns I, depicting an elephant exhibited in Antwerp in 1563, that has similar nature prints on its verso.

[9] Geus 2000

[10] See Karen M. Reeds on the origins of nature prints in 'Leonardo da Vinci and botanical illustration: nature prints, drawings, and woodcuts ca. 1500,' in Givens et al. 2008: 205–238. Leonardo's *Codex Atlanticus* is in the collection of the Biblioteca Ambrosiana, Milan.

[11] Ibid.: 210

[12] Rosalind E. Krauss (1985: 198) states, "As distinct from symbols, indexes establish their meaning along the axis of a physical relationship to their referent. They are the marks or traces of a particular cause, and that cause is the thing to which they refer, the object they signify." On the relationship between icon and index, see Doane 2007.

[13] Pamela H. Smith argues that in the sixteenth century the pursuit of knowledge became active – one had to observe, record and engage bodily with nature; see Smith 2004: 18. Around the same time that Hans Liefrinck's woodcut was issued, a detailed recipe for nature printing was described in Alessio Piemontese's book of secrets, first published as *Secreti del Reverendo Alessio Piemontese* (Venice, 1555) and subsequently distributed widely in Italian, French and English. Reeds "Leonardo da Vinci and botanical illustration": 218.

[14] Derived from the old German *abconterfeien*, meaning to represent or make a likeness. For more on how language derived from Imago Contrafacta came to be understood in the sixteenth century see Parshall 1993: 554–579; for the German derivations, 560–561 and n15.

[15] "*Ie[m] in 153 jor adi i may,' hat man unserm küng van portigall gen lisabona procht ein sold lebedig tir aws India das nent man Rhynocerate das hab ich dir von Wunders wegen müssen abkunterfet schicken hat ein farb wÿ ein/ krot (toad) vnd van dicken schaln überleg fast fest vnd ist in d[e]r gros als ein helffant aber nÿdrer ist des helfantz tott feint es hat for[n] auff der nasen ein starck scharff hore[n] und so dz tir an helfant Kumt mit jm zw fechten so hat es for albeg sein / hore[n] an den steinen scharhff geweszt vnd lauff dem helfant mil dem Kopff zwischen dy fordere [n] pein dan reist es den helfant auff wo er am düsten havet hat vnd erwürgt jn also der helfant fürcht jn ser übell den Rhÿnocerate dan er erwürgt jn albeg wo er den helfant aukumt dan er ist woll gewapent vnd ser freidig und behent D[a]z tir würt Rhinocero in greco et latino Indico vero gomda .*" Original inscription and translation from the British Museum website *(www.britishmuseum.org/research)*. I would like to thank Susanne Ebbinghaus for her assistance with making this translation more literal. The description of the animal's attributes and aggressive tendencies toward the elephant is derived from Book 8 of Pliny's *Natural history*.

[16] "*Nach Christus gepurt. 1513. Jar. Adi. 1. May. Hat man dem groszmechtigen Kunig von Portugall Emanuell gen Lysabona pracht ausz India/ ein sollich lebendig Thier. Das nennen sie Rhinocerus. Das ist lye mit aller seiner gestalt Abconderfet. Es hat ein farb wie ein gespreckelte Schildtkrot. Und ist von dickcn Schalen uberlegt fast fest. Und ist in der grösz als der Helfandt Aber nydertrechtiger von paynen / und fast werhafftig. Es hat ein scharff starck Horn vorn auff der nasen / Das Begyndt es albeg zu werzen wo es Bey staynen ist. Das dosig Thier ist des Helffantz todt feyndt. Der Helffandt furcht es fast ubel / dann wo es In ankumbt / so laufft Im das Thier mit dem kopff zwischen dye fordern payn / und reyst den Helffandt unden am pauch auff un erwürgt In/ des mag er sich nit erwern. Dann das Thier ist also gewapent / das Im der Helffandt nichts kan thun. Sie sagen auch das der Rhynocerus Schnell/ Fraydig und Listig sey.*" I have used Giulia Bartrum's clear translation of the inscription from *Albrecht Dürer and his Legacy* (pp. 285–86) as the basis of this translation, with some minor modifications to the language.

[17] Charles Talbot, in *Dürer in America*, 191n4, claims that *Schalen* in the plural form suggests separate pieces like scales or plates, rather than the singular *Schale*, which denotes a protective outer covering such as that on an egg, fruit, snail or turtle, or like a hide. See also Jacob and Wilhelm Grimm, *Deutsches Wörterbuch* (online vol. 14, cols. 2060-67, *http://germazope.uni-trier.de/Projects/DWB*; accessed 12/14/2010). Panofsky's description of the rhinoceros's exterior seemingly refers to *Schalen* as well: "a combination of scales, laminae, and shells"; Panofsky 1955:192. There is a seventeenth-century rhinoceros constructed of shells at Schloss Weissenstein in Pommersfelden.

[18] See for example Panofsky 1955: 192

[19] Koerner 2002: 31

[20] The artist's engraved 1496 *Monstrous sow of Landseer* is most like the rhinoceros in conception: a depiction of an exotic creature, unseen by Dürer but modelled on another image that claimed to offer an accurate portrayal based on an eyewitness account. On the engraving, its model and the legend of the pig, see Talbott 1971: 116.

[21] Perhaps the horn signifies the woodcutter's most important instrument, the sharp and pointed carving knife.

[22] In her 'Notes on the index', Krauss notes a similar strategy in Marcel Duchamp's 1918 *Tu m*: "Duchamp places a realistically painted hand at the centre of the work, a hand that is pointing, its index finger enacting the process of establishing the connection between the linguistic shifter 'this … ' and its referent"; Krauss 1985: 198–199). In the case of the rhinoceros, the horn establishes the connection between the linguistic monogram, title and date and the referent, the depicted rhinoceros.

[23] Koerner 2002: 26

[24] The inscription on a broadsheet of a giraffe printed by Hans Adam in 1559 after a drawing by Melchior Lorch conveys a similar sentiment: the giraffe "because of its wondrousness [was] sent to a good friend in Germany." See Parshall 1993: 562–563.

[25] Quoted in Smith 2004: 68. For the original passage see Dürer, *Schriftlicher Nachlass* 1: 293.

[26] Koerner 2002: 29

Susan Dackerman, 'The rhinoceros,' was first published in *Prints and the pursuit of knowledge in early modern Europe*, ed. Susan Dackerman, Cambridge, Mass.: Harvard Art Museums, 2011: 163–83.
It is republished with the kind permission of Harvard Art Museums and the author.

The narrative of Ganda, Dürer's rhino, is that King Manuel I of Portugal quickly grew disenchanted with the Indian rhino, as it failed to meet his expectations of fiercely warring with his menagerie elephants. A few months after arriving at the Ribeira Palace in Lisbon, Ganda was adorned with a golden garland of roses and carnations, along with a green velvet collar, then tethered with chains and sent as a gift to Pope Leo X in Rome. The ship was caught in a storm and sank near Marseille. Unable to escape, the rhino drowned, and the floral wreath floated to the surface of the water.

In 2016, India adopted the marigold as the national symbol of remembrance for those lost to WWI. Saffron represents the colour of sacrifice. In Hindi, *genda* is the word for marigold, and *gainda* is the word for rhino.

Exhibition detail.
Photograph: Fritha Langerman

Exhibition detail.
An engraving of an Indian rhinoceros from Conrad Gessner's *Historiae animalium*, 1551. Gessner's image is closely based on Albrecht Dürer's woodcut of 1515. Stitched into this spine are titles of books that used Dürer's image as a primary reference for the rhino.
Photograph: Fritha Langerman

Photograph: Fritha Langerman

Photograph: Fritha Langerman

BURCHELL, TEETH, RHINOCEROS

Kees Rookmaaker

William John Burchell was one of many adventurous young naturalists in the early nineteenth century who left home in search of new worlds and new animals. Arriving from St Helena, he set out from the Cape of Good Hope in 1811 and spent four years exploring the hinterlands of South Africa, largely unknown to Europeans at the time. He was especially interested in the wildlife and shipped substantial quantities of hides and bones back to England, to the admiration of his family and friends. Although in earlier centuries the rhinoceros had been seen in the vicinity of Cape Town, Burchell had to travel deep into the Eastern Cape Province before finally encountering one of these colossal animals. Here he made acquaintance with a two-horned black rhinoceros, which he would have anticipated from the descriptions of earlier travellers.

He audaciously pushed on towards the unexplored lands further to the north. Burchell bivouacked at Chué Springs, now in the Northern Province near Zeerust, in October 1812. He found not only the black rhino with the pointed lip, but also another large type of rhino with a broad upper lip. He made drawings, shot one or two of the animals and preserved some of the remains (fig. 1.). This large type was a hitherto unknown species, now called the Burchell's rhinoceros, square-lipped or white rhinoceros. It took four men to lift the skull from the ground and eight to load the remains onto his wagon. The weight proved more than he could carry, and its body was left in the field. He determined to take only the horns and some teeth back to England. This decision is somewhat surprising. Perhaps he only realised the full impact of his discovery when sorting his notes and specimens upon his return to Fulham in November 1815. Equally puzzling is that he failed to announce the existence of a new species in an English periodical but instead wrote to scientists at the natural history museum in Paris in 1817, stating that he had named the animal *Rhinoceros simus*.

The white rhinoceros is a docile animal that grazes the fields in groups. They were easy targets for the hunters, traders and explorers who ventured into their preferred habitats, in areas between what is now known as KwaZulu-Natal and Zimbabwe. Historical accounts suggest these rhinos were once plentiful in the areas with the right conditions. In the 1840s, for instance, Cornwallis Harris reported seeing 22 white rhinos within just half a mile's travel. Over a relatively short period, human exploitation appears to have been the primary reason for their demise. Only a fraction of the hunting at this time was thoroughly and honestly documented by travellers.

The popular writings of Frederick Courtney Selous, who began travelling in the African interior in the 1870s, sounded an early warning. At first rhinos were abundant, but their footprints soon became rare, and eventually they disappeared altogether. In 1893 Selous predicted that white rhinos would vanish from the face of the Earth before the end of the nineteenth century. Along with their obliteration in the field, museum directors in Europe and America were appalled to find that their collections lacked even a single complete skin or skeleton of these animals. Consequently, Sir Lionel Rothschild jumped at an opportunity to add one to his new museum in Tring, UK. He had heard that Robert Thorne Coryndon might know of a group in Mashonaland (Zimbabwe), where, despite involvement in the continuing war with the indigenous population, he could shoot two specimens.

Rare in museums, absent in zoos, disappearing in the wild. Reports soon indicated there would be fewer than twenty white rhinos remaining in their potential stronghold

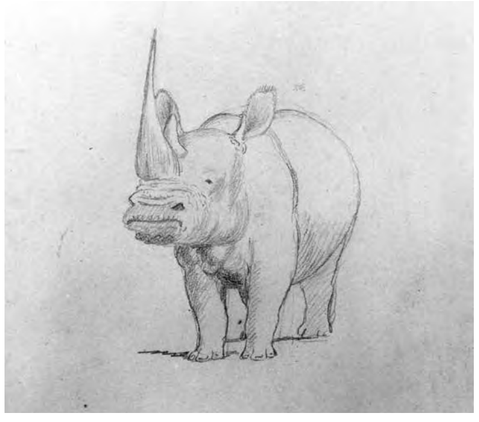


Figure 1. Drawing of the white rhinoceros of Chué Springs by William Burchell, 1812. Museum Africa, 68/1844

in the reserves of KwaZulu-Natal. (At that time the Umfolozi Reserve was still a tsetse-infected area and was rarely visited.) The low numbers were likely estimates made by concerned observers who had overlooked isolated pockets of white rhinos elsewhere in southern Africa. The actual number may have been between 100 and 200, though we will never know for sure – regardless, the situation was extremely serious. By contrast, recent estimates from Southeast Asia suggest that in 2024, there are fewer than fifty each of the Sumatran rhinoceros and the Javan rhinoceros. Maybe, like the white rhinos, they can still be salvaged for future generations, but only through major efforts requiring political commitment, dedicated research and monitoring, as well as unprecedented financial resources.

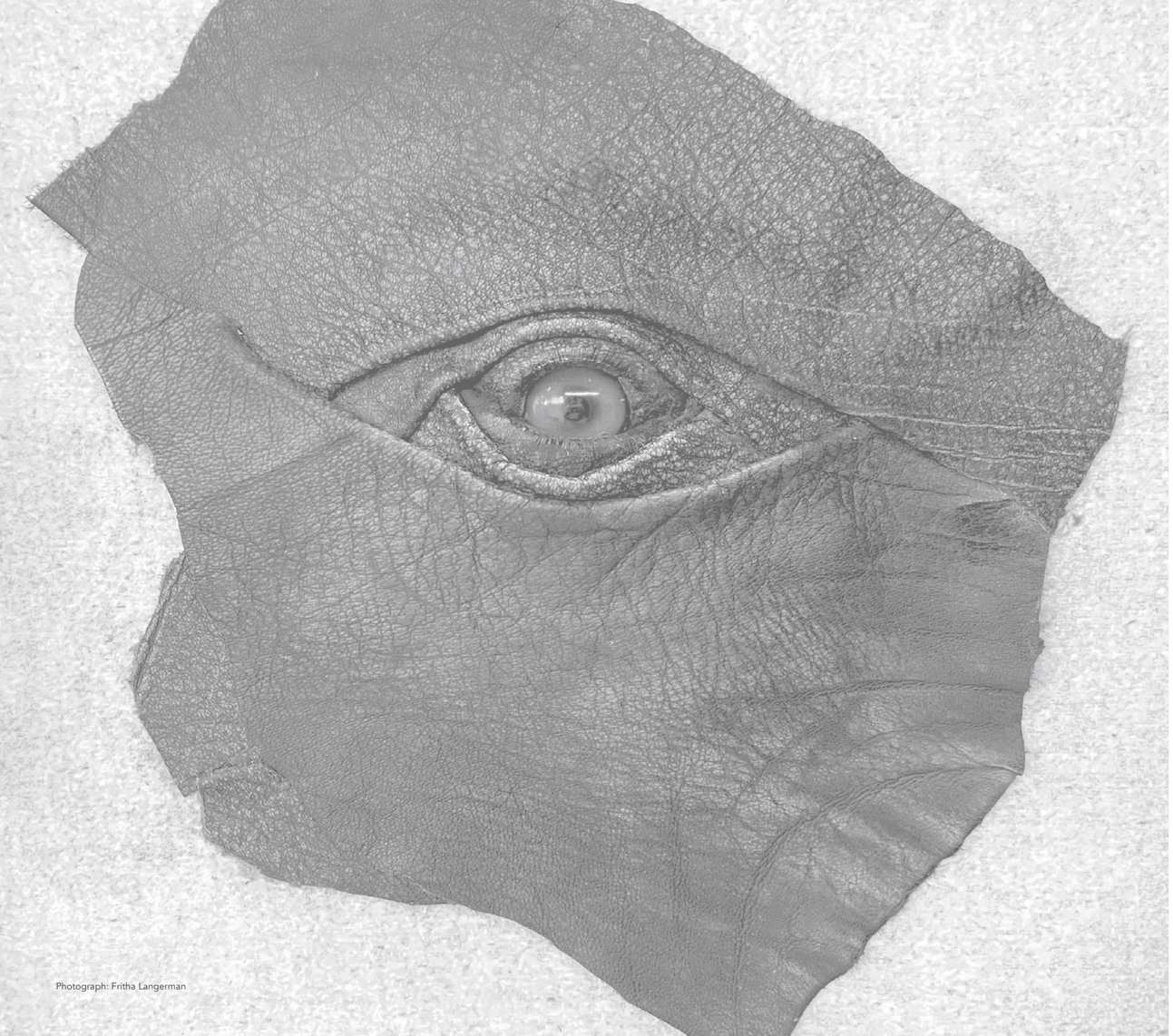
The white rhinoceros of southern Africa was rescued from extinction. Today, with its population having risen significantly, these animals are no longer endangered. This shows that effective conservation practices by dedicated organisations and people can really make a difference and achieve what was once deemed impossible. Sadly, another subspecies, the northern white rhino of Central Africa, is now deemed functionally extinct, with only two females remaining. Only innovative reproductive research and applications offer a glimmer of hope for their survival.

The white rhinoceros is now a common sight in zoological gardens and safari parks. Initially, however, these animals presented significant challenges in captivity – the first white rhino did not arrive at Pretoria Zoo until 1946. This changed in the early 1970s, when groups of over 20 rhinos were transported to Whipsnade in the UK and San Diego in the USA. These rhinos bred well when kept in large herds, and they were popular with the public due to their large size and gentle nature. The husbandry of white rhinos has been a great success, and the animals can now be seen thriving in facilities across the globe.

Burchell could never have foreseen the struggles required to preserve the white rhinoceros when he first introduced them to science. Taxonomists require a standard for each species – a type specimen. In the case of the white rhino, a right upper second molar brought home by Burchell was chosen as this reference, serving as a small yet significant reminder of an important Rhino Event. This illustrates how even a modest contribution to science or conservation can have far-reaching consequences.

Exhibition detail. 24 copies of a rhinoceros tooth based on the type specimen from the Museum of Natural History, Oxford's collection, presented in 1865 after the death of William Burchell by his sister.
Photograph: Fritha Langerman

William Burchell identified the species *Rhinoceros simus* in 1817. When describing a *Diceros bicornis* at the Cape, he used ink made from the animal's blood to write a detailed morphological description in his memorandum book.



Photograph: Fritha Langerman

A LONELY RHINO

Gijs van der Ham

In 1750, the German author Christoph Gottlieb Richter published a book with a conversation between two animals. This in itself was not very remarkable, as it was his thirtieth publication of such dialogues in which "human mistakes and vices" were discussed. What set this particular book apart was that the two debating animals were both at the forefront of public attention in Germany. One of them was a locust, representing the innumerable swarms that had devastated crops across large parts of the country. The other was a female rhinoceros from India – the only one of her kind living in continental Europe. Recently displayed in many German towns, she caused a sensation wherever she went. Nobody had ever seen a rhinoceros before.

Although the book – *Gespräch zwischen einem Nasshorn und einer Heuschrecke* – aims foremost to satirise human behaviour, it also directly references the experience of this rhinoceros. "I have to allow myself to be looked upon almost the whole day," she tells the locust, "which is a burden to me, although deep down it is also laughable." People constantly gawk at her, touch her and view her as a beast of wonder. She is considered strange, weird and, in some eyes, monstrous. Yet she returns their gaze, observing her observers; she comments on the people who comment on her. In the book, she is portrayed as a victim of human ignorance and arrogance, forced to live in an alien environment far from where she was born. But she also sees through humans who fail to truly see her.

We know a considerable amount about this Indian rhino, who was exhibited in numerous European countries for seventeen years, from 1741 until her death in 1758. She had been given a name, Clara, although this name does not appear in Richter's book, nor is it mentioned that she was a female. Her owner was the Dutchman Douwe Mout, who brought her by ship from Bengal to Holland in July 1741, when she was very young.

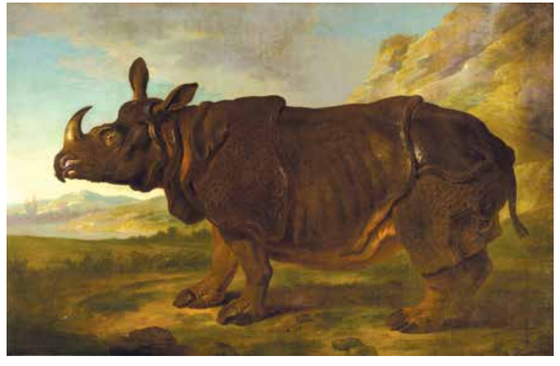
Clara had been captured as a young calf during a hunt in which her mother was killed. Shortly thereafter, an Indian prince presented her to Jan Albert Sichterman, the highest officer of the main trading post of the Dutch East India Company in Bengal. Exchanging precious objects and animals was essential to maintaining successful trading in the region. From that point on, Clara would always be surrounded by humans. Never again would she meet another rhino.

Clara was not the first rhino to be brought to Europe from India, however. A rhinoceros had arrived in Lisbon in 1515 and was depicted by Dürer in a print that became iconic. Another rhino arrived in 1581. By the summer of 1741, when Clara arrived in Amsterdam, three other rhinos had already been shipped to England. Only three years old at her time of arrival, and therefore still not fully grown, she was soon advertised in Dutch newspapers as an animal "the like of which has never been seen here before."

It was immediately clear what Douwe Mout had planned for Clara: her uniqueness was destined to make her a public spectacle. Her debut was at an inn in the village of Nieuwendam, and some weeks later she stood in a tent at the annual Amsterdam Fair. This public life defined her existence. For the next four years she was shown in towns in and around the Netherlands, always in cities accessible by boat. By the time Clara reached adulthood at seven years old, she weighed nearly 2 500 kilograms and measured over 3.5 metres in length. Douwe Mout placed her in a robust, specially constructed wooden cart that required at least eight horses to pull. Travelling at about 25 kilometres a day, he embarked on a European tour with Clara that lasted nearly thirteen years, although she occasionally

enjoyed a rest in a meadow near Amsterdam. Over the years, she became famous in Germany, Austria, Switzerland, France, Italy, Poland, Denmark and, finally, England, where her life ended in April 1758 in a tent next to The Horse and Groom Inn in Lambeth, near London.

Mout knew how to exploit her appeal, how to attract crowds. As Clara told the locust, "It is true that my boss has to pay a lot for me, but I am also very lucrative to him, because there are enough curious people who for money wish to see me." The more you paid, the closer you could get. With some extra coins, you could even touch her, as some pictures show, and feed her treats such as oranges and carrots. According to the posters that announced her arrival in town, her daily meal consisted of 30 kilograms of hay, 10 kilograms of bread and 14 buckets of water.



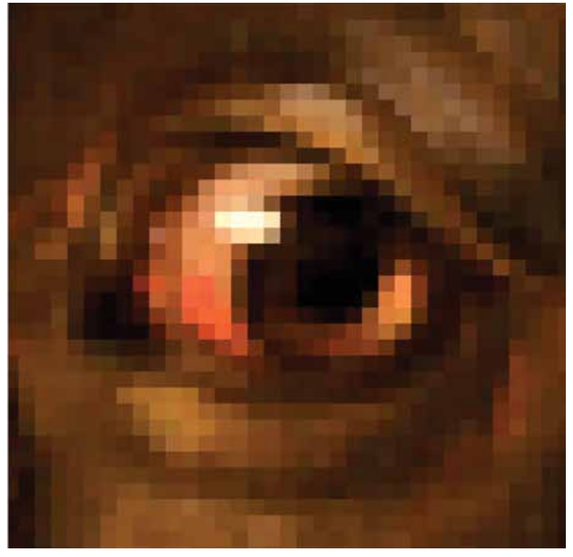
Jean-Baptiste Oudry. Clara the rhinoceros. 1749, Paris. Staatliches Museum Schwerin

Clara became a phenomenon, a must-see for everyone from common people and tradesmen to city officials and princes. Most of the time, she did nothing extraordinary; people simply watched her eat, drink, relieve herself, make noises, listen, sleep and occasionally display anger or aggression, or run and swim. King Frederick the Great of Prussia awarded Mout no less than 18 golden ducats in Berlin for the pleasure of visiting her, Empress Maria Theresia of Austria ennobled him in Vienna and King Louis XV granted him permission to exhibit Clara throughout France. Her presence alone was impressive enough to make her tour a resounding commercial success.

In her first year in the Netherlands, she was portrayed in Leiden by both Petrus Camper and Jan Wandelaar. Later artists captured her as a unique creature with distinctive characteristics in Augsburg, Venice, Copenhagen and elsewhere. Her massive form was immortalised in a life-size picture by Jean-Baptiste Oudry and in a marble statue by Pieter-Antoon Verschaffelt. Scientists, both professional and amateur, described her in detail: they measured her, examined her mouth, counted her teeth, discussed her and published their findings in Frankfurt an der Oder, Zürich, Paris and Danzig.

Europeans finally came to understand what an Indian rhinoceros really looked like, correcting the misconceptions spread by Dürer's famous but inaccurate 1515 print. From then on, Clara became *the* rhinoceros – the archetype for her species. When her image appeared on clocks, in porcelain statues or in scientific illustrations, it was no longer just Clara herself being depicted but the rhino as a universal concept. The same is true of the use of her image in groundbreaking publications such as the *Encyclopédie* by Diderot and d'Alembert and the *Histoire naturelle* by Buffon, both published in Paris in the 1760s, some years after her death.

Clara had become, in a way, immortal. Yet her own life had been lonely, unnatural and tragic. Taken from her home, she was exploited for human curiosity, entertainment and learning. And if we are to believe Christoph Gottlieb Richter, she herself understood this fate all too well.



Exhibition detail. A painting of a pixelised close-up of Clara's eye from Oudry's 1749 work.
Photograph: Fritha Langerman

Oudry's monumental painting of Clara, the Dutch rhino, the largest ever painted of this animal, presented his audience with the ultimate expression of Enlightenment empiricism. At 3 x 4,5 metres, its meticulous attention to physiology, mass, and texture reflected the era's fascination with the natural world and taxonomy. Yet, the expression in Clara's eye suggests the anxiety and fear of this travelling rhinoceros. Her story remains one of exploitation, revealing the paradox of scientific curiosity and commercial spectacle in the eighteenth century.

Exhibition detail.
A collection of luggage labels detailing Clara's travels.

- 1740 – Calcutta (departure)
- 1741 – Rotterdam
- 1741 – Amsterdam
- 1743 – Antwerp
- 1743 – Brussels
- 1744 – Hamburg
- 1746 – Hanover
- 1746 – Berlin
- 1746 – Frankfurt
- 1746 – Breslau
- 1746 – Vienna
- 1747 – Dresden
- 1747 – Leipzig
- 1747 – Mannheim
- 1747 – Strasbourg
- 1748 – Bern
- 1748 – Zurich
- 1748 – Stuttgart
- 1748 – Nuremberg
- 1748 – Mannheim
- 1748 – Würzberg
- 1748 – Leiden
- 1748 – Rheims
- 1749 – Versailles
- 1749 – Paris
- 1749 – Marseilles
- 1750 – Rome
- 1750 – Naples
- 1750 – Bologna
- 1750 – Milan
- 1751 – Venice
- 1751 – Vienna
- 1752 – Ghent
- 1752 – Lille
- 1754 – Warsaw
- 1754 – Krakow
- 1754 – Danzig
- 1754 – Breslau
- 1755 – Copenhagen
- 1758 – London (death)

Photograph: Fritha Langerman

Ronna Bloom

The night the rhinos came

The night the rhinos came we had nowhere else to look.
They were not accusatory, but trotted towards us like big dogs.
One turned her face left to show us her profile,
batted one eye at ours and fluttered there. To watch
a three-thousand-pound animal flutter is something else.

The children shrieked: He's looking at me!
For size is often male,
and scares or flatters us with its attention.
But she has nothing to do with that.
And trots away.

If this were a dance, we might bow and leave her.
But someone among us is dreaming
power, will buy a rifle,
run out and begin the killing,
is already having nightmares, planning
their illustrious future.

It's still possible to love
how small we are
in the face of her face.

Between fur and skin

In the National Gallery buffalo stood with their coats
thrown over their shoulders like ladies at a tea.
In another room camels. Came upon them unexpectedly
between paintings and ideas tied with string. Kept saying

camel, camel. Wounds
enlarged a thousand times to show the scars.
Art that plunged me into small dark rooms
with film scores and moving pictures.

But the animals were insistent. A goat smiled in a Chagall.
A million taxidermied birds posed or flew across the centuries.
And those standing buffalo, camels made of fake fur,
burlap, wire, and consciousness.

At a talk in another country, a woman begged the gathered
look out for those few creatures left
with one horn, monstrous, wrinkled, fragile,
killed by the pound for the pound.

Another said, why
should I give money to creatures I care nothing about?
And it was us talking from the bottom of our burnt-out souls
saying, who will care for us?

The question hovered
and in the room burst out a shame, a pride and baldness
pointing skyward, downward, straight ahead, behind, in all directions
silently saying, this is us, all this.

Ronna Bloom, 'The night the rhinos came' and 'Between fur and skin,' were previously published in Kovesi, C (ed) *Rhinoceros: luxury's final frontier.* 2021 and form part of the collection the forthcoming *In a riptide*, Ronna Bloom, Brick Books, 2025.

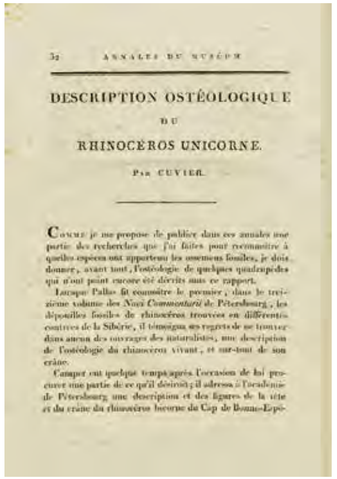
Stamps, film and photographs showing the entangled connections between the British colonies and rhinoceros.
Photograph of black rhinos in Chester Zoo, 1961: Christopher Brack

George Mottershead opened the Chester Zoo in England in 1931, the first 'zoo without bars.' In 1953 their first black female rhinoceros arrived at the zoo and died the same year. The coronation of Queen Elizabeth II was on 2 June 1953. In 1961 a stamp was issued in the British Protectorate of North Borneo that featured the Queen's head and a rhinoceros. Self-governance was granted to this region in 1963. Chester Zoo bred three calves between 'Roger,' the first rhino bred in a British zoo (Bristol), and 'Susie,' who both arrived between 1959 and 1960. In 1999 the zoo started a rhino breeding campaign that also supported animals in Tanzania and Kenya. In 1960 a stamp was issued in the British Protectorates of Uganda, Kenya and Tanzania that featured the Queen's head and a rhinoceros. These countries gained independence in 1962, 1963 and 1961 respectively.

The Versailles rhinoceros' was a gift from the French governor of West Bengal to Louis XV. He was set on board ship in December 1769 and arrived in Versailles in September 1770, where he remained for 20 years. The cost of transportation was equivalent to more than four years' salary for a ship's captain. He was studied by many, including George Cuvier, Petrus Campus and Comte de Buffon. When the monarchy fell and the Tuileries Palace was stormed in 1792, the menagerie in Versailles was destroyed as a symbol of royal tyranny. The rhino survived for another year, but its death is controversial. It is thought that he drowned in his pond, but more likely, was hacked to death by a revolutionary in 1793. The body was sent to the new natural history museum in Paris, where it was dissected by Félix Vicq d'Azyr and first director of the museum, Louis-Jean-Marie Daubenton. It was then taxidermied, with its skin stretched over an oak frame, and its skeleton preserved separately. Both the skin and skeleton remain on display at the Muséum Nationale d'Histoire Naturelle, Paris.

Exhibition detail. Wallpaper design derived from that in Marie Antoinette's bedroom chamber and reimagined with images from the French Revolution and of the Versailles rhino.

The pond at Versailles.
Photograph: Fritha Langerman, 2018



52 ANNALES DU MUSÉUM

DESCRIPTION OSTÉOLOGIQUE

DU

RHINOCÉROS UNICORNE.

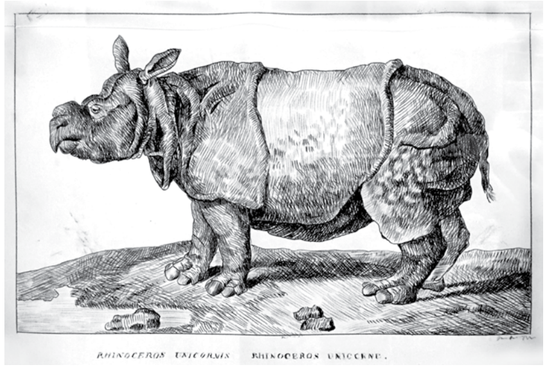
PAR CUVIER.

Comme je me propose de publier dans ces annales une partie des recherches que j'ai faites pour reconnoître à quelles espèces ont appartenu les anciennes fossiles, je dois donner, avant tout, l'ostéologie de quelques quadrupèdes qui n'ont point encore été décrits sous ce rapport.

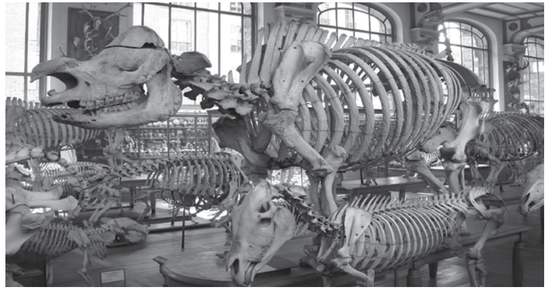
Jacques Pallas fit connoître le premier, dans le treizième volume des *Nova Commentarii* de Pétersbourg, les dépouilles fossiles de rhinocéros trouvées en différentes contrées de la Sibérie, il témoigna ses regrets de ne trouver dans aucun des ouvrages des naturalistes, une description de l'ostéologie du rhinocéros vivant, et sur-tout de son crâne.

Camper eut quelque temps après l'occasion de lui procurer une partie de ce qu'il désiroit; il adressa à l'académie de Pétersbourg une description et des figures de la tête et du crâne du rhinocéros bicorne du Cap de Bonne-Espé-

Georges Cuvier is best known for his work in comparative anatomy, but his studies also supported scientific racism. In 1810, Sara Baartman was taken from South Africa to England by Hendrik Cezar and William Dunlop, where she was exhibited as a human oddity. In 1814, she was sold in France to the animal showman Reaux and reportedly displayed half-naked in a cage, alongside a baby rhinoceros. In 1815, Cuvier requested to study her, ultimately concluding - through deeply racist prejudice - that she represented a 'link' between animals and humans. After her death later that year, he dissected her body, preserving her brain and genitals, which remained on display at the Muséum d'Histoire Naturelle and later at the Musée de l'Homme in Paris until 1974. It was not until 2002 that her remains were returned to South Africa and given a proper burial in Hankey.



RHINOCEROS UNICORNIS RHINOCEROS UNICORNE.



George Cuvier's publication from the *Annales du Museum d'Histoire Naturelle* (Paris) in which he describes the osteology of the Indian rhinoceros, 1804.

Exhibition detail. Drawing based on an engraving of the taxidermied 'Versailles rhino' by Simon-Charles Miger from a painting by Nicolas Mare´chal. Published by George Cuvier in *La Ménagerie du Muséum National d'Histoire Naturelle*, 1801.

Versailles rhinoceros skeleton on display at the Galerie de Paléontologie et d'Anatomie comparée, Paris.

Photograph: Fritha Langerman

MARCO POLO'S RHINOCEROS: COGNITIVE DISSONANCE IN 'FREIGHTED' DESCRIPTIONS OF ONE-HORNED ANIMALS

Catherine Kovesi

Fritha Langerman's multi-layered, multi-tangential *FREIGHTED*, covering 500 years of rhinoceros collection and display, begins, appropriately and suggestively, with the most influential of all rhinoceros representations, that by Albrecht Dürer from 1515. Dürer's woodcut of the Indian rhinoceros known as Ganda by its Portuguese viewers (derived from the Hindi word for rhinoceros – गैडा – pronounced *gainda*) and nicknamed Ulysses by the sailors who freighted the animal and its keeper, Ocem, from Lisbon to Goa, was, as Langerman reminds us, not drawn from life. A cautionary tale as to the dangers of regifting, Ganda was originally gifted by Muzaffar Shah II, sultan of Gujarat (r. 1511–1526), to the Portuguese governor of Goa, Alfonso de Albuquerque. Alfonso decided that such an animal would make a magnificent gift to his overlord, King Manuel I of Portugal, who in turn decided to regift Ganda to the Medici Pope, Leo X. In December 1515, tethered to the deck of a boat and adorned with a velvet collar festooned with roses and carnations, Ganda perished at sea before any detailed drawings could be made.[1] Although its carcass eventually came to shore and was apparently stuffed so that its dead body could at least be sent to the Pope, there is no record of any taxidermic rhinoceros in the papal or other collections of the period.[2] So, though Europeans now knew that a creature called rhinoceros did indeed exist, the opportunity for a detailed examination of its anatomy had been lost. Dürer had to rely on a written report and a sketch by the Lisbon-based German printer Valentin Ferdinand – with well-known anatomical consequences for his famous woodcut.[3]

But if Dürer's is the most iconic of European representations of the earliest known rhinoceros to be freighted to European shores since Roman times, someone else had provided Europeans with a detailed description of a horned animal that was almost certainly a rhinoceros over 200 years earlier, in the 1290s. The nature of this animal was instead freighted to Europe in the mind's eye and retellings of one of the most famous European travellers, Marco Polo himself.[4]

As he journeyed back from the Great Khan, Polo arrived on a south-east Asian island he called *Java la menor*, or Java Minor. This was not Java itself but rather the island of modern-day Sumatra, an island, despite Polo's diminutive adjective, substantially larger than Java. Polo noted that *Java la menor* was so far south that one could no longer see the northern constellations. We can only surmise at his imaginings as he gazed upon the southern stars, but he did provide detailed information about the local fauna. Though no original manuscript survives, in the earliest and fullest extant account of his *Le devisement du monde* (*Description of the world*), narrated to and written by Polo's fellow prisoner in Genoa, Rustichello da Pisa,[5] Polo relates that in two of the eight kingdoms of this island, those of Basma and Lanbri,[6] he encountered a very particular kind of animal, described in detail in Basma:

> [In this country] they have numerous unicorns, which are barely smaller than an elephant. They have hair like that of a buffalo; feet like those of an elephant; it has a horn in the middle of its forehead, very thick and black, and I tell you that it does not cause harm with this horn but rather with its tongue, for it has on its tongue a very long thorn, so that the harm it causes is done with the

tongue; its head is made like that of a wild boar though it carries its head bent towards the ground and remains very willingly in the middle of the mire and in the middle of the mud; it is a very ugly beast to look at. They are not at all like what we say and tell here, [our stories] that say that it lets itself be captured by a virgin; but I tell you that it is completely contrary to how we say it is.[7]

> … *ont unicornes aseç, qe ne sunt mie guieres moin qe un leofans. Il sunt dou poil dou bufal; les piés a fait come leofant; il a un cor en mi la front mout gros et noir, et voç di qe il ne fait maus ‹con cel cor mes› con sa langue, car il a sus sa langue l'espine mout longues, si qe le maus qe il fait, ‹le fait› con ‹la› langue; il a le chief fait come sengler sawajes et toutes foies porte sa teste encline ver terre e demore mout voluntieres entre le bue et entre le fang: elle est mout laide beste a veoir. Il ne sunt pas ensi come nos de ça dion et deviçon, qe dient q'ele se laise prendre a la poucelle; mes vos di qu'il est tout le contraire de celz qe nos qui dion qe il fust.*[8]

Curiously, Polo had earlier noted seeing numerous 'unicorns' together with elephants and other *bestes sawajes* on his descent into Mien (Myanmar)[9] but provided no anatomical detail of these animals and was not puzzled by any disjunct in their appearance, as he was with those in Sumatra. However, the specificity of the detail provided about the animals of Basma has led scholars and biologists alike to concur that Polo's 'unicorns' were in reality the Sumatran rhinoceros (*Dicerorhinus sumatrensis sumatrensis*) – a smaller, smooth-skinned and hairy version of its better-known African and Indian cousins that spends prolonged periods wallowing in mud.[10] The Sumatran rhino has two horns, not a uni-corn, but its posterior horn is usually no longer than a few centimetres, giving it a possible one-horned appearance to one viewing it from a distance. Though he was unable to examine the tongues of either the Sumatran or Javan species, Cave has established that tongues of the Indian and African white and black rhinos are distinguished by an intermolar eminence that is completely rigid – which, if also a likely feature of *D. sumatrensis sumatrensis*, would explain the 'thorn' described by Polo.[11]

No further detailed description of the Sumatran rhinoceros was provided for a European audience until William Bell's (1759–1792) description, sent back to Joseph Banks in 1792 with a male rhino skull from the former East India company Benteng (Fort) Marlborough in Bengkulu city.[12] Polo's thus remained the

Figure 1. Illumination from Marco Polo, *Livre des merveilles*, BNF, Fr2810, fol. 85r. 1410-1412. BNF Gallica https://gallica.bnf.fr/ark:/12148/btv1b52000858n/f175.item.

sole European description of this particular species for close to 500 years, though neither he nor his contemporary readership had any inkling that he was describing a rhinoceros. The Sumatran rhino prefers living in dense forest, far from human habitation, and its sightings, as Rookmaaker reminds us, "have always been rare, and even fewer have made their way into the literature."[13] Though Polo notes their ubiquity in Basma in his day, the Sumatran rhino is sadly now listed by the International Union for Conservation of Nature (IUCN) in 2020 as Critically Endangered, with fewer than 30 mature animals remaining in the wild[14] – although a precise number is always difficult to ascertain. In this sense, it is perhaps more aptly described, as Polo mistakenly did, as the elusive 'unicorn' of rhinoceroses.

This encounter by Polo, and its mismatch between fact and reality, fascinated Umberto Eco, who used it as an exemplar of linguistic usage and perceptual understandings when one is confronted with the unencountered.[15] Marco Polo had never heard of a rhinoceros. The only animal he knew of with four legs and a horn on its head was a unicorn, so this is therefore what it had to be – even if far removed from the romantic white creature symbolic of Christ himself, tameable only by a virgin such as Mary. Eco argued that in his attempt to force external reality to conform with his mental universe, Polo had fallen victim to his "background books". These, Eco argues, are our

> preconceived notions of the world, derived from our cultural tradition … we travel knowing in advance what we are on the verge of discovering, because past reading has told us what we are supposed to discover. In other words, the influence of these background books is such that, irrespective of what travellers discover and see, they will interpret and explain everything in terms of these books.[16]

If we take up Eco's idea, what "background books" informed Marco Polo's mind's eye such that he would see unicorns when plainly confronted with rhinoceroses? Bearing in mind that Marco Polo was about 15 when he left Venice with his father and uncle in c. 1269, and that there are few signs in his account of reading (although there are indications that he had read romances), wider community perceptions or understandings of the unicorn must be examined to enter into Polo's cognitive world. Four main authors and texts directed general understandings of unicorns, and by extension rhinoceroses, in his period: fragments from Ctesias (c. 400 BCE) as transmitted by Photius (b. c. 820 CE); Pliny the Elder's *Naturalis historia* (c. 77 CE); the *Physiologus* (100–330 CE); and Isidore of Seville's *Etymologiae* (636 CE).

According to the fragments we have from Ctesias in his History of India (*Indika/Indica)*, the animal known in Greek as a *monokerōs* and in Latin as a *unicornis* was quite startling in its colouring, having a white body, a dark red head, blueish eyes and a horn in its forehead about a cubit in length. The lower part of the horn, for about two palms distance from the forehead, was quite white, the middle black, the upper part, which terminated in a point, a very flaming red. Those who drank out of cups made from this horn were protected against convulsions, epilepsy and even poison.[17] Aelian (c. 175 – c. 235 CE) repeated this description, adding more details about the prophylaxis:

> They say the one who has tasted from this horn becomes ignorant and unburdened of incurable diseases. He is not seized by convulsion or what is called the sacred disease nor destroyed by poisons. Even if he had drunk something harmful earlier, he vomits this up and he becomes healthy.[18]

This alleged prophylactic property of unicorn horn was to be one of the most enduring beliefs, responsible in part for its great value and the desperation of European elites to acquire one. The problem was where to find one – and how to capture it once found.

Pliny gave descriptions of three kinds of animal with a single horn. The first was a one-horned rhinoceros (*rhinoceros unius in nare cornus*) brought to Ancient Rome as early as 55 BCE as part of a spectacle staged by Pompey,[19] an animal he described as the natural enemy of the elephant (and the dragon) and that would always be the victor in an encounter. In writing of the terrestrial animals of India, Pliny refers to the existence of oxen with solid hoofs and a single horn (*boves solidis ungulis, unicornes*) but then writes, more pertinently, of

> a very fierce animal called the *monoceros*, which has the head of the stag, the feet of the elephant, and the tail of the boar, while the rest of the body is like that of the horse; it makes a deep lowing noise, and has a single black horn, which projects from the middle of its forehead, two cubits in length. This animal, it is said, cannot be taken alive . (… *asperrimam autem feram monocerotem, reliquo corpore equo similem, capite cervo, pedibus elephanto, cauda apro, mugitu gravi, uno cornu nigro media fronte cubitorum duum eminente. hanc feram vivam negant capi*).[20]

This description is remarkably similar to that of Polo's Sumatran rhino.

Further details about how to capture the animal were developed in the *Physiologus*, an anonymous didactic Christian text compiled in Greek in Alexandria between 100 and 300 CE, and, in its Latin and vulgate translations, widely read across Europe in the Middle Ages. It was the *Physiologus* that first indicated the necessity of a chaste virgin in the successful capture of a unicorn, confronted with which: "He bounds forth into her lap and she warms and nourishes him into the palace of kings" (Chapter XVII). This detail was also noted by Isidore of Seville in his *Etymologiesi*, when he reiterated:

> It has such strength that it can be captured by no hunter's ability, but, as those who have written about the natures of animals claim, if a virgin girl is set before a unicorn, as the beast approaches, she may open her lap and it will lay its head there with all ferocity put aside, and thus lulled and disarmed it may be captured.[21]

This led to the association of the unicorn with Christ – nourished in the lap/womb of a virgin ready to be slayed, and the subsequent ubiquitous depictions of unicorns as white, symbolic of its purity, rather than Ctesias's multi-coloured animal. The depiction of the virgin as a bait for unicorns abounds in illuminated medieval manuscripts – so even if Polo did not see these or similar illuminations, they clearly depict a widespread understanding of the nature of the unicorn. It was this tradition that led to Polo's discombobulated moment of confusion when confronted instead with a dark, hairy, black-

Figure 2. 'The Mystic Capture of the Unicorn'. Tapestry fragments. 1500. MET, The Cloisters. CC.

horned animal that seemed to prefer wallowing in mud to nestling up to virgins.

If Europeans did not realise that in the *Devisement* they were reading about a new species of animal, they did at least now have a corrective as to the true nature of unicorns. Europeans read the accounts of Polo's journeyings avidly, with demand so great even in Polo's own lifetime that today we have approximately 150 extant manuscript copies translated into many languages, including Old French, Tuscan, Venetian and even Irish. A Dominican friar, Francesco Pipino, translated the text into Latin in 1302 (*Iter Marci Pauli Veneti*), enabling a still

wider spread of the text among learned scholars. Despite this detailed description, however, readers were simply unable to match Polo's description of a unicorn with their embedded cognitive frameworks. In a famous early fifteenth-century illuminated version of the *Devisement*, with the alternate title of *Livre des merveilles,* unicorns are still represented as being either a pale brown, horse-like creature[22] or in their full white purity,[23] (fig. 1) failing to engage with the specificity of Polo's account. By the sixteenth century, unicorn iconography, symbolism and characteristics were so well entrenched that representations in the famous tapestries now in the Musée de Cluny, Paris (c. 1500) and in the Cloisters Museum, New York (1495–1500) show a white, horse-like animal using its horn to purify waters from any poison and cosying up to a virgin before its final hunt and slaughter; (fig. 2) images that inform the western imaginary to the present day.

The persistence of belief in unicorns even after the existence of the rhinoceros had been established had curious consequences for nascent naturalists. In Edward Topsell's *The historie of foure-footed beastes* (1607), a translation and reworking of Conrad Gessner's five-volume *Historiae animalium* (1551–1558; 1587), an entry was created for the rhinoceros utilising, as Gessner had before him, Dürer's woodcut for illustrative purposes,[24] followed immediately by a separate entry for the unicorn. Rather than attempting to justify the inclusion of the mythical unicorn in his compilation, Topsell instead felt constrained to justify his inclusion of the rhinoceros, assuring his readers that it did indeed exist. As final proof, he drew their attention to the illustration:

> I would bee unwilling to write anything untrue, or uncertaine out of mine owne invention; […] as the beast is strange and never seene in our countrey, so my eye-sight cannot adde any thing to the description: therefore harken unto that which I have observed out of other writers. Lastly to put it out of all question that there is such a beast as this Rhinocerot, the picture & figure here expressed, was taken by *Gessner* from the beast alive at *Lysbon* in Portugale, before many witnesses, both Marchants and others; so that we have the Testimony both of antiquity and of the present age.[25]

Despite the animals' separate entries, Topsell's rhinoceros took on the characteristics of the ancient unicorn as his account progressed. He noted that in its capturing, a rhinoceros

> is taken by the same meanes that the *Unicorne* is taken, for it is said by *Albertus, Isidorus,* and *Alunnus*, that above all other creatures they love Virgins, and that unto them they will come be they never so wilde, and fall asleepe before them, so being asleepe they are easily taken and carried away.[26]

Gessner's and Topsell's works served only to embed the alleged properties of unicorn horns. These properties, together with the rarity of procuring a horn, established them as the most desired and expensive of items for an elite market, from Elizabeth I of England to the Habsburg emperors. The source for these horns was usually the narwhal, found in the Arctic circle and often referred to as the 'Unicorn of the Sea'. Almost two centuries after Polo's description of his unicorn, his natal city also acquired some unicorn horns, which were amongst the most valued items in the Treasury of the Basilica di San Marco. In 1488 the Treasury had a "unicorn horn" measuring 1.35 metres, constructed from three pieces of narwhal tusk and from fossilised bone. This was joined in 1512 by a substantial narwhal tusk of 2.34 metres, gifted by a Domenego di Zorzi. One of these horns was gifted in 1531 as a supreme diplomatic gesture to Süleyman the Magnificent after insistent lobbying by his grand vizier, Ibrahim Pasha[27]. The Venetian horns were displayed on the altar on the Feast Day of San Marco, the city's patron saint, and also on the Feast of the Ascension, known locally as 'La Sensa'. On these sacred days members of the city's patriciate were allowed to scrape powder from the base of these horns as protection from poison and other ills for the year ahead, until the practice had such a detrimental effect on the stability of the horns' bases that it was prohibited.

These elite consumers persisted in their beliefs and practices while simultaneously reading Polo's divergent account. Even those intimately acquainted with Polo's text were unable to disentangle themselves from its implications for understandings of the unicorn. Chief among these was the famous Italian geographer Giovanni Battista Ramusio (1485–1557), who

Figure 3. Francesco Griselini, Drawing of Giacomo Gastaldi and Giovanni Battista Ramusio's original Map of India and China, Museo Correr, Venice, Gabinetto di Cartografia, inv. Cart. 34. Detail showing a unicorn.
Photograph: Catherine Kovesi. With permission of the Fondazione Musei Civici, Venice

included his Italian translation of Polo's recount, *Dei viaggi di Messer Marco Polo*, in his odeporic collection *Navigazioni et viaggi* (1559). Ramusio and the cartographer Giacomo Gastaldi were commissioned by Doge Francesco Donà (r. 1545–1553) to provide details for four monumental maps of Venetian explorations for the walls of the Sala delle Mappa, the large hall in the Doge's Palace in which foreign dignitaries were greeted. In detailing their map of Asia, Ramusio and Gastaldi relied on Polo's accounts. As we know from a detailed drawing now in the Museo Correr in Venice, Gastaldi drew a unicorn on this map. But despite what Ramusio had read and translated, this unicorn was depicted as a rather bulky, white, four-legged creature with a prominent single horn protruding from its forehead – undeniably a standard unicorn (fig. 3).

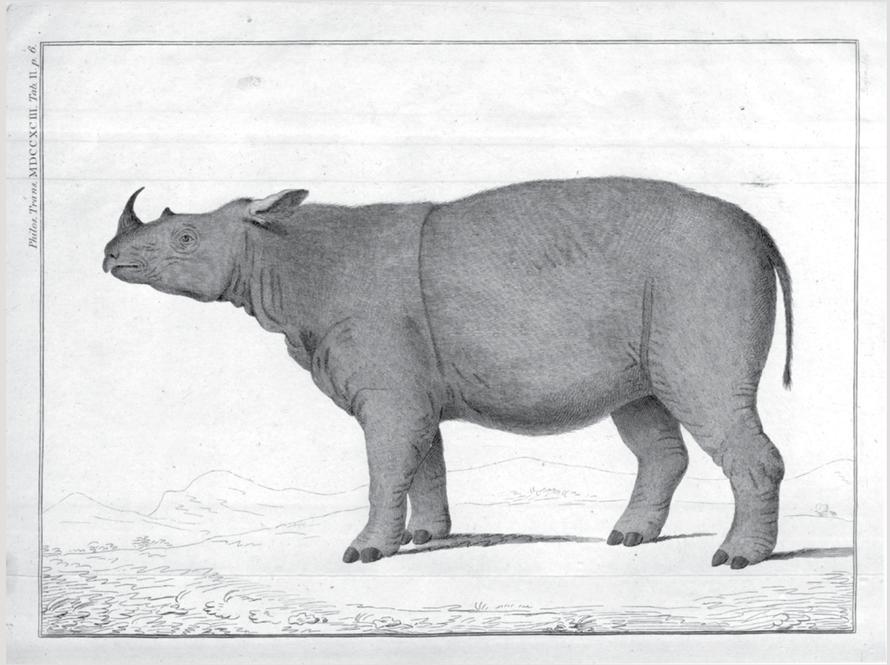
These maps were in need of restoration by the eighteenth century, and the task was entrusted in 1762 to Giustino Menescardi (1720–1776) under the direction of the great naturalist Francesco Griselini (1717–1781). Though instructed to maintain precisely what had been on the walls beforehand, a small but significant alteration was made to the original map. Where Ramusio and Gastaldi's map had depicted a unicorn, Griselini and Menescardi drew instead a perfect rendition of an Indian rhinoceros, which Hermann Walter has convincingly argued is none other than the rhinoceros Clara,[28] which famously toured Europe to wonder and amazement for 17 years from 1741 to 1758, arriving in Venice in 1751[29] (fig. 4). While for Ramusio and Gastaldi, Polo's animal was a unicorn, depicted using standard iconographical precedents, for Griselini and Menescardi there was no doubt that the unicorn described by Polo had to be a rhinoceros, and they worked to portray one as accurately as they could based on the most recent recorded encounter with such an animal in the flesh. Marco Polo's unicorn had finally become identifiably a rhinoceros – paradigm and reality had now merged.

The species merging of rhinoceroses with unicorns (and vice versa) that emerges from Polo's Sumatran encounter and its afterlife is not merely a historical curiosity but has important and often insidious consequences for attitudes to rhinoceros horn to the present day. Just as unicorn horns were the most highly prized objects for elites of late medieval and early modern Europe, today rhinoceros horn is the world's most expensive product by weight, trumping even gold and cocaine.[30] Eagerly sought after as status symbols, principally in a Vietnamese market,[31] these horns of simple keratin have been imbued with unfounded talismanic and prophylactic properties, with devastating consequences for rhinoceros populations. There is a tragic poignancy to the fact that it is Marco Polo's Sumatran unicorn that is the most endangered of all.

[1] Clarke 1986: 16–27; Kovesi 2022: 76–80
[2] De Matos 1960: 390, n. 196
[3] Clarke 1986: 16–27
[4] I am greatly indebted to the Venetian artist Gigi Bon for first alerting me to the relationship between Polo and the rhinoceros, and for her deep knowledge of the resonances of his writings (https://www.gigibonvenezia.com/sito/en/ and Kovesi 2021).
[5] The most complete manuscript of *Le divisement dou monde* is generally considered to be that in the Bibliothèque Nationale de France (BNF), MS F1116. The authoritative transcription of this manuscript with glossary is that of Eusebi and Burgio 2018.
[6] Eusebi and Burgio 2018: 187-190
[7] Translation with assistance from Véronique Duche. This is a more literal, and hence less literary, translation than those provided by others such as Henry Yule (Polo 1903/1920), but doing so enables the precise detail of the description to take centre stage.
[8] Polo and Rustichello, Chapter CLXV. Eusebi and Burgio 2018: 187–88
[9] Polo and Rustichello, Chapter CXXIII. Eusebi and Burgio 2018: 147
[10] For details see Fischer 1814; Groves 1967; Groves & Kurt 1972; Groves & Grubb 2011: 23; Rookmaaker 2024, 643 ff
[11] Cave 1977
[12] Banks & Bell 1793; Rookmaaker 2024: 652
[13] Rookmaaker 2024: 643
[14] https://www.iucnredlist.org/species/6553/18493355
[15] Eco 1997, trans 1999: 57–59; and Eco 1998: 54–55
[16] Eco 1998: 55
[17] *Indika*, 45; Ctesias 2011: 56-57
[18] Aelian: 4.52
[19] Pliny 1909: 8.29
[20] Pliny 1909: 8.31. Translation Pliny 1855
[21] Isidore of Seville 2006: 12
[22] Polo 1410–1412: fol. 59v
[23] Polo 1410–1412: fol. 85r
[24] Topsell 1607: 594–597; Kovesi 2022
[25] Topsell 1607: 596
[26] Topsell 1607: 597
[27] Sanuto 1900: Vol. 55, 178–181; Necipoğlu 1989: 405, n. 18
[28] Walter 1994
[29] Ridley 2004
[30] Biggs et al. 2013
[31] Vu et al. 2020

Figure 4. Francesco Griselini and Giustino Menescardi, Map of India and China, Doge's Palace, Venice, Sala delle Mappe. Detail showing a rhinoceros.

In 2025, fewer than fifty Sumatran rhino remain.



Description of the double horned Rhinoceros of Sumatra. by William Bell in 1793. Engraving.
Published in the Philosophical Transactions of the Royal Society of London

Sumatran rhinoceros at the American Museum of Natural History.
Photograph: Fritha Langerman, 2017.


CAPACITY: 1
CLEARANCE: 1.93M


LEIPZIG
GERMANY
October 2022- April 2023
Naturkundemuseum
Leipzig.
Lortzingstraße 3.
Leipzig
04105
NATURKUNDEMUSEUM

Peter Anderson

The Vanishing

Never swerve for the hare.
But how it appoints the dark, lighting
out for the greater night in shrubs
of headlight, dust overhauling
the sudden quiet. Nature's over.
Hare's gone and the remainder
pregnant in the hare's strange way.

Tomorrow I saw the cranes come
slogging down the irrigation rigs.
World as palimpsest, the birds
written between lines of sheep.
Nature's archive. Between
here and the sodden there, scrub
fidgeting with small birds, beetles,

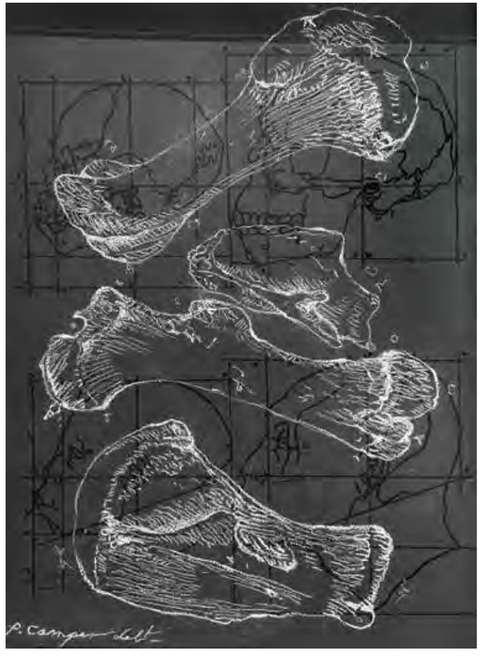
snagging the latter light. The cranes
settling in tenuous majesty
on title they precede, they stood
their ground to the flammable west,
crowned and wattled, in motley
array. It was a world war, to which
they brought an ordnance of pacific
beauty, a last resort. Nothing
to win but the point. The hands of air
ran through them, lifting
preposterous love to the light.
Foreground: a barrage of settling
scores, the last shouts of creatures, coming
cold, and going home.

Hoping for a hare and having one
found as a clef set in the staves of the road,
I waited on it. Bleeding eyes.
It looked back not in ire, but in steady
night now. Or something, and what must be
exhaustion at its own nature's
nightly resumption. And the vanishing act.

Quotidiana

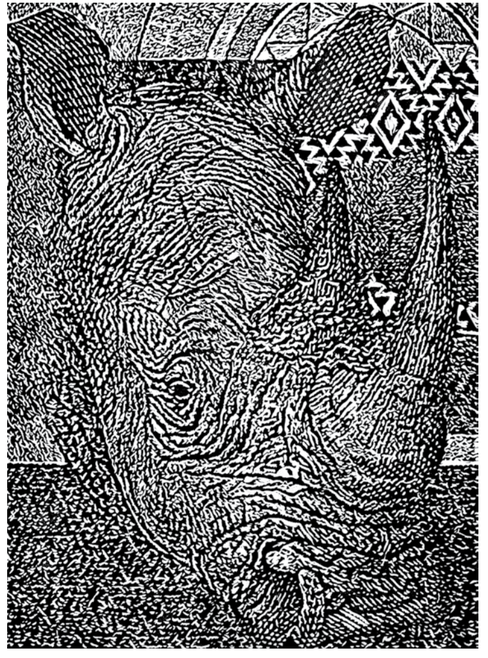
The seeds of grapes, a carton of Marlboro, spring
onions, a candle sconce, a child in the arms, river
running, the scent of petrol, a letter unopened, a
doctor's waiting room, sea coal, a Victorian bun-penny,
touchdown, rain and dust, the work of the refuse
truck, yellowed photographs, a good reading voice,
a rhinoceros, rain from a disembowelled cloud over
the bay, hay fever, the pennants of blue cranes in a
stubble land, hot bread, a tax rebate, an abdominal
ultrasound, elderflower, railway cuttings, wind in the
phone lines, the foghorn, coffee, a hoopoe at the
ruins, midday, the dissolving granite, the muezzin in
the fog, a thorn in the foot, a dead leveret, the silence
after the drive, the ash of stars, the milkwood, first
love, the eggs of a dove, making eyes in a bookstore.

Peter Camper, engraving from *Planches pour les oeuvres de P. Camper, qui ont pour objet l'histoire naturelle, la physiologie et l'anatomie comparée*, 1803.



Exhibition detail. Drawings on chalkboard based on Camper's engravings.

Petrus Camper was one of the first Enlightenment scholars to explore comparative anatomy. He is best known for his theory of prognathism, in which he proposed that facial angles, measured by drawing a line from the chin to the forehead, reflected levels of development. These early deterministic theories were used to support scientific racism in the nineteenth century. Camper also studied the Louis XV's 'Versailles rhinoceros' and in 1780 he published anatomical drawings comparing the skeleton of an Asian rhinoceros with elephant bones. Following his death in 1789, Félix Vicq-d'Azyr, who would perform the first recorded rhinoceros dissection in 1793, wrote a eulogy in his honour.



Exhibition detail. An enlarged section of a R10 denomination South African banknote from 2015, cut and printed in a relief process.

A few of the many banknotes that feature rhinoceros imagery, from India, Indonesia, Rwanda-Burundi and Tanzania.

The first paper banknote is believed to have originated in China during the seventh century. In the sixteenth century, during Albrecht Dürer's lifetime, goldsmith-bankers began to accept gold coin deposits in exchange for cash notes. In the eighteenth century, the Bank of England started to print fixed denomination notes printed off engraved copper plates. Counterfeiting was threatened by the death penalty, while today rhino poaching in Southern Africa runs the risk of 25 years imprisonment.

Photograph: Nina Liebenberg

MM 4672:2-5

Nina Liebenberg

In the National Finnish Hunting Museum, there are four objects with accession numbers MM 4672:2-5.

Their official museum record in the national archival digital database, Finna, states the following:

Title: Rhino legs; Narrow-lipped rhinoceros, Spetsnoshörning, Black Rhinoceros, *Diceros bicornis*
Manufacturer: Esa Kemppainen, 1980 – 2009
Material type: Object
Organization: Finnish Hunting Museum
Identification: MM 4672:2-5 (number)
Dimensions: Approx. 19 x 22 cm
Manufacturing: 1980-2009; Natural product + handicraft + industrial preparation (jar); rubber; plastic; stainless steel; horn material; leather
Finland, Vähikkälä
Tanzania, Lake Burigi, Karega Region
Esa Kemppainen, Manufacturer
Subjects: rhinoceroses; trophies; Tanzania; smooth-lipped rhinoceros; Ojanperä's collection; decorative items

(For the full museum entry see:
https://www.finna.fi/Record/metsastysmuseo.knp 44248?sid=4854013186).

What follows here is an attempt by a South African curator (currently doing research in Finland about plant-human relationships) to grapple with and understand her encounter with these objects. Using various curatorial strategies such as visual suggestion, analogy, metaphor and juxtaposition, she combines image, text and objects to capture the affect that this chance meeting stirred in her. Stories of avian, marine, human and botanical tragedy are woven into a curation that hints at the wider resonance of these objects.

MM 4672:2-5

Detail from the museum entry, showing only two of the four objects.

On page 34 of *To kill a mockingbird*, the young protagonist, Scout, receives this advice from her father, Atticus Finch, a lawyer:

"First of all," he [Atticus] said, "if you can learn a simple trick, Scout, you'll get along a lot better with all kinds of folks. You never really understand a person until you consider things from his point of view […] until you climb into his skin and walk around in it."

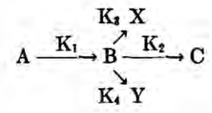
Set in the fictional town of Maycomb, Alabama, during the 1930s, the story narrates racial injustices and the loss of innocence.

A detail of an illustration by Gustave Doré (1862) for *Les Contes de Perrault*, focussing on the glass slipper being fitted by the prince on Cinderella's foot.

Glasses filled with different levels of Russian Bear vodka. When played with the triangle beater next to it, the last line of the chorus of Nancy Sinatra's *Bang bang (My baby shot me down)* (1966) can be heard:

Bang-bang, he shot me down
Bang-bang, I hit the ground
Bang-bang, that awful sound
Bang-bang, my baby shot me down

An image of the late Rebecca Horn's performance *Unicorn* (1970) sits on top of a large print of a microscopy image of the model species *Arabidopsis thaliana* wildtype plant Col-0, created by University of Helsinki plant scientist Jasmin Kemppinen. The sample is an impression of the epidermal layer, showing the plant's stoma (its breathing cells). Next to *Unicorn* is a label with the *Bang bang (My baby shot me down)* chorus and a label with an equation depicting what complications in the respiration of a plant might look like.



An equation found in one of the chapters of the 1959 publication *Plant pathology: an advanced treatise*, formulated by two scientists, Ikuzo Uritani and Takashi Akazawa. It depicts a plant struggling with respiration.

An extract from Fritha Langerman's *FREIGHTED* (Moment 79 in the display – the text below accompanies a folded army shirt, with a stitched label reading '32 Battalion'):

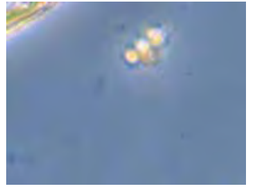
> The 32 Battalion, or "the terrible ones", was a light infantry battalion of the South African Defence Force, founded in 1975 and deployed in Angola as a counter-insurgency force to assist UNITA (National Union for the Total Independence of Angola) against Communist forces. Colonel Jan Breytenbach commanded this force. In 1997 he published his memoirs *Eden's exiles: one soldier's fight for paradise*, in which he drew attention to the trafficking and mass slaughter of elephants and rhino during the Angolan war. He writes: "Savimbi considered his fight for his version of democracy to be of greater importance than the continued existence of elephant herds and black rhinos belonging to the scarce Chobiense sub-species. He started to shoot these two species on an organised basis. The tusks and rhino horn were stockpiled at Jamba, while a means was sought to export the loot to the Far East, particularly Hong Kong."

Nina Liebenberg
1975 (Invasive species)
2018

Invasive species stems from historical and botanical enquiry.

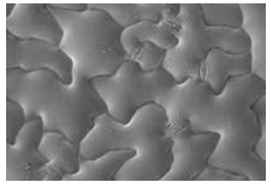
In 1975, after attaining independence from Portugal, civil war broke out in Angola. In that same year, the South African Defence Force, under the authorisation of Vorster, intervened in the war – an intervention that formed part of an ongoing period of conflict in South African history, known as the Border Wars. From a botanical point of departure, the cluster pine (or *Pinus pinaster*) is native to Portugal. In South Africa it is seen as invasive, competing with and replacing indigenous species.

1975 (Invasive species) consists of a cross section of cluster pine used as a target practice unit, into which the artist shot a ring of R4 assault rifle bullets – aiming at tree ring 1975.



Fragment of leaf margin of leafy liverwort cf. *Lophozia spp*, found on a taxidermied great spotted woodpecker in the Finnish Museum of Natural History. The image belongs to University of Helsinki researcher Niko Johansson, who researches how woodpeckers can act as dispersal vectors for fungi, plants and microorganisms.

Cryo-SEM (frozen microscopic) image of an *Arabidopsis thaliana* leaf surface captured by University of Helsinki plant scientist Marina Leal Gavarrón.



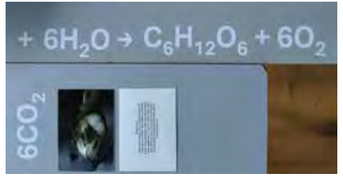
(On 18 February 2023, I disembarked from a plane that flew from Cape Town to Helsinki. The temperature was -15 degrees outside.)

Two of 101 pigeons cast in concrete by Uniarts MFA in sculpture student Sanna Nissinen. Nissinen placed these sculptures throughout the Uniarts premises as part of her larger research project that explored more-than-human relationships by focusing on pigeons and highlighting our awareness (or lack) of them. The room in which the *MM 4672:2-5* curation is set up was an old grain silo before it became the Uniarts facility. The pigeons nesting in its rafters were its only inhabitants.

An anthology of the British sculptor Rachel Whiteread, published by the Serpentine Gallery, London, opened on a page that shows her iconic work, *House* (1993).

A moment of observation in the Natural History Museum, London, 2017. The label of this display reads: "When the pyroclastic flow enveloped Pompeii, its inhabitants were buried. Ash solidified around their bodies. These eventually rotted away leaving behind human and animal-shaped holes – found by archaeologists, mining down into the earth's core, more than 1 000 years later. These casts reveal the final positions people and animals took as they tried to protect themselves."

The chemical equation for photosynthesis.



Anne Yli-Ikkelä
Buutsit
2024
Graniitti/Granite

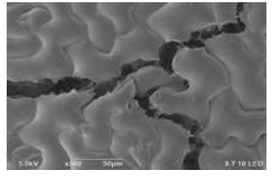
A moment of observation at the Uniarts, Helsinki, BFA exhibition, 2024.

On 7 November, 1940, the Tacoma Narrows Bridge, a suspension bridge in the US state of Washington, behaved somewhat differently to other bridges. Nicknamed Galloping Gertie after its completion, it tended to vibrate whenever a little wind blew, and it became quite a popular pastime to drive across on the days it was 'acting up'. On 7 November, a day of high winds, these vibrations took on a more dramatic appearance, however. The bridge – this monument of steel girders and tonnes of concrete and stone – started a 30-hertz transverse vibration with an amplitude of 1.5 feet, acting as if it was a mere piece of string flapping in the wind.

Side-A label of the US seven-inch, 45-RPM vinyl single release (#0432) featuring *These boots are made for walkin'* , (#HX3865) by Nancy Sinatra, placed on *1975 (Invasive species)*. In 1966 and 1967, Sinatra travelled to Vietnam to perform to the US troops. This song was adapted as their anthem and later featured in Pierre Schoendoerffer's documentary *The Anderson platoon* (1967) and again in a scene in Stanley Kubrick's *Full metal jacket* (1987). (#HX3865) by Nancy Sinatra.

An image showing Giuseppe Penone sculpting one of his *Trees* (a series of sculptures created by carving out the younger trees nestled inside older tree bark segments), accompanied by a label of an extract from Derek Jarman's *Modern nature* (1991):
The day of our death is sealed up. I do not wish to die… yet. I would love to see my garden through several summers.

Cryo-SEM (frozen microscopic) image of an *Arabidopsis thaliana* leaf, showing a tear in its surface due to a protein deficiency necessary for the proper development of the plant cell walls and their adhesion to each other. Created by University of Helsinki researcher Marina Leal Gavarrón.



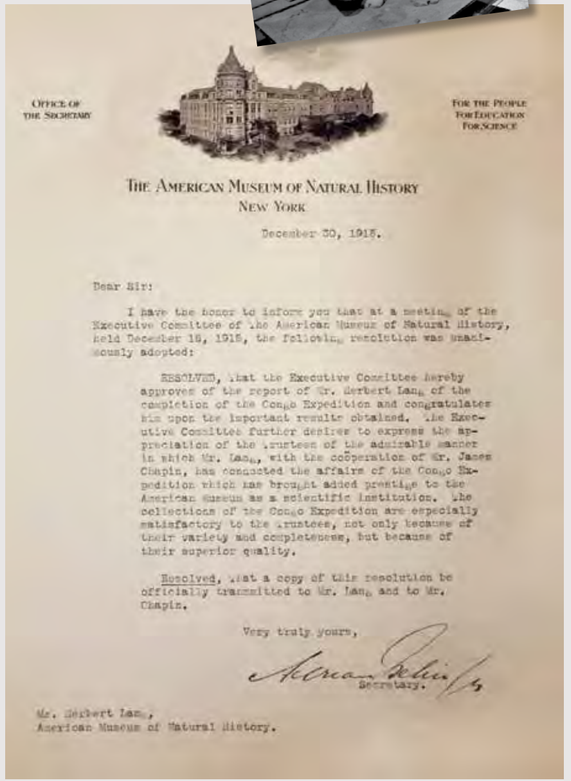
The Tacoma Narrows Bridge tearing apart on 7 November 1940. The only casualty of the disaster was a three-legged cocker spaniel named Tubby, who was left in the back seat of a lone car abandoned on the bridge.

MM 4672:2-5

Photographs:Nina Liebenberg

Photograph: Fritha Langer

Exhibition detail.



OFFICE OF THE SECRETARY

FOR THE PEOPLE
FOR EDUCATION
FOR SCIENCE

THE AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK

December 30, 1915.

Dear Sir:

I have the honor to inform you that at a meeting of the Executive Committee of the American Museum of Natural History, held December 18, 1915, the following resolution was unanimously adopted:

RESOLVED, That the Executive Committee hereby approves of the report of Mr. Herbert Lang of the completion of the Congo Expedition and congratulates him upon the important results obtained. The Executive Committee further desires to express the appreciation of the trustees of the admirable manner in which Mr. Lang, with the cooperation of Mr. James Chapin, has conducted the affairs of the Congo Expedition which has brought added prestige to the American Museum as a scientific institution. The collections of the Congo Expedition are especially satisfactory to the trustees, not only because of their variety and completeness, but because of their superior quality.

Resolved, That a copy of this resolution be officially transmitted to Mr. Lang and to Mr. Chapin.

Very truly yours,

Secretary.

Mr. Herbert Lang,
American Museum of Natural History.

Herbert Lang joined the taxidermy department at the American Museum of Natural History (AMNH) in 1903. In 1906, he accompanied game hunter Richard Tjader on an expedition to Kenya, returning with 178 mammal specimens for the museum. In 1909, he led the Congo Expedition alongside James Chapin, during which they collected 5 800 mammal specimens including the white rhinoceros (*Ceratotherium simum cottoni*), now displayed in the Carl Akeley Hall of African Mammals at the AMNH. Lang eventually settled in South Africa, working at the Transvaal Museum, now known as the Ditsong National Museum of Natural History.

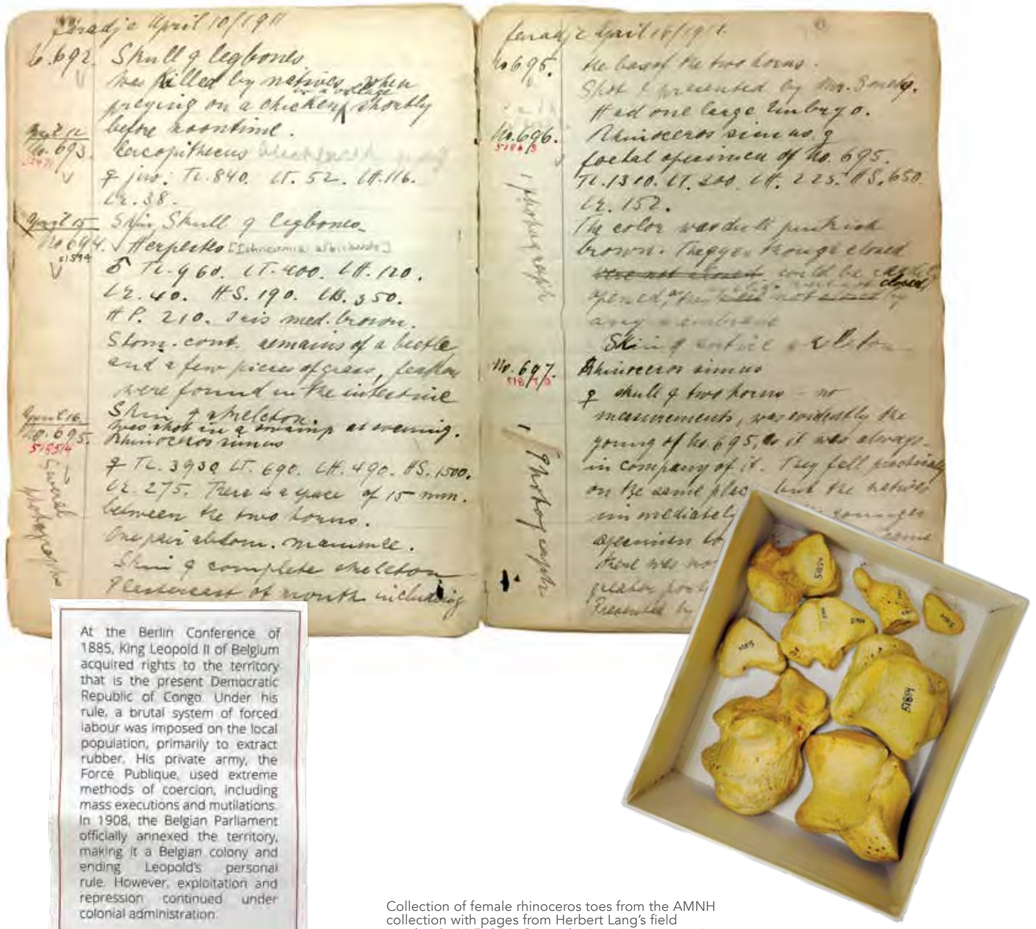
White rhinoceros, Ditsong National Museum of Natural History.

Correspondence between Herbert Lang the American Museum of Natural History in relation to the Lang-Chapin Expedition to the Congo (1909-15)

Photograph of Herbert Lang posing with the northern white rhinoceros that now occupies the AMNH diorama.
Photographs: Fritha Langerman

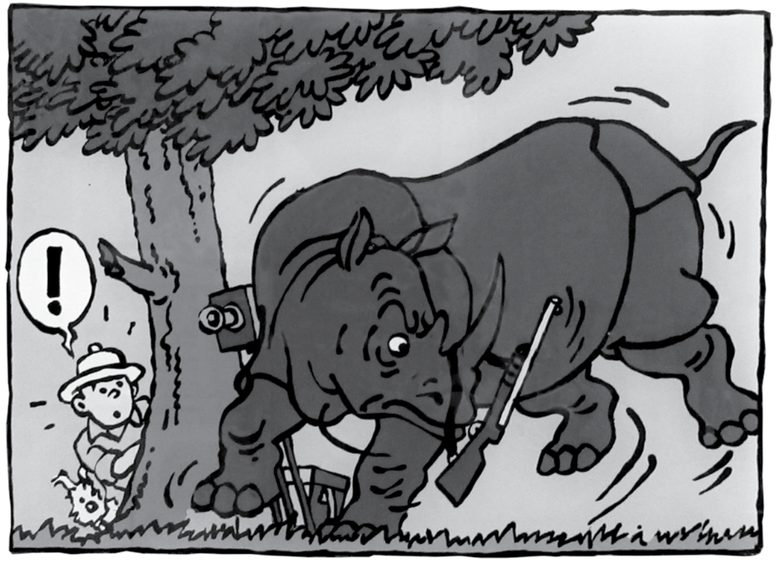
James Perry Wilson began painting the background for the white rhinoceros diorama in December 1936 and completed it seven months later. It is staged in the Upper Uele River, Congo, just below the Sudanese border. To sustain the illusion of the endless vista and prevent the rhino forms from casting shadows on the background, they were painted white on the side invisible to the viewer. The rhinoceroses, one of which was collected by Herbert Lang between 1911-15, were taxidermied by James L. Clark in 1934.

Photographs: Fritha Langerman



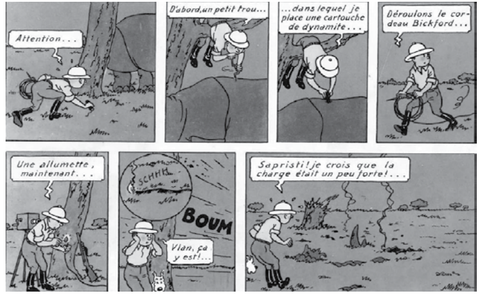
At the Berlin Conference of 1885, King Leopold II of Belgium acquired rights to the territory that is the present Democratic Republic of Congo. Under his rule, a brutal system of forced labour was imposed on the local population, primarily to extract rubber. His private army, the Force Publique, used extreme methods of coercion, including mass executions and mutilations. In 1908, the Belgian Parliament officially annexed the territory, making it a Belgian colony and ending Leopold's personal rule. However, exploitation and repression continued under colonial administration.

Collection of female rhinoceros toes from the AMNH collection with pages from Herbert Lang's field notebooks.M-51854. *Ceratotherium simum cottoni*. Collected 16 April 1911, Faradje, DRC. Photographs: Fritha Langerman

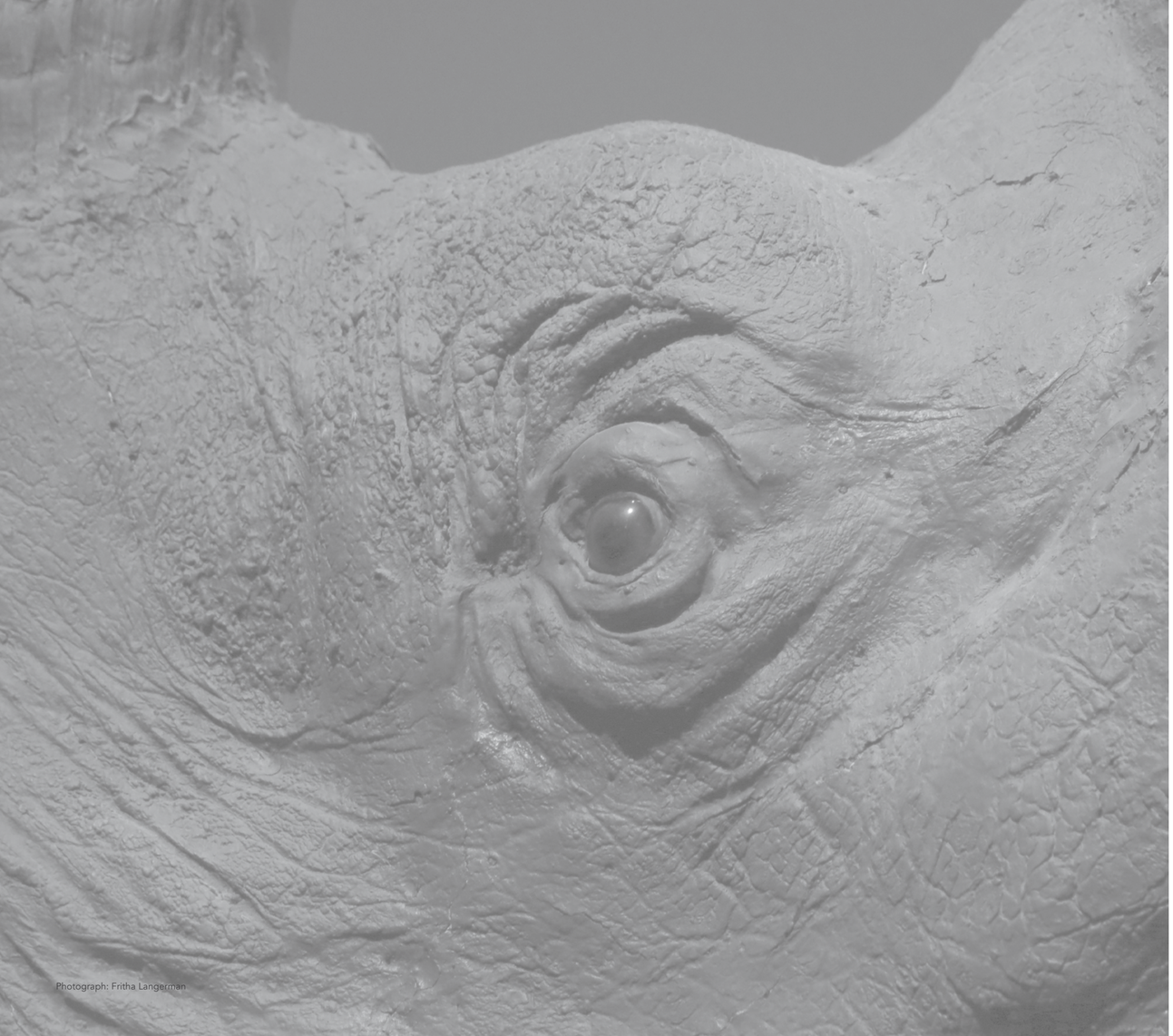


Exhibition detail. Painting on perspex of a comic frame from *Tintin in the Congo*.

Belgian cartoonist, Georges Remi, known as Hergé, first published *The Adventures of Tintin* in 1929 as a serialised comic strip for *Le Petit Vingtième*. At the suggestion of his editor, he set his second book, *Tintin in the Congo* (1930), in the Belgian Congo (now DRC) with an explicit colonial propaganda agenda: to encourage children's enthusiasm for Belgian colonial rule. While researching, he visited the Tervuren Museum's ethnographic collection of Congolese artefacts. The original comic, published in black and white, contained a violent scene where Tintin explodes a rhino with dynamite. When the book was republished in Scandinavia (1975), this scene was replaced with less graphic imagery due to public objections. The comic has since faced significant criticism for its racist depictions of the Congolese. In 2007, Bienvenu Mbutu Mondondo launched a legal case in Brussels, arguing that *Tintin in the Congo* justified colonialism and white supremacy. However, in 2012, a civil court ruled that the book would not be banned.



Exhibition details. During the South African Border War rhinos were virtually wiped out over nearly 20 years of fighting in Namibia and Angola. Thousands of elephants and rhinos were slaughtered to support the apartheid government's initiatives to destabilise neighbouring countries in the 1970s and 1980s.



Photograph: Fritha Langerman

THE AFTERLIFE: ANECDOTES OF MUSEUM RHINO FROM VICTORIAN TIMES TO PRESENT

Denise Hamerton and Bongani Ndhlovu

Biological specimens in museum natural history collections have played a fundamental role in studies of species diversity, taxonomy and, by extension, the documentation of the world's fauna and flora. They are an important component of the environmental conservation network, and the comprehensive provenance of a biological specimen adds significantly to its value. In many cases, the gathering of information continues and evolves while the specimen is held in the collection. As a result of modern techniques and advancing research, a specimen's taxonomy may be changed or updated, forming part of an international research database in addition to being used locally for display purposes. However, older specimens may become 'artefacts' attracting a 'social history' component and moving into the realm of 'Africana'. Specimens are continuously relevant and are vulnerable to a variety of threats, including theft, damage by fire and floods, social-political influences and ethical engagements often influenced by emotional opinions.

In the preceding centuries, museums received specimens from explorers and professional hunters and collectors. Many of these were donated by prominent people of the time. While modern social perceptions of these methods are diverse and debatable, the specimens' factual scientific value remains. Natural history museums are primarily charged with the care and preservation of the specimens in their collection, and the Victorian-era rhinoceros displays at the Iziko South African Museum (Cape Town, South Africa) are a case in point. In pride of place at the turn of the twentieth century the collection included mounts of a white rhino (*Ceratotherium simum*) and a black rhino (*Diceros bicornis)*. Well preserved and professionally curated, they have remained on display for 129 and 123 years respectively. The white rhinoceros was collected by Capt. Arthur Henry Eyre Mosse in June 1895 while hunting in the Mazoe District of Mashonaland, Southern Rhodesia (now Zimbabwe). The skin and skeleton were shipped via Beira, Portuguese East Africa (now Mozambique) to the well-known taxidermy company Roland Ward Limited in Piccadilly, London.

The 1896 "Report of the Trustees of the South African Museum" acknowledged with special thanks the Honourable C.J. Rhodes for the mounted skin and skeleton of an extremely v b modelled in England at his expense. This was included as a donation by Rhodes under the Zoology acquisitions section.

A few years later, the trustee report (April 1901) recorded the receipt of a mounted black rhino collected by Sir H.L. Lawley to be included in the mammal displays. This specimen is not as well documented but is similarly thought to be a Roland Ward mount.

During the night of Saturday 12 April 2008, thieves entered the Iziko South African Museum, broke the glass of the large display case door and hacked both horns off the white rhino mount. The break-in was discovered the following morning and was investigated by the South African Police Service, but the culprits were never found. Based on photographs and the records of the original horn measurements, fibreglass replicas of the missing horns were sculpted so that the specimens could remain on display. The thieves were unable to detach the horns of the black rhino specimen, but they did extensive damage to the stitched seams and skin around the base of the horns. This was repaired by Mr George Esau, the museum taxidermist, who

As the thieves left it, the broken glass of the display case and the damaged white rhino mount showing clearly where the two horns were removed. Iziko South African Museum. 13 April 2008. Photograph: Denise Hamerton

Black rhino attempted horn theft, Iziko South African Museum. 13 April 2008.
Photograph: Denise Hamerton

for fear of a repeat attempt, removed the horns and replaced them with fibreglass copies moulded from the originals.

It was suspected that the horns were destined for the Asian market to be used for medicinal purposes. Several other museums in South Africa were targeted around the same time, as were natural history museums in Europe. For a short period, museums appeared an easier source of rhino horn than poaching live animals. It is widely acknowledged that the international trade in illegal rhino horn is highly lucrative. The Wildlife Justice Commission quotes the current average value at $8 683/kg, prompting museums to install expensive security systems or, at the very least, to remove all genuine rhino horn from displays. An interesting aside is that many taxidermists from the Victorian period used arsenic soap and other potent poisons to protect the mounts from insect infestations. From 1940 until the early 1960s dichlorodiphenyltrichloroethane (DDT) was used and regularly applied to the rhino horns. Given that DDT is highly toxic, ingesting the powdered horn poses a serious health risk.

While taxidermy mounts attempt to replicate the size and shape of the living animal, both Iziko rhino specimens were 'over-stuffed'. This seems to have been a common error when several other large mammal mounts from this period are viewed. The cause appears to be that the natural creases and folds in the tanned skins were filled with stuffing when the skins were fitted over their armature or mannequin, effectively increasing the animals' size beyond their natural dimensions. It is not possible to determine whether this was a consequence of taxidermists' lack of familiarity with the animal's natural form, the lack of accurate images at the time for reference purposes or a desire to make the 'trophy' appear bigger to gratify clients' wishes.

The colonial era saw widespread global exploration, with many European collectors travelling to other continents in search of resources and curiosities. Many specimens were destined for display in the private 'cabinets of curiosities' of royalty and aristocracy. These 'cabinets' eventually evolved into public museums, a source of national pride. Today museums play a far more complex and pivotal role in understanding evolutionary history, impacts of climate and habitat modification on species distribution, extinctions and anthropogenic influences on the natural world. They serve as invaluable repositories of genetic material (extractable from preserved skins and skeletal material) that allow advances extending from temporal glimpses of past distributions to an improved understanding of the molecular mechanisms underlying morphological and physiological species adaptation. In short, they have evolved into unique opportunities for interdisciplinary research and educational initiatives, enabling the integration of science and discovery. They are increasingly leveraged and challenged to expand their impact and relevance for present and future societal needs.

In 2025 the Iziko South African Museum will celebrate its 200th anniversary, the oldest public South African museum and one of the oldest museums in the southern hemisphere. It is today an institution that promotes scientific research in several fields of biology and emphasises public education through imaginative displays. Moreover, as part of its role in the international network of museums, its archived specimens (and their associated data) contribute to scientific progress that will inform many answers in the future. In fact, one could argue that "the importance of preserving biological specimens [is] so that they can be reanalysed as [diagnostic] tools improve over time."[1]

[1] Marris 2024

The museum taxidermist, Mr George Esau, sculpting the replacement horns on the white rhino. The horns were then painted to resemble the originals.
Photograph: Denise Hamerton

Exhibition detail. Excrement from five different rhino species, labelled with five significant zoo specimens.

Pretoria Zoo 1946 – *Cerotherium simum*
The first white rhinoceros shown in captivity. "Zulana" from the Umfolozi Game Reserve was born on 23 July 1946.

London Docks 1872 – *Dicerorhinus sumatrensis*
The first Sumatran rhinoceros born in captivity – aboard a vessel in London docks that had arrived from Singapore. Officials from London Zoo examined the baby, but it died 12 days later.

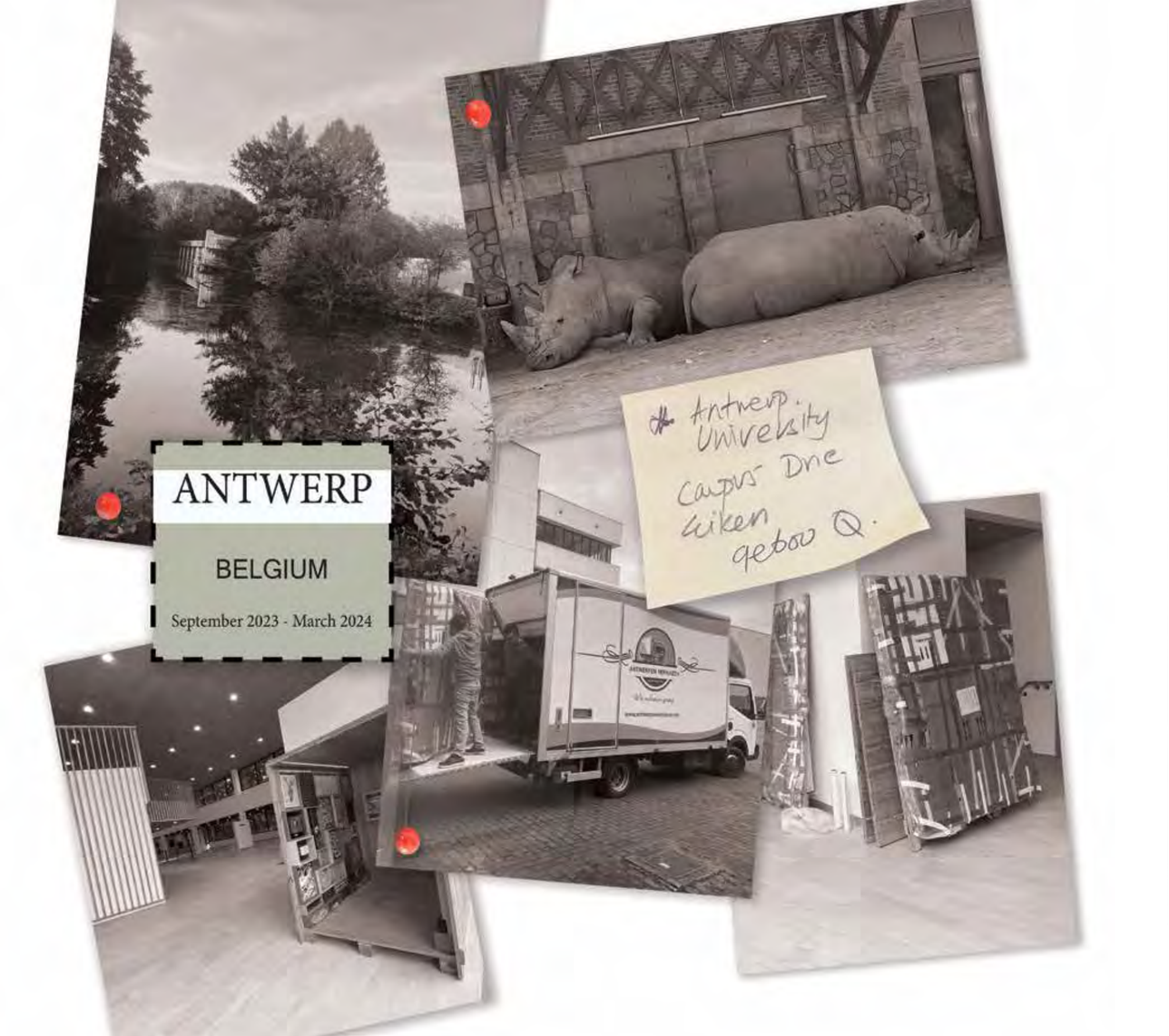
London Zoo 1868 – *Diceros bicornis*
The first black rhinoceros in captivity arrived at the London Zoo in 1868 from Sudan.

Ribeira Palace 1515 – *Rhinoceros unicornis*
The first Indian rhinoceros in captivity since 250 AD arrived at the menagerie of King Manuel I of Portugal.

Adelaide Zoo 1907 – *Rhinoceros sondaicus*
The last Javanese rhinoceros in captivity died after 20 years at the Adelaide Zoo.

Exhibition details. Reproduction of a section of the *Ceratotherium simum* specimen donated by Cecil John Rhodes to the South African Museum in 1895. The horn was stolen in 2008.

Photographs of the 'Dead zoo gang' or 'Rathkeale rovers' in stool sample vials. This fourteen-member Irish organized crime group was convicted in 2016 for attempting to steal rhino horns and valuable Chinese artifacts worth up to £57 million. These thefts targeted natural history museums, taxidermy shops, and auction houses across Europe.


ANTWERP
BELGIUM
September 2023 - March 2024
Antwerp University Campus Drie Eiken gebouw Q.


FRAGILE
msc

Photograph: Fritha Langerman

Dioramas, invented by Louis Daguerre in 1822 and popularised in the early nineteenth century, were initially theatrical devices that relied on the complex manipulation of light to transform a constructed landscape. The allure of this device lay in its ability to seduce and deceive the viewer into believing the veracity of the observed scene. The parallel development of the diorama and photography is evident in early diorama construction, which adopted various depths of field and singular viewpoints. More recent dioramas employ tilted perspective and an infinity curve with the inclusion of real objects to present the illusion of recessive space. While the diorama's popularity as a purely theatrical device was short-lived, it found new life in natural history museums toward the end of the 19th century. Carl Akeley, best known for his contribution to the American Museum of Natural History, New York, is credited with the first habitat diorama at the Milwaukee Public Museum in 1890. The Akeley Hall of African Mammals opened at the American Museum of Natural History ten years after his death in the Congo, where he is buried.

AVERAGE MEASUREMENTS
Heart: 10kg
Height: 1,3 – 1,9 m
Length: 2,8 – 4 m
Mass: 800 – 2300 kg
Brain size: 400–600 g
Skin thickness: up to 5cm
Crate Sizes:
Black rhino: 271 cm x 191 cm
White rhino: 475 cm x 221 cm
Indian rhino: 335 cm x 201 cm

The white rhinoceros diorama at the American Museum of Natural History, New York.
Photograph: Fritha Langerman, 2017

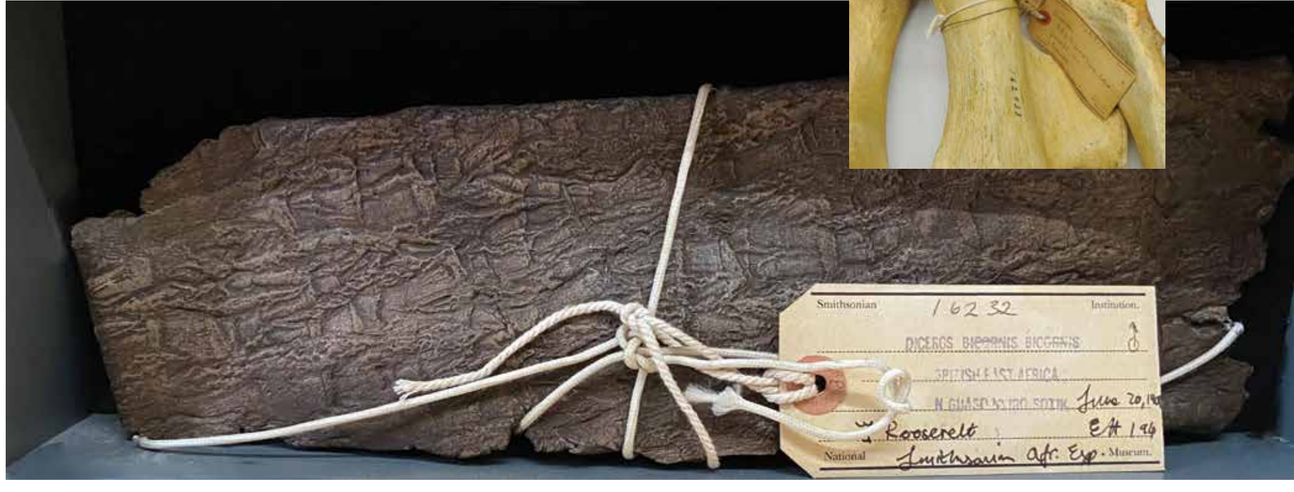
$60,000/kg: rhino horn : $66,000 – 90 000: white rhino hunt : $350,000: black rhino hunt : $8,500: 'vita-dart' white rhino hunt

Exhibition details. Theodore Roosevelt and his son Kermit brought three Winchester Model 1895 rifles with them to the Roosevelt-Smithsonian Expedition of 1909. This, together with the .405 Winchester cartridge, became the weapon of choice among American hunters of the time.

White rhinoceros tail, Field Museum, Chicago.
Photograph: Fritha Langerman, 2017

It was about eleven o'clock. As the bull rose Kermit gave him a fatal shot with his beloved Winchester. He galloped full speed toward us, not charging, but in a mad panic of terror and bewilderment; and with a bullet from the Holland I brought him down in his tracks only a few yards away. The cow went off at a gallop. The calf, a big creature, half grown, hung about for some time, and came up quite close, but was finally frightened away by shouting and hand-clapping.

Theodore Roosevelt. African game trails. 1910.



Exhibition detail. Photograph: Fritha Langerman, 2017

Photograph: Cesar Garcia, 2018

LISBON MUSEUM'S TAXIDERMY RHINOCEROS: 'MODERN' CHALLENGES FOR DISPLAY AND PRESERVATION

Catarina Teixeira and David Waterhouse

Over the last two decades, several specimens of taxidermied rhinoceros, preserved in museums all over the world, have been either damaged or stolen due to the high market value of their original horns. This has raised many concerns in natural history and science museums, zoos, professional associations and societies in general. Some museums have replaced the original horns of their specimens with replicas, others have removed their specimens from public display altogether, creating additional storage constraints.

In the autumn of 2016, an interdisciplinary team of the National Museum of Natural History and Science of the University of Lisbon (MUHNAC) safely removed the original horns of a complete, mounted black rhinoceros (*Diceros bicornis)* specimen. This procedure was well detailed in a specialised paper.[1] The decision-making process involved MUHNAC's directors, curators, conservators and taxidermists.

Sound research had been previously conducted into heritage and ethical conservation standards and best practices adopted in similar cases by other museums, having at the time Norfolk Museums Service's experience for reference. Data from historical and archival research proved to be paramount for the decision-making process. Archival research was particularly important for better understanding the inner construction of the taxidermy mount, and the urgent deadline caused by an increased demand to exhibit the specimen and increasing security concerns offered no time to create X-ray images.
This specimen – a full taxidermied mount of a female black rhinoceros – is, as far as we know, the only specimen of its type and size preserved in a Portuguese public collection. Currently part of the MUHNAC collections, its history goes back to the former Portuguese colonies and collection-building practices of the mid-20th century. Provenance research has revealed that this specimen and her offspring were probably hunted in Angola in 1954, near the Luengue river in the Cuando-Cubango region by Joséf J. Fenyövi (1891–?), with the purpose of being "offered […] to the Portuguese Government to be part of the [future] Overseas Museum."[2] When the specimens arrived in Portugal, they were delivered to the Overseas Agriculture Museum and Garden (JMAU) in January 1957.[3] Both specimens retain their original labels and inscriptions from Rowland Ward Ltd, an established taxidermy company founded in England in 1870,[4] confirmed by the primary sources analysed in the historical archives.

Increasing demand for the adult specimen to be exhibited in temporary exhibitions at Portuguese museums, along with MUHNAC's intention of displaying it in a more permanent exhibition, raised a variety of concerns over the last two decades, from the security of the specimen itself to the safety of the museum staff and public in general. After 2011, rhino horn in Portuguese museums (and many of their counterparts in Europe and beyond) was targeted in a wave of violent international robberies. Museums were advised to consider replacing the original horns of their taxidermy mounts with replicas with the help of professional conservators.[5]

Removing horn from a mounted taxidermy specimen is not without its risks, however. There is a very real danger of damaging the specimen and losing material during the procedure. Among the MUHNAC team's concerns was

understanding the materials and techniques best suited to model and install the replica horns (given that the internal structure was unknown and might vary significantly depending on the manufacturer). Furthermore, the idea of removing original parts from a 'cultural object' of scientific relevance seemed contradictory to the ethics and fundamental principles of conservation, as well as being against everything a museum represents and does.

Historical research using literature about Rowland Ward Ltd provided important clues about the mounting process:[6]

> Very large specimens would have a hollow torso, built like a barrel around the centre board, with wood wool bound over the top […] cover it with strips of sacking ("scrim") dipped in plaster of Paris. When this was dry, papier maché would be added to create a malleable layer, allowing the skin to be manipulated from the outside to create folds and natural cavities.[7]

Photograph: Cesar Garcia, 2018

Having decided to replace the *Diceros bicornis* specimen's horns, several conservation guidelines were established. The intervention had to ensure the smallest possible risk of damage to the specimen and follow strict conservation standards (minimal intervention, full reversibility and perceptibility). The intervention was done step-by-step, allowing close monitoring and full evaluation of each phase. Work was performed discreetly, with safety and security measures in place to guarantee the team's protection (including from the possibility of hazardous material within the specimen's mount).

The process was fully documented at every phase. All removed fragments (including the original horns) were safely stored. The intervention was performed by the MUHNAC team of conservators and taxidermists[8] and was completed in exactly three months. First, the two horns were removed using different mechanical tools and equipment over three long, hard days. An adhesive mortar layer between the skin and the base of the horns was particularly hard to remove, as it was very strong, as were the thick nails attaching the original horns to the specimen's inner wooden mannequin. Mortar samples were collected for informal analysis through nuclear analytical techniques for compositional characterisation. The results of this analysis indicate the presence of *plaster of Paris* and *papier mâché, as* described by Morris and Ward.[9]

The horn replicas were made by first creating a mould around their surface, using silicone and polyester resin and then fibreglass. An acrylic polymer, water-based mineral resin and sculpting clay were used for the cast. The word 'Replica' was also cast and attached to each side of the new horns as a caution to would-be thieves. A variety of brushes were used to apply acrylic dyes for the colouration process, and an airbrush was used for the finer details. One of the final steps was to attach the replica horns to the specimen in their original position, using a ring of several layers of sculping putty.

Following their mission of cultural heritage study and preservation for future generations (and particularly in making them more accessible for broader audiences), museums frequently encounter complex issues as a response to modern social problems and cultural challenges, as evidenced in the case of the Lisbon Museum taxidermied rhinoceros.

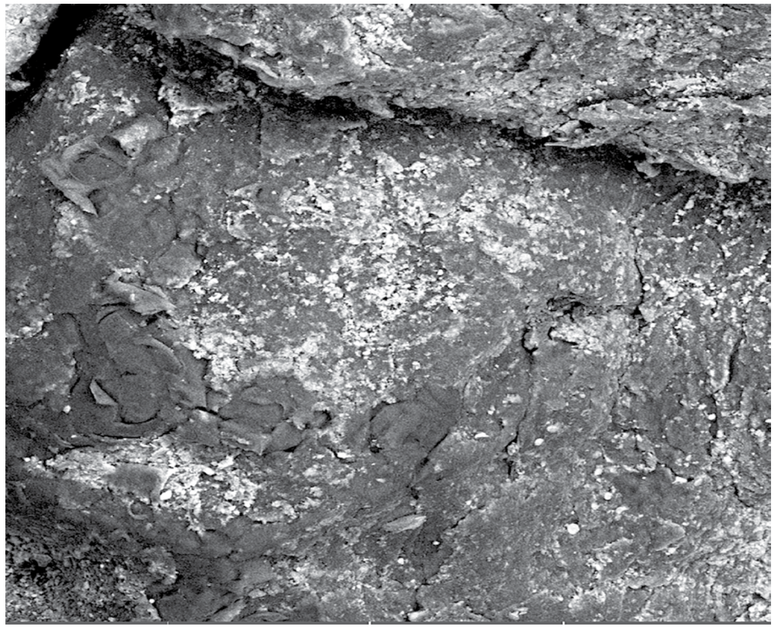
[1] Teixeira, Waterhouse, Moura & Andrade 2020
[2] Fenykövi 1958: 357
[3] Pereira 1993
[4] 'The History of Rowland Ward Ltd.'
[5] The Humane Society International (HSI) and the UK Natural Sciences Collections Association (NatSCA)
[6] Morris 2003
[7] Morris 2003: 94
[8] Catarina Teixeira (coordination), Pedro Andrade, Ana Campos and Laura Moura
[9] Morris 2003: 89 and Ward 1880: 16–31

Exhibition detail. Communion wafers emblazoned with a gold cross of the Order of Christ, an icon associated with the Portuguese voyages of discovery and flown on the caravels that sailed around the African coast in the 1500s.

Stone rhinoceros on the Tower at Belém.

African big game hunting became popular in Europe from the mid 1800s, particularly after Roualeyn Gordon-Cumming returned to Britain from South Africa with 30 tons of animal trophies, and exhibited his collection at the 1851 Great Exhibition in London. The image of the heroic, white male hunter coincided with the development of photography, and thus the romantic notion of hunting in Africa, for the largely European aristocracy, was supported and sustained by the still image.

Exhibition detail. Photograph: Fiona Tangerman, 2017.



Scanning electron microscope image of rhinoceros cartilage. 500 x magnification.
Imaged for Fritha Langerman at the University of Cape Town

Rhinoceros horn is largely composed of keratin, a tough, fibrous protein also found in human hair and nails, with calcium and melanin as secondary components. The horn is constructed from finely packed hair filaments with a density of approximately 7 mm^{-2} and bonded by secretions from the sebaceous glands. In 2019, scientists from the University of Oxford synthesised artificial rhino horn from composite horse hair.

Count Giuseppe de Reali was a Venetian landowner and avid big-game hunter who embarked on twelve expeditions across Northern and Central Africa between 1898 and 1929. Upon his death in 1937, his vast collection of more than 300 trophies and ethnographic objects was bequeathed to the city of Venice, where it is currently displayed in the Natural History Museum. The museum acknowledges that the display of these objects reflects the concerns of the time and is now considered to be in 'dubious' taste by contemporary standards. One of the trophies, a white rhinoceros, was killed in the French Congo—now the Republic of Congo—in 1925.

Exhibition detail. Replica and photograph of the Reali collection at the Venice Natural History Museum.
Photograph: Fritha Langerman, 2017

Photograph: Fritha Langerman

STEM CELLS, THE NEW HEROES OF FERTILITY !

Ruth Appeltant

The current epoch, characterised by unprecedented levels of biodiversity loss, is often referred to as the 'sixth extinction'. One of the most dramatic examples of this is the sad 'rhino story'. Very few rhinoceroses survive outside national parks and reserves, a consequence of persistent poaching and habitat loss. According to the International Union for Conservation of Nature Red List of Threatened Species, also known as the IUCN Red List, three species of the five – the black, Javan and Sumatran – are critically endangered. The greater one-horned or Indian rhino is vulnerable, while white rhinos are classified as near threatened in Africa. When we consider subspecies, the western black rhino has been declared extinct since 2011 and northern white rhinoceroses have become functionally extinct since the last male, Sudan, died in 2018. The only two remaining northern white rhinoceroses are kept under 24-hour guard in Ol Pejeta Conservancy in Kenya. This conservation crisis catalysed my research focus on fertility preservation of endangered species. In my research at the University of Oxford (United Kingdom), I discovered that the lack of egg cells in females was a crucial bottleneck for the conservation of this iconic animal species.

Artificial reproductive technologies are playing an increasingly broad role in fulfilling the desire to have children, breeding superior food breeds, maintaining genetic diversity in climate-resilient local breeds and saving endangered species. As illustrated in the rhinoceros example, those old females on the brink of extinction are in desperate need of artificial reproductive techniques. Without any eggs, there is no source material to grow in the lab even via specialised techniques.
This was the direct trigger for me to think bigger and brainstorm about how to create eggs. Stem cells offer a groundbreaking solution as new heroes in the world of infertility. My current position as research professor at the University of Antwerp gives me an opportunity to fulfil my lifelong dream of taking care of the future by taking care of biodiversity and fertility. Establishing my own research group dedicated to this endeavour has been a longstanding aspiration, and realising a research plan to safeguard endangered species will be the finishing touch. An opportunity to investigate the science questions I believe need to be solved gives immense satisfaction. "Yes, we can…" change the world.

The most promising approach to obtaining eggs when the individual has no eggs naturally, is in vitro gametogenesis, or the production of so-called 'artificial' or 'lab-created' eggs from stem cells. In my lab we develop two methods. A first source of stem cells relies on the presence of already existing stem cells in the ovary. If ovaries are absent, we will convert easily available body cells, such as cells from skin biopsies, into stem cells and transform these into eggs. This approach, once deemed speculative, is now on the cusp of practical application, providing a promising avenue to conserve biodiversity and enhance human reproductive health. The idea sounded futuristic and unreal only ten years ago, when no one would have imagined that eggs could be produced from other body cells. This might become a reality that gives us hope, motivation and energy to preserve biodiversity and improve the quality of human life.

An animal such as the rhinoceros can be a pioneer in awareness and action. If certain technologies are developed for one species, the transition to similar applications in other species and to human medicine will be relatively easy. Each organism has its own unique role in maintaining ecosystems –

and thus the quality of life on our planet. The rhinoceros is the flagship of the endangered species, but every animal, every plant plays its part in ensuring that our systems – and therefore ourselves – survive. When we look at the specific role of the rhinoceros, we see that it affects the ecosystem in different ways. In Africa, rhinoceroses are a keystone species, integral to maintaining the ecosystem.

The importance of science cannot be overstated. The role of fundamental science is pivotal in addressing global challenges, but its impact is maximised when coupled with innovative applications. What people expect from a high-quality life can be achieved through continuous improvements and advancements in science – but not everything in the academic world is a bed of roses. The financial sword of Damocles hangs over every project: no money, no research. Finding sponsorship and funding necessitates a mountain of administrative paperwork with uncertain outcomes and requires an enormous network of colleagues and stakeholders. Moreover, it is difficult to convince potential funders about the necessity and added value of a research area when the science is very technological and effectively incomprehensible to non-experts.

Making science visible for the lay public can enhance comprehensibility. Where scientific work is sometimes difficult for a layperson to understand, art can both educate and generate emotions, provoking more interest in the scientific approach. With this in mind, I was privileged to host the exhibition *FREIGHTED* by Fritha Langerman, professor at the Michaelis School of Fine Art (University of Cape Town) at the University of Antwerp (Belgium) from September 2023 until March 2024. Working on the same reality from completely different perspectives is exciting, and it felt great to bring science and art together. This travelling exhibition focuses attention on the rhino's dire situation. The representation of a rhino as a crate comprised of several reproductions from across the world offers a fragmented picture of a rhino. Reality confronts us with the fact that seeing a rhinoceros could soon be reduced to these digital prints. This surprising and intriguing approach forces us to reconsider humanity's role in the biodiversity crisis.

We have lost the northern white rhinoceros already. Solving the problem naturally is no longer possible, as no males means no reproduction. However, Langerman uniquely illustrates that the rhino is in a fragmented state, but that science may yet be able to pick up some fragments (stem cells) to collate all the pieces back together. So, while the extinction of the northern white rhinoceros highlights the limitations of natural reproductive methods, interdisciplinary approaches – encompassing both scientific and artistic perspectives – are crucial for raising awareness and driving conservation efforts. I advocate for increased support for interdisciplinary research to address the pressing challenges of biodiversity loss and to foster future breakthroughs in conservation science.

Mammal Hall, Natural History Museum, London.
Photograph: Fritha Langerman, 2017

THE

PALL MALL GAZETTE

An Evening Newspaper and Review.

No. 1.—Vol. 1. TUESDAY, FEBRUARY 7, 1895 Price Twopence.

A fine bull rhinoceros was shot in Mashonaland by Arthur Eyre in 1895. It was bought by Cecil John Rhodes for £250 and presented to the South African Museum in Cape Town.

The Daily Telegraph.

LONDON, FRIDAY, MARCH 10, 1894 [TEN PAGES, ONE PENNY.

Mr Rowland Ward has, now on view in Piccadilly, a superbly mounted example of *Rhinoceros simus*, being one of two shot by Mr R.T. Coryndon last July in the north-west of Mashonaland. Coryndon, still in London, has been assisting the taxidermist. The animal stands at 6 ft 1½ in. at the withers; length between uprights, 12 ft 1 in. The specimen is not remarkable for the length of its horns.

THE CHOLERA IN ENGLAND.

DISASTROUS RAILWAY

The Evening News

FORECAST—ENDING 11 a.m. TO-MORROW.
Fine, sunny and hot; thunderstorms locally.

LONDON: TUESDAY, NOVEMBER 28, 1894. CRICKET ED

You Want CALIFORNIA SYRUP OF FIGS

Bathchairs for Summer Promise.

FRAY BENTOS OX TONGUES

IF YOU SUFFER

Clarke's Blood Mixture

Robert Thorne Coryndon was recruited by Cecil John Rhodes in 1889 to escourt new settlers to Rhodesia. Guided by Selous, they founded Salisbury in 1890. In 1892 they spotted some rhinoceros in the Umfuli River region. They fired some shots and missed, but following the spoor, discovered that the calf had died. When they came across another female white rhinoceros they shot and killed it. The herd in this area was less than 10.

The

LONDON, WEDNESDAY, NOVEMBER 30, 1893

Richard Lydekker says that "the white rhinoceros *Ceratotherium simum simum*, found south of the Zambezi River, has been hunted on such a scale that its destruction is just a matter of time." According to the famous hunter Frederick Courtney Selous there are still 10 - 20 of these rhinos left in north-east Mashonaland in 1880.

Times

The Morning Post.

LONDON, WEDNESDAY, MAY 7, 1893.

Lord Lionel Walter Rothschild opened his menagerie and museum of natural history at Tring in 1892. He approached Coryndon to procure the white rhinoceros that had been shot in Mashonaland. As this was not available, Coryndon offered to shoot another white rhino for the collection. At the same time, he was approached by the superintendent of the Museum of Zoology in Cambridge, who wished for a similar specimen. In September 1893, Coryndon reported that he had shot two white rhinoceros bulls and preserved their hides and skeletons.

Exhibition detail. Reimagined newspaper articles from the 1890s that chronicle the declining population of the southern white rhino in what is now Zimbabwe.

Southern white rhino IVF foetus.
Drawing: Fritha Langerman

Carl Akeley and Theodore Roosevelt were early proponents of the 'preservation paradox', the idea that hunting and collecting specimens could, paradoxically, help conserve a species. By the late nineteenth and early twentieth centuries, there was a growing awareness that many large game species were declining. Akeley, a pioneering taxidermist, and Roosevelt, a passionate hunter-conservationist, sought to ensure that these animals would be available for public view forever, preserving them in museums as their wild populations dwindled.

A plaster cast of a baby rhino head at the American Museum of Natural History, New York.

Indian rhino taxidermy specimen, Berlin Natural History Museum.
Photographs: Fritha Langerman

A new method of taxidermy was developed at the start of the twentieth century that has persisted until the present day. A clay body was modelled around an armature, allowing for a particular pose or character and accurate proportions. A plaster form was cast from this, and the skin was then stretched tightly over the plaster. Rowland Ward Taxidermy of Piccadilly, London, was established in the late nineteenth century and provided mounts to museums all over the world.

Bronx Zoo, 2017. Photograph: Fritha Langerman

AN AFTERNOON WITH RHINO PEOPLE

James Elkins

We arrived at a low concrete structure with the sign Multipurpose Building B. The foyer was windowless and grimy. On either side of us there was stainless steel shelving stocked with large plastic balls in circus colours.

"Toys for seals," Dr. Tank said. "They get tired of them, so we put them here for a while, and when they've forgotten them we bring them back."

The main room was set with collapsible metal tables. Sixty or seventy people were sitting, talking, milling around. Dr. Tank and I went through to a table on the far side where there were two empty places under a banner that read, WELCOME RHINO FORUM. Dr. Tank went to greet some people. Next to me a woman was looking over a spreadsheet. Most people in the room were apparently zoo employees. Some wore parkas over green zoo tracksuits. Some had white lab coats. Five or ten people were in business suits. At the next table over there were some unusually muscular men. One held a small book in hands so calloused and muscular that I wondered how he'd turn the pages. I imagined they were the ones who actually handled the rhinos.

Dr. Tank made her way back. People took their seats. This room, she said, had most of the world's rhino experts: directors like her, and also vets, geneticists, wildlife managers and handlers.

The woman next to me stood up. Apparently we were sitting to the left of the podium. Everyone turned to face us.

"Welcome," she said, tapping her microphone and then booming into it. "So nice to see you all here. Our first speaker is Dr. Annamaria Sampada, from the Rome zoo."

A serious-looking woman in a fitted business suit came up and took the microphone.

"We had six black rhinos," she said, with the microphone right up to her lips. "Haemochromatosis is an enormous issue. One of ours died from it, the other from liver cancer. The research still isn't there. Haemochromatosis is a human term. We're trying to get away from it. In humans, it causes diabetes, irregular heartbeat, heart attack, arthritis, cirrhosis of the liver and also impotence, infertility and depression. Rhinos get hide ulcers, anaemia, degraded muscle tissues and of course cirrhosis and diabetes. We autopsied ours. There were gross lesions, but we didn't find iron storage associated with them. We found high iron in the liver, small intestine and lung."

Someone shouted a question. I tried to look serious and knowledgeable. We were seated right at the front, so people would assume I was an expert.

"African rhinos are susceptible, but not others. The genetic proclivity is clear, and it's also known with certainty that wild populations are not prediabetic. We did a sequence analysis, and we confirmed the HFE S88T polymorphism. We thought it might be the feed. We've been monitoring feeding, and it's high quality in comparison to the scrub grasses and succulents they eat in Africa, but guess what? There's too much of it. And guess what? They don't exercise as much. And by exercise I mean lumber and snuffle along, rhino style. They do it, but not enough. That's where our management says we should focus. Questions?"

A man in a camouflage parka stood up.

"I'm in Bern, and we have a Sumatran with encephalomalacia. We got our diagnosis from the Swiss TAG, and they said it might be a related issue, but they're not sure. We could use some advice, our girl's not in good shape."

"Okay, thanks for that. Encephalomalacia is liquefactive necrosis of brain parenchyma. It's usually called softening of the brain, because the tissues become semiliquid. There is no

cure. It causes a wide range of symptoms, from hyperexcitability to hyperthermia. Some young rhinos become nearly comatose and remain that way."

"Like ours."

"It usually follows an insult. Did yours have an accident?"

"We don't think so, but she has high iron indicators, she's prediabetic."

"It's possible there's a connection. Talk to me afterward and I'll put you in touch with the authority, who's in Cincinnati."

A man with a green polo shirt stood up. "In Chicago we measure ferritin," he said. "We're assembling a database, working together with Minneapolis. We have measured over 900 blood samples, 36 animals from 14 institutions, 11 females (that is 270 samples), 25 males, 18 Southern, 18 Eastern and wild born. The results vary widely, from 85 nanograms per mil to 168 403 per mil. At first we didn't believe it. Some of the individuals have encephalomalacia."

"What's the correlation?"

"Probably low. But we're working on it."

"Other questions, please."

"We have a female with vitiligo, so we can't show her outside. She has big blotches of white skin, and she gets burned. I just want to ask everyone here, if you have facilities to show black rhinos exclusively indoors, you can have her."

No one answered.

"She's pretty."

That got a couple of half-laughs.

"Okay, thanks," the chairperson said. "Next we have Steve Farrell, from Lincoln Park Zoo in Chicago."

He was one of the enormous men at the next table.

"Wait," I said, "I have a comment." I took the microphone before she could hand it to him. "I'd just like to suggest you can show your rhino in the sun, outside."

"She burns."

"Just like she would in Africa. These days it's all about diversity. People would like to see differently-abled rhinos. Visitors empathise with animals that suffer. She'd drive up your numbers."

He didn't answer. The speaker held his hand out for the microphone.

"And by the way," I said, "you can get your rhino to exercise more. You can install below-surface treadmills. Again, visitors would be interested. You could chart the rhino's heartbeat and calories so everyone could see. They'd root for them."

I handed over the microphone.

"There's no such thing," someone said. I avoided looking at Dr. Tank.

"We do a lot of bleeding," Farrell said. "We bleed our boys up to 6.7 litres. Sometimes we phlebotomise and just sample every week. It's for sampling, but also for reducing iron solute, because the fresh blood starts out low. One was over-sampled and almost died, so it's possible. Really that's a lot, 6 to 6.7 litres a pop. Two of our boys fill a PVC bucket, and it takes two people to carry the buckets over to waste." He put his elbows out and made a bucket-carrying gesture. "We recommend bleeding for your prediabetics, along with the usual meds. We have a protocol for phlebotomising, we go in under the back plates, and they hardly notice. The public doesn't see the tubes. We can give printouts to anyone who's interested."

I stood up. "I have a question," I said. He handed me the microphone. "I wonder why you don't bleed them in a public space. People would be very interested."

"Our guests wouldn't expect that. It might scare children."

"Animals should be frightening. Life is frightening. It's the new thinking in zoo welfare: full exposure."

"Sorry, who are you?"

I didn't answer.

Next there were two soft-spoken scientists from the Rhino Research Council. They assured everyone that their update on reproductive issues was nearly ready. "In rhinoland," one said, "there are many techniques for preserving genetic material. Rhino necropsy protocols are well established, and as of next year they will be mandatory."

"Where are they?" someone asked.

"On the AZA site, under Necropsy, then under the species, then the pull-down for African or other."

"I can't get there."

People shook their heads.

"Sorry," the other scientist said, "we can help afterwards. But for now, I need to report on what is collected. If your boy or girl dies in the clinic, you need samples for everyone in the TAG group. That means, first, 200 grams of brain tissue per sample, frozen immediately. Second, 2 grams of heart tissue, ditto. Third, skin biopsies. These are punch biopsies, and they need to be analysed right away, at room temp. Fourth, testicles/ovaries, 2–5 mm sections, cooled but fresh.

"In the field it's different. You need to prepare a complete set of tissues, that's brain, heart, skin, testicles/ovaries, liver, kidney, spleen, 200 grams each, frozen at minus 80. That is ideal, but tough in the field. If you can't do that, then a complete set of formalinised tissues in a slide set, or if you can't do that, 1 mm squares of the complete set in glutaraldehyde.

"For iron profile testing, use the NDSU laboratory, they have a commercial laboratory with a ferritin assay for rhinos. Here's their own list of what they provide: 'Serum iron, ferritin, transferritin, TIBC, haptoglobin.' That's North Dakota State University Medical Centre, it's Sue Denison – where are you, Sue? Raise your hand."

A hand went up in back.

The second scientist gently elbowed the first. "Thank you, Anne. Now I will present on semen collection."

I whispered to Dr. Tank: "I think I'll give a talk too."

"It's not necessary," she whispered back.

"No trouble," I said out loud.

"Well," the first scientist was saying, "it turns out anaesthesia does play a role in successful semen collection. The boys aren't easy to control with mating blocks or milkers. Semen goes off-target, and the handlers have to be careful. We use Dave Inject rifles, with oh-four small game cartridges. That calms the boys down just enough so they can deliver into the socket. Then it's important to separate x and y sorted sperm, it works well, but you've got to get it into that female very soon after thawing, so there's a sort of a time crunch."

A person in back of the room said they were just starting up with one of their males, and they needed to know where to send their semen.

"Everyone sends ovaries to Cleveland and semen to San Diego," the scientist yelled.

Then came a grey-haired veterinarian from Berlin.

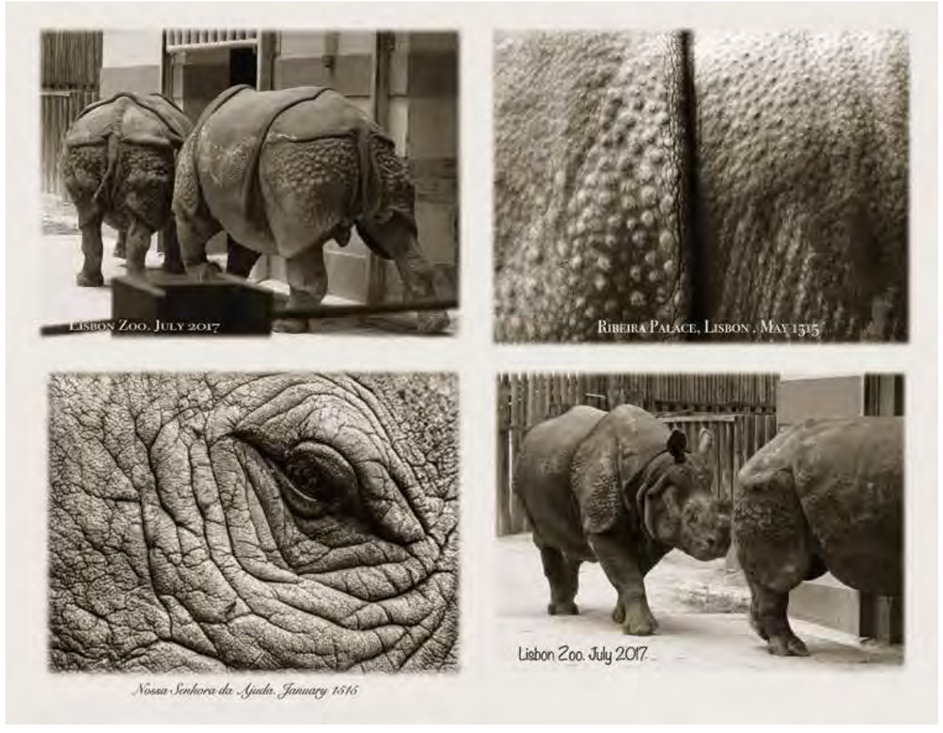
"I am going to report on ovulation," he said very quietly. "The big question is: can black rhinos be stimulated to ovulate using olfactory cues such as conspecific faeces? We think so, we're studying it. We use vanilla extract for a control." He said they spread black rhino faeces from mature males around the female's pen, and they had ovulation twice, but collection failed both times. "It is crucial that we collect more," he said. "There are relatedness issues in southern white rhinos. Using snips we get the cost of testing down to 100 dollars per animal, but it's a pressing issue."

The woman who was chairing the rhino forum stepped up and told everyone they had a special treat in store: Peter Donato, head of the rhino unit in the San Diego Zoo. He spoke with a loud American accent.

"I'm here to tell you artificial insemination is important for northern white rhinos: it's because of inexperienced males, irregular cycling, smaller exhibit and group size. In San Diego we'd like to have enough semen collection and semen banking so we can say, if your girl's ready to go, we're ready. In addition, rhino immobilisation is now a comparatively simple procedure. In February it was our priority to get our oldest female pregnant, so we got her in the barn and then we started our ultrasounds. We have been working with five of our girls. We did hymen ruptures, and in the end over two hundred and fifty ultrasounds. We're fully set up, we have warm water for enemas, chutes with full access, you can drive in herds with cats; we're equipped for nighttime ultrasounds; we even have a cable yard for quarantines. It leads down to a concrete box chute and then out to the exhibit.

"So one came in pregnant, that was a surprise. We monitored her, we got thirty-five ultrasounds. There were some weeks when the baby disappeared, but then it came back onto the ultrasound. One day we saw the heartbeat! When she showed signs of leaking some milk, we were able to get in there to get some preliminary data on electrolytes, so we predicted when she'd drop her calf to within twelve hours.

"Our youngest came in with a bullet wound, which drained continuously. We opened her up and put in a drain, we flushed her twice daily for months. Somebody from border control did radiographs, and finally we did a full body scan. We were more aggressive then – to find the source of the infection, we opened a four- by eight-inch opening, and still we couldn't find the source of the infection, and then amazing good luck! A vet came by and happened to spot something dark and shiny in there and pulled out the bullet fragment. Now she's three years



Exhibition detail.

old, looking fine, almost sexually mature."

Everyone clapped.

The chair slapped Peter on the back as he stepped down. "The next paper is from San Diego, and it's on sex appeal."

A thin elderly man stepped up to the podium. "In the US, we have full genetic profiles on all fifty-three of our black rhinos. Of course we prefer to breed naturally. The problem is sex appeal. Consider the first dozen on our roster. Metrozoo Miami has a 40-year-old, not appealing to most females. Chicago has a mismatched pair. The male is genetically valuable for diversity, but the female is an over-represented breed, so they keep them apart. Columbus has a lovely 27-year-old, but she has an unidentified health problem, and she doesn't want to breed. Kansas City has a handsome old male, but he's a carrier of vitiligo so they won't breed him. Des Moines has a genetically over-represented male, in fact his genes are so common they're sending him back to Tanzania. Racine has a good pair, but the male is not interested. We'll split them up next year if she doesn't get pregnant.

"And so it goes. When the genetic conditions are right, or one's sick, or one's old, one's not in the mood, or the lighting's wrong. This is why Atlanta is going one hundred percent artificial. No more boinking in Atlanta."

The chair said they had one more paper. It was given by a sad-looking German man, representing the Northern White Rhino Project.

"As you know there are only two left," he said, "and they're in Kenya. So the proposal is to create northern white rhino embryos that can be carried by other mothers. We have 12 northern white tissue banks; we want them to become stem cells and get them to make embryos. We have young girls who will become surrogates. We took faecal samples from our girls, and we found only one who is ovulating. She's a rock star, she pushes out her own bullets, and she ovulates on her own. We use desforelin acetate, an injectable, it's used in the equine industry. The females all responded within 24 to 36 hours. This let us set up timing for insemination. We need more ovaries, so if one of yours dies, if there's a euthanasia event, send them to us."

Thank you, the chair said, I think that might be all our talks now.

I stood up and gave her a what-the-hell expression. "Oh, I'm sorry," she said. "This is – "

I was right next to her, so it was easy to take the microphone away from her.

"Hi everyone," I said. "I'm Dr. Samuel Emmer, I'm a Canadian biologist. I specialise in stereotypical movements of captive animals. I just wanted to say I've been very much enjoying this event. I'd like to report on the latest thinking in large animal welfare when it comes to stereotypical movements. For years, people thought that when your large animals paced or stomped, or gnashed their teeth, or over-groomed, or masturbated compulsively, people used to say they were just performing behaviours and there was no reason to worry. This is your typical attitude: the animal, rhino let's say, performs *x* number of behaviours in the wild, and *y* number in the zoo. Some of the behaviours, like all-day pacing, can't be done at full scale, they have to be cut down to the size of the enclosure. Then the old behaviourist line is, 'That's pacing behaviour *x*, but instead of being a ten-mile track it's a ten-foot track.' Or here's a case from this zoo, sea eagles that want to soar, but they can only take off when the wind is so strong that it will keep them up in the air without moving forward, if you see what I mean. The behaviourist line is, 'Soaring is just a sea eagle behaviour.'

"In the literature on stereotypical movements, pacing in a figure eight is not the same as pacing in the wild. It's not just a small-scale version of the animal's normal behaviour. It's a pathology. The animals' welfare is degraded. In a word, they are suffering. And it disturbs visitors. So as you know, a lot of zoos medicate, they have large pharma budgets. That's to suppress the signs of suffering."

I searched the room for signs of annoyance. Everyone was looking at me impassively, as far as I could tell. They expected me to talk about rhinos, but what did I know about rhinos?

"Okay, so here's the new thinking. Why hide the suffering? Let visitors see the effect we're having on the animals we keep. Let the big pacing mammals wear down figure-eight grooves in their pens so visitors can see they walk the same paths all day long. Monitor sores from repetitive scraping, but don't pad the enclosures. Don't medicate to stop primates from pulling out each other's hair or eating their faeces. Let your animals perform their behaviours like the animals they are. Same when

they develop heart conditions. If they've got unhealthy spoor, put signs in front of it, telling visitors what's wrong."

A couple of people were looking at me funny. Some people in back were whispering.

"The new thinking is, let animals be animals. Let your rhinos rut around and dig up everything. Don't clean up after them, except for hygiene. Don't replace mud pits with clean gravel or concrete. Let them live with their mess. Let them crash into their pen walls, don't put up electrics. I'm just telling you what the new thinking is. Let them trample their vegetation. If your boys need tranquilising to deliver their semen, let the public know. Don't tell children, of course. Put it on appropriate signage. Put on milking shows. When you've got pre-diabetic animals, put up signage telling people their symptoms. If they're really sick, say they've got big ulcers on their hides, then put up educational material. Say, 'We're sad about this, but this rhino is very sick. Basically we made it that way. Rhinos don't exercise, but they do need to keep walking. This one doesn't have enough space. But it's okay! We're monitoring our girl very carefully, we take a couple gallons of blood from her every week, we're keeping an eye on her iron levels. We're cutting down on her diet. She really isn't any sicker than your average fat sluggish human.' Or if your rhino has encephalomalacia, like yours in Naples" – I pointed to the man in the parka, who gave me a startled look – "then you could put up a sign: 'This young rhino isn't shy. He has a condition known as "softening of the brain", which happens to captive rhinos for unknown reasons. Be nice to him. No shouting or waving your arms. He knows you're here. He just can't respond.' So…"

I stopped. I'd gotten off-topic.

"Anyway, this is the new science. I just thought you'd like to know."

There was silence, and then someone called out, "Who are you?"

"Dr. Samuel Murmur, PhD '96."

A man off to one side raised his hand.

"Yes, sir?" I called out, pointing to him with the microphone.

"What you just said is ridiculous."

"Hmm, well, don't shoot the messenger." I smiled and shrugged.

"Our boys are completely happy," one of the big handlers said, his enormous hands flat on the table.

"Our girls too," someone else said.

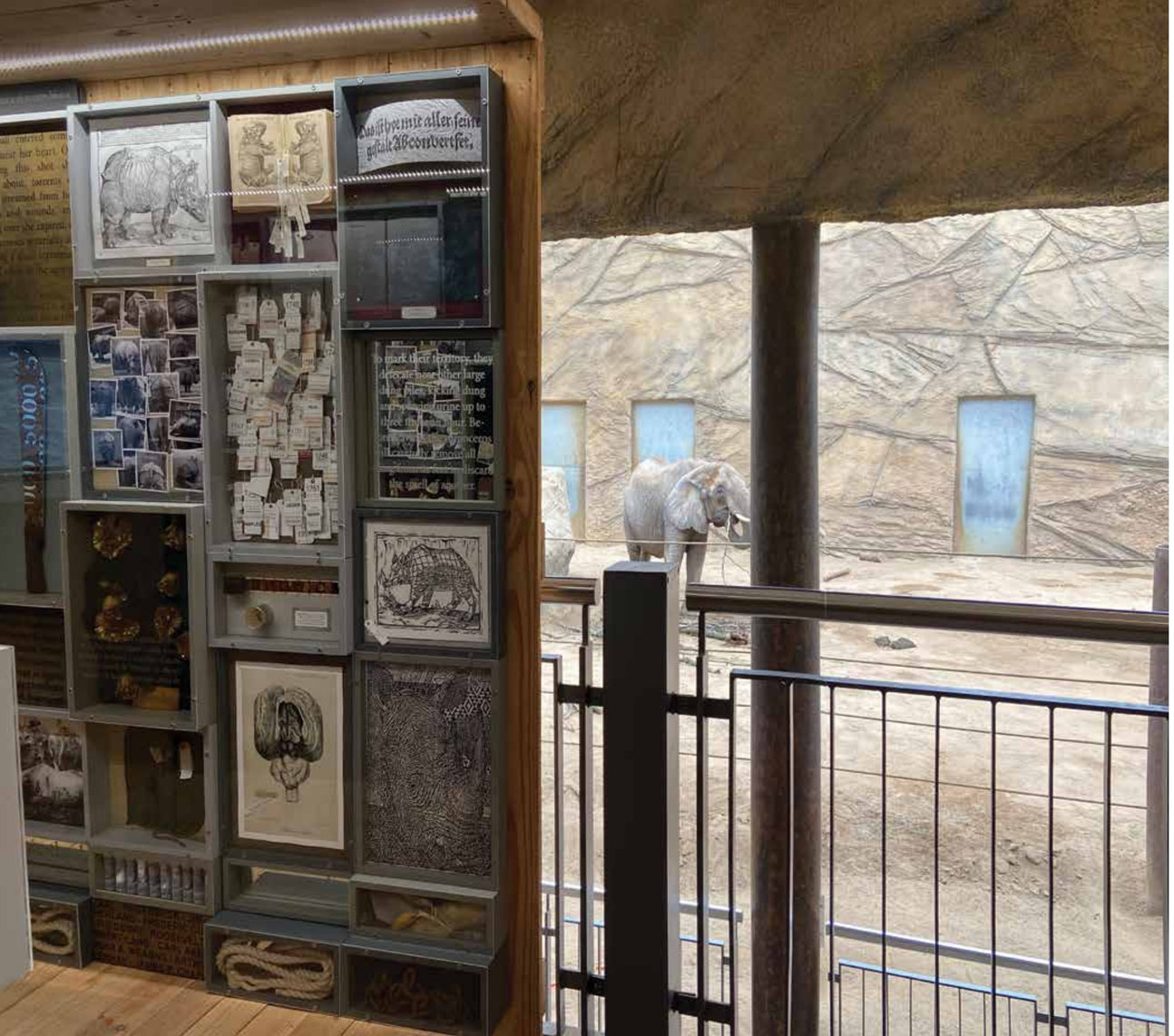
I looked at the chairperson and made a who-are-these-people gesture. Several more hands went up. I handed her the microphone. "Thanks, everyone," she said, "for a very successful meeting. The clinic starts in twenty minutes."

The meeting broke up, and I threaded my way out without meeting anyone's eyes, as if I had somewhere important to be. I didn't think Dr. Tank would follow me, but once I got away from the crowd there she was at my side.

"Interesting speech. You know that was a rhino forum. You didn't have to speak."

Author's note: this is a fictionalised report on an afternoon spent at a conference for zoo professionals. I tried to capture the feeling of the place, and the sometimes bloody talk about rhino health, all motivated by how much everyone in the community cares for rhinos. The less said about the narrator, the better.

Bessie. Bronze sculpture by Katherine Lane Weems, Bronx Zoo, New York, 1936. Modelled on the Indian rhino who was resident at the zoo until 1962.
Photograph: Fritha Langerman, 2017




OPEL 200
Kronberg im Taunus 61476 near Frankfurt
KRONBERG
GERMANY
MARCH - NOVEMBER 2024

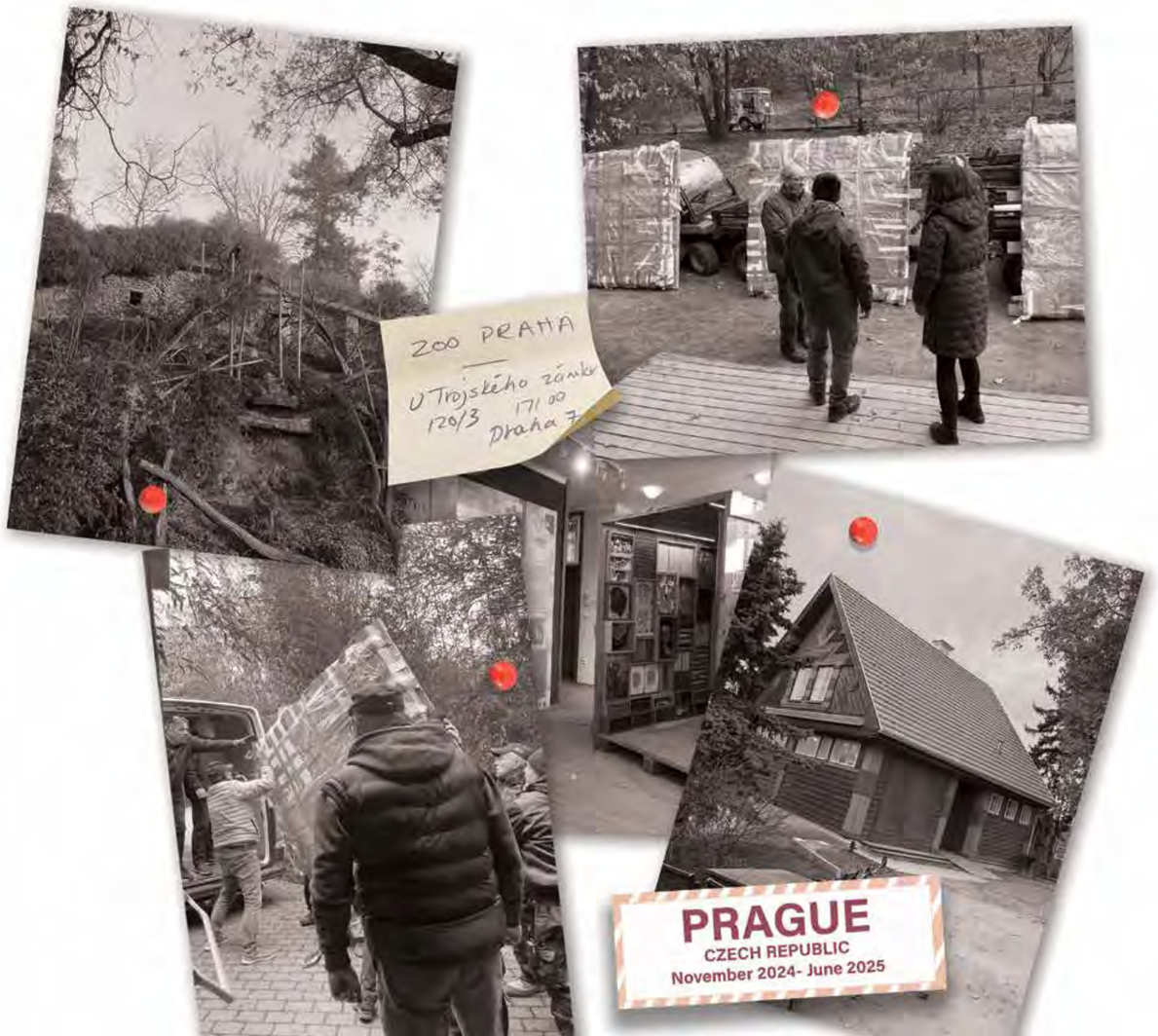
Harry Manners: (1917–1997). African elephant hunter. 1000 elephants shot. • P.T Barnum: (1810–891). Founder of the Barnam and Bailey Circus that presented rhinos as performers in the 1870s lso an exhibitor of people. • Henry Hartley: (1815–1876). African big game hunter. 1200 elephant hot. Killed by a rhinoceros. • Major G.H Anderson: (1878–1946). African elephant hunter and guide 00 elephants shot. • Douwe van der Mout: (1705–1761). Ship's captain and rhinoceros exhibitor lara, the Dutch rhinoceros, was exhibited extensively at European centres for twenty years. • P.G.H owell-Cotton: (1866–1940) naturalist, explorer, hunter, collector and early conservationist. The owell-Cotton museum contains over 16000 mammal specimens, many mounted by London taxiderm ompany Rowland Ward. • William Cotton Oswell: (1818–1893). African and Indian big game hunter. rederick Selous: (1886–1966). Hunter, explorer, soldier and author. (A hunter's wanderings in Africa 881). 23 white rhinoceros and 28 black rhinoceros killed. • Carl Hagenbeck: (1844–1913). Wild nimal merchant and supplier to zoos. Credited as creator of modern zoo, the Tierpark Hagenbeck eventeen Indian rhinos and nine African rhinos sold. In the1870s, with the market in exotic animals eing flooded, Hagenbeck turned to exhibiting people. • Jim Sutherland: (1872–1932). Soldier frican big game hunter and author (The adventures of an elephant hunter, 1912). 1500 elephant illed. • Theodore Roosevelt: (1858–1919). Naturalist, African big game hunter, president and uthor. (African game trails, 1909). Leader of the Smithsonian-Roosevelt African Expedition, 1909 910. 11400 specimens were collected, including many rhinoceros. • Herbert Lang: (1879–1957) Mammologist and joint leader of the AMNH's Lang-Chapin Congo Expedition, 1909-15. • Carl Akeley 1864–1926). Taxidermist and biologist at Chicago Field Museum and AMNH. Famed for developing he habitat diorama and the Akeley Hall of African Mammals at the AMNH. • Edgar A Mearns 1856–1916). Surgeon and field naturalist. Member of the Smithsonian-Roosevelt African expedition 909. • Arthur Vernay: (1877–1960). Antiques dealer and big game hunter in India. Collector fo he AMNH for which contribution the Vernay-Faunthorpe Hall of South Asian mammals is named James Chapin: (1889–1964). Ornithologist and joint leader of the Lang-Chapin expedition to the ongo in 1909. • Alfred Sharpe: (1853–1935). African elephant hunter and colonial administrator Philip Percival: (1886–1966). African safari guide. Clients included Theodore Roosevelt, Ernest lemingway and Baron Rothschild. • Roualeyn Gordon-Cummings: (1820–1866). African big game unter and author: (Five years of a hunter's life in the far interior of South Africa, 1950). • Richard jader: (1869–1916). Hunter and author (The Big Game of Africa, 1910). Led the Tjader expedition o East Africa in 1906 collecting specimens for the American Natural History Museums. • Sir Samuel aker: (1821–1893). Explorer, naturalist, soldier, African and Asian big game hunter and author (The ifle and hound in Ceylon, 1853). • John Faunthorpe (1871–1929). Indian big game hunter. Took part n the Vernay-Faunthorpe expedition, collecting Asian wildlife specimens for the American Natural istory Museums in Chicago and New York. • J.A. Hunter: (1887–1963). African big game hunter and uthor (African Hunter, 1952). 1000 rhinoceros killed. • Etienne Geoffroy Saint-Hilaire: (1772–1844) Naturalist and Professor of vertebrates at the Museé National d'Histoire Naturelle, Paris. • J. Alden oring: (1871–1947). Naturalist and mammologist at the Smithsonian Institution and Bronx Zoo member of the Smithsonian-Roosevelt African Expedition (1909). Collected live specimens from outh Africa in 1916 for various American zoos. • James Rowland Ward: (1848–1912). Taxidermist ublisher and founder of the taxidermy firm Rowland Ward Limited of Piccadilly. Also specializing n "Wardian furniture" made from animal parts. Rowland Ward taxidermied the white rhinoceros onated to the South African Museum by Cecil John Rhodes in 1895. Rowland Ward's Records o ig Game 30th edition was published in 2020. • Edmund Heller (1875–1939). Museum mammalogist nd zoo director. He accompanied Carl Akeley on the Field Museum's 1907 African expedition and as part of the Smithsonian Roosevelt African Expedition (1909). • Major C.H. Stigand (1877–1919)

CARL HAGENBECK - JIM
HERLAND - FRÉDÉRIC CU
THEODORE ROOSEVELT
RBERT LANG - CARL AKEL
GAR A. MEARNS - ARTHU
VERNAY - JAMES P. CHAPIN
ÉTIENNE GEOFFROY SAINT
HILAIRE - J. ALDEN LORING
- JAMES ROWLAND WARD
EDMUND HELLER - LESLI
ARLTON - JOHN CHAMPIO
AUNTHORPE - C.H. STIGAN
ALFRED SHARPE - PHILIP
ERCIVAL - WILLIAM COTTO
WELL - ROUALEYN GORDO
MMING - RICHARD TDJADE
- SAMUEL BAKER - JOHN
AUNTHORPE - J.A. HUNTE
RRY MANNERS - P. T. BARN
- HENRY HARTLEY - PETER
APSTICK - G.H. ANDERSON
OUWE MOUT VAN DER ME
P.G.H. POWELL - COTTON
FREDERICK SELOUS -

Photograph: Fritha Langerman, 2018

The sculpture *Rhinocéros* was produced in 1878 by Henri Alfred Jacquemart to coincide with the Paris World Fair. Initially displayed at the Trocadéro Palace, it is now housed outside the Musée d'Orsay. In nineteenth century Europe and America, racial typology emerged as a pseudo-scientific discipline, using measurement to seek biological justification for racism and imperialism. The spectacle of difference was also transformed into public amusement. The 1878 World Fair was the first to feature human zoos, exhibiting individuals from French colonies such as Tahiti, Senegal, and Indo-China. Before this, wildlife trader and zoo owner Carl Hagenbeck had staged exhibitions of Inuit and Nubian people at Hamburg's Tierpark, while Isidore Geoffroy de Saint-Hilaire, a zoologist specializing in deviations from 'normal' structure, had presented similar displays at the Jardin Zoologique d'Acclimatation in Paris. As recently as 2005, the Augsburg Zoo in Germany presented an 'African village' with cultural performances, underscoring the persistence of colonial spectacle into the modern era.


LISBON
PORTUGAL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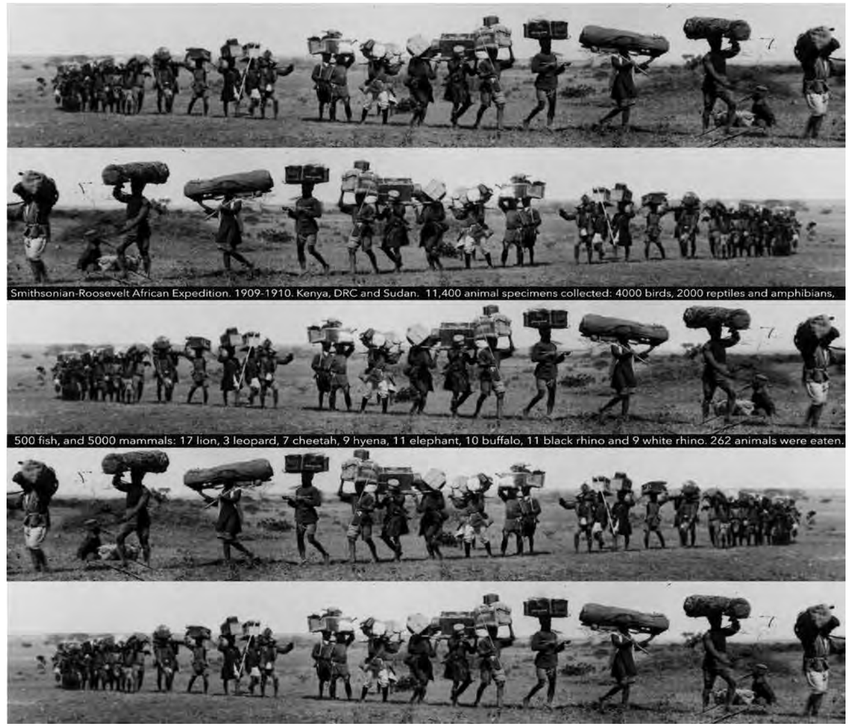
CZECH REPUBLIC
November 2024- June 2025



Soon after lunch we drew up at the little station of Kapiti Plains, where our safari was awaiting us; "safari" being the term employed throughout East Africa to denote both the caravan with which one makes an expedition and the expedition itself. Our aim being to cure and send home specimens of all the common big game - in addition to as large a series as possible of the small mammals and birds - it was necessary to carry an elaborate apparatus of naturalists' supplies; we had brought with us, for instance, four tons of fine salt, as to cure the skins of the big beasts is a herculean labour under the best conditions; we had hundreds of traps for the small creatures; many boxes of shot.

Theodore Roosevelt: African Game Trails, 1910

Ceratotherium simum

White rhinos are the second largest land mammal. Two sub-species exist in Africa: the northern and southern white rhino. Southern white rhinos were thought extinct in the 19th century, but after a small population was found in Kwazulu-Natal, South Africa, conservation efforts enabled the growth of the population to approximately 20 000 animals in Southern Africa. The last northern white rhino, Sudan, died in 2018 in the Ol Pejeta Conservancy, Kenya. His two female descendants Najin and Fatu still survive in 2025.

Diceros bicornis

Black rhinos are the smaller of the two African rhino species and have a hooked upper lip and two horns. The population dropped in 1995 to less than 2500. They now number over 5000, but remains critically endangered.

Rhinoceros sondaicus

Javan rhinos are the most threatened of the rhino species. They have a single horn and loose grey skin, similar to the Indian rhinoceros. Approximately only 60 still live in Java, Indonesia. Vietnam's last Javan rhino was poached in 2010.

Rhinoceros unicornis

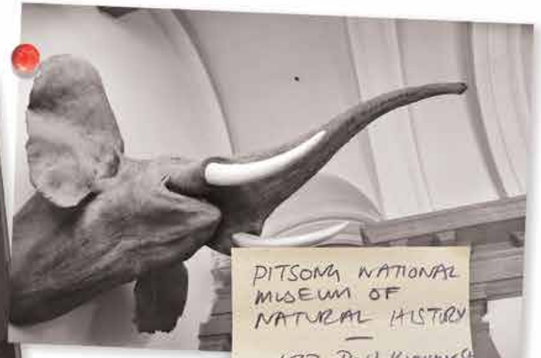
The Indian rhino is the largest of the rhino species. By the start of the 20th century, only 200 individuals remained in the wild. Today in India and Nepal populations have increased to around 3700.

Dicerorhinus sumatrenis

Sumatran rhinos are the smallest of the living rhinoceroses, are covered with long hair and have two horns. They are highly endangered and only found in Sumatra and Borneo where their natural habitat has been radically diminished. Malaysia's last male Sumatran rhino died in 2019.

Naturhistorisches Museum WIEN

Burgring 7
1010 Wien.



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VIENNA
AUSTRIA
JULY 2025 - JANUARY 2026

PRETORIA
SOUTH AFRICA
MARCH 2026 -

We see them as if
in a rear-view
mirror, congener
mammals, as this:
Marakele under
its siphon of griffons
passing the Waterberg
with what sounds
like steel pinions,
and in whatever
mirror we divine
the horror of Narcissus,
the meat of rhinoceros
in a watercourse road.
As if scourged across
the shoulders, as if
haltered, this great
tranche of steak.
The work of what?
We will never know, nor
whether this will
survive the unmentionable
battle. Meanwhile
the sunlight is falling
generously on flies
and Botswana, and
we turn to see it turn
with its filleted neck
into the thicket, there
to repair or die
(like a small battleship)
and as we know
stand or fall for all
else it means: self,
species, unspokenly
us, and we do not
grieve, but seek out
a similar shade. Later
I find in one field
of binocular vision
four species of woodpecker
suddenly, once.
And the rhino is trumped, but
under the common sun
the strap cuts into my neck,
and I have nothing
to add to what
has been subtracted.

Peter Anderson

Contributors

Peter Anderson was educated at the University of Oxford and at the University of Cape Town, where he is an associate professor in the Department of English Literary Studies. He has published four volumes: *Litany bird*, *Foundling's Island*, *In a Free State: a music* and *Night transit* (Dryad). He is the recipient of South Africa's Thomas Pringle Prize for Poetry (2018) and the Sanlam Literary Award (2006). His work has appeared in various journals, both locally and abroad, and is widely anthologised.

Annie Antonites is a senior curator of archaeozoology and large mammals at the Ditsong National Museum of Natural History, Pretoria. She specialises in archaeofaunal analysis, studying human-animal interaction in the African past. She has a PhD from Yale University and has published more than 22 research articles.

Ruth Appeltant is a research professor at the Gamete Research Centre, University of Antwerp, specialising in fertility preservation and in vitro gametogenesis. She has a PhD in veterinary science from the University of Ghent. From 2019 until 2022 she was a post-doctoral researcher in the Rhino Fertility Project, which aimed to further understanding of rhinoceros follicle development using fixed ovarian tissues and to develop techniques to develop rhinoceros eggs from cryopreserved ovarian tissues. She is currently working on a project to breed the functionally extinct northern white rhinoceros.

Ronna Bloom is the author of six books of poetry. *The more* (2017) was longlisted for the City of Toronto Book Award. Her poems have been recorded by the Canadian National Institute for the Blind and translated into Bangla, Chinese and Spanish. Ronna has led initiatives to bring poetry into health care settings and health care education. She has collaborated with filmmakers, musicians and choreographers. Her most recent book of poetry, *A possible trust: the poetry of Ronna Bloom*, was published in 2023.

Kathleen Coleman is the James Loeb Professor of the Classics at Harvard University. Her research interests include Latin literature, history and culture in the early Roman Empire, and arena spectacles. She acted as chief academic consultant on the script of Ridley Scott's Gladiator. Publications include *Statius, Silvae IV: Text, translation, and commentary* (1988) (ed.), *Albert's Anthology (Loeb Classical Monographs 17)* (ed.) (2017) and *Images for Classicists (Loeb Classical Monographs 15)* (2015).

Susan Dackerman is an art historian and curator who specialises in early modern Northern European art, with a focus on fifteenth- and sixteenth-century print culture. Her research investigates how printed images produce meaning and knowledge, especially in relationship to their materiality, manufacture and physical presence. She has held posts at the Baltimore Museum of Art, Harvard Art Museums, Getty Research Institute and Stanford University. Publications include the recent *Dürer's knots: early European print and the Islamic East* (2024), *Corita Kent and the language of pop*, (ed.) (2015) and *Prints and the pursuit of knowledge in early modern Europe* (ed.) (2011).

James Elkins is the E. C. Chadbourne Professor in the Department of Art History, Theory, and Criticism at the School of the Art Institute of Chicago. He writes on art and non-art images; recent books include *Chinese landscape painting as Western art history* (20--) and *Art critiques: a guide*. His books include *The poetics of perspective* (1994), *The object stares back: on the nature of seeing* (1996), *On pictures and the words that fail them* (1998), *What painting is* (1998), *Pictures of the body: pain and metamorphosis* (1999), *Pictures and tears: a history of people who have cried in front of paintings* (2001) and his recent novel, *Weak in comparison to dreams* (2023), to which his included essay relates.

Denise Hamerton completed an MSc in Conservation Biology at the Percy FitzPatrick Institute of African Ornithology. UCT in 1993. The published thesis was an assessment to benchmark the existing state of the South African natural history collections. She worked at the (Iziko) South African Museum as the collection manager to the comparative osteology collection. During her time at the museum, she managed the curatorship of all the terrestrial vertebrate collections (including mammals, ornithology and herpetology) and contributed to several public exhibitions. She retired in 2022 and continues to assist on a voluntary basis.

Catherine Kovesi is a professor at the University of Melbourne, where she served as Chair of the Discipline of History (2022–2023) and Chair of the Management Committee of the Australasian Centre for Italian Studies (2018–2022). A graduate of the University of Oxford, where she completed her D.Phil in History, her main research areas are the discourses surrounding luxury consumption in early modern Italy, and Florentine and Venetian social and cultural history. She has published extensively and is the is the co-editor of the forthcoming six-volume Bloomsbury series 'A cultural history of luxury'.

Nina Liebenberg is a postdoctoral researcher at the University of the Arts, Helsinki. She completed her PhD in Fine Art at the University of Cape Town, where she taught various courses in the Honours in Curatorship programme. Her projects and interdisciplinary workshops use curation as a methodology to explore overlaps and connections between diverse university departments and disciplines. Exhibitions include *Diagnosing loss* (2022), *Chest: a botanical ecology* (2018–2019) and *Suspicious mind* (2013–2014).

Siyakha Mguni is a senior lecturer at the University of Cape Town, where he completed his PhD. He has published extensively on rock art in South Africa, including the books *Termites of the gods: San cosmology in southern African rock art* (2015) and *Archival theory, chronology and interpretation of rock art in the Western Cape, South Africa* (2016). He was project manager of the International Rock Art Collaboration coordinated by the University of the Witwatersrand, and he has taught archaeology at UCT and Wits.

Bongani Ndhlovu is the acting CEO of Iziko Museums. He has been extensively involved in heritage and museums for the past 20 years, working at various museums in South Africa, as well as serving on various heritage and tourism bodies in South Africa. He has also served as the Vice-President for International Committee for Museums of Archaeology and History (ICMAH). He has a PhD in History from the University of the Western Cape.

Kees Rookmaaker has actively worked on the biology and history of the rhinoceros for 50 years. He is a member of the Steering Committee of the IUCN-SSC Asian Rhino Specialist Group and advisor to the EAZA Rhino TAG and to the International Rhino Foundation. Until 2023, he was the editor of the rhino section of *Pachyderm* He is the author of twelve books on African and Asian exploration and on the rhinoceros, as well as over 250 shorter publications, many in peer-reviewed journals. Until 2015 he worked as a senior research fellow on Darwin online and Wallace online at the National University of Singapore. He was Secretary of the International Commission on Zoological Nomenclature (ICZN) for a short period in 2015. He served on the Council of the Society for the History of Natural History, which awarded him their Founder's Medal.

Pippa Skotnes is a professor and founding director of the Centre for Curating the Archive at the University of Cape Town. She has a D.Lit degree from UCT. Major projects have included various publications around the Bleek and Lloyd archive, including *Sound from the thinking strings* (1991), *In the wake of the white wagons* (1993), *Miscast: negotiating the presence of the Bushmen* (1996), *The digital Bleek and Lloyd*, a complete, searchable digital archive published with the book *Claim to the country* (2007); *Unconquerable spirit: George Stow's history paintings of the San* (2008) and *Uncertain curature: in and out of the archive* (2014, with Carolyn Hamilton) and *The courage of ǂǀkabbo* (2014, with Janette Deacon). She is currently working on a book about a nineteenth-century murder in the northern Cape, as well as on a project about the nature of composition.

Catarina Teixeira is a conservator who has worked at the University of Lisbon, National Museum of Natural History and Science on Conservation of Scientific Collections. In 2019 she co-authored the paper 'Displaying a taxidermy rhinoceros in a museum: the Lisbon conservation approach''. She is studying towards a PhD in History and Philosophy of Science from the University of Évora.

Gijs van der Ham is a historian and previous curator at the Rijksmuseum, Amsterdam. He has produced many exhibitions and books, including *Held/Hero* (2007) in the Nieuwe Kerk in Amsterdam; an exhibition on the Dutch War of Independence (80-year war 1568–1648 (2018)) and the 18th century rhinoceros Clara (2022). He has published the books *The 80-year war* (2018), *The history of the Netherlands in 100 objects* (2013), *Tarnished gold: Ghana and the Netherlands from 1593* (2016) and *Clara the rhinoceros* (2023).

David Waterhouse is a curator, palaeontologist, evolutionary biologist and illustrator. He is currently the curator of the Polar Museum, Scott Polar Research Institute, University of Cambridge. He previously spent sixteen years at Norfolk Museums Service as Senior Curator of Natural History and Geology. He was co-creator of Norfolk's 'Deep History Coast' project. His excavation experience includes the oldest archaeological site in northern Europe at Happisburgh in Norfolk, a complete ichthyosaur in Whitby, North Yorkshire, and a *Tyrannosaurus rex* in Montana, USA.

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In the same year that he envisioned his famous rhinoceros, Dürer also created engravings of the northern and southern celestial hemispheres. While his depiction of the northern constellations was relatively accurate, the southern constellations remained incomplete. Additional constellations were incorporated towards the end of the seventeenth century, following further European circumnavigation of the globe. Among them was Monoceros, the unicorn, a mythical creature believed to have been conflated with the rhinoceros. As fragments of pachyderms travel between the Northern and Southern Hemispheres, and species number less than fifty, the imagined rhinoceros finds its place among the stars.