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Mammoths, Mosasaurs, and More:

The Meaning of Fossils Collected and Displayed by Naturalis Biodiversity Center and its Predecessor Museums (1878-2024)

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Plate 1: *The Giant Elk and Mammoth Composite skeletons,* on display at Naturalis Biodiversity Center, Ice Age gallery. Photograph taken by author on 22 May 2024.

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Abstract

The following paper investigates the meaning of fossils at the RGM, NNM, and Naturalis from the years 1878, when the RGM became an independent institution, to 2024, the composition of the museum in its configuration at the time of writing. The contextualization of fossils at national museums imbues them with a certain national significance, as such they are considered politicized. To this end, Chapter Two (1878-1939) sees fossils as extensions of the Dutch Colonial state. Fossils are placed within a system of extraction and research that helps to justify colonial rule. Further, as seen in the case study of Eugene Dubois' Java Man, this system allowed the RGM to make Dutch national heritage claims over extracted colonial material. Chapter Three (1945-1989) investigates how the changed political situation of the Netherlands was reflected in a change of the material conditions of which fossils it excavated, and how this led to the creation of a national paleontological tradition with particular qualities. It finds that this tradition is based on Pleistocene mammalian fossils, and is often associated with extraction from water. This gives the Netherlands both a historicized deep-time genesis, and a distinct paleontological tradition. Chapter Four (1989-2024) investigates how dinosaurs entered the museum and the transformative effect this had on existing paleontological displays. This relies on first setting up the cultural impact dinomania had on the Netherlands. The chapter finds that dinosaurs either remove Pleistocene fossils from national discourse, or otherwise give them a more humble character, depending on the relational spatial placement between dinosaur and Pleistocene displays. The paper concludes that the meaning of paleontology is derived from the material conditions of its excavation and the cultural structures within which it is embedded. This research has broader implications for how we construct the link between deep time and national history, and opens the doors to questions about paleontological heritage.

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From September 2023 to March 2024, I had the opportunity to join the VWO research project "Who did all the Work," on the topic of indigenous labor in Dutch scientific expeditions to the Dutch East Indies. The experience and knowledge gained on this topic would become one of the foundational cornerstones upon which this research rests. As such, I would like to thank Fenneke Sysling, the project leader, Sjoerd Kompier and Henrike Vellinga, the junior researchers who brought the project to life, and Karien Lahaise, who was my first point of entry into Naturalis' archives during this time period.

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Author's Note on Geological Time Periods

Throughout this thesis I use the terms 'Mesozoic' and 'Cenozoic'. Their similarity to one another has prompted some feedback that elaboration could be helpful, which I will now take the time to provide. Geological ages today are split into three eras; the Paleozoic, the Mesozoic, and the Cenozoic. I find it easiest to think of these three as 'before the dinosaurs', 'the dinosaurs', and 'after the dinosaurs.' I never use the term 'Paleozoic', but I do sometimes refer to the 'Carboniferous' (358 MYA - 299 MYA). The Carboniferous is one of the geological periods of the Paleozoic era, and refers to a time period from which most fossil fuels date, hence the 'carbon' in Carboniferous. Images of swampy, fern covered landscapes are most often invoked for this geological period.

The Mesozoic (250 - 66 MYA) is frequently called the Age of Reptiles. From this time period we get dinosaurs, such as the famous *Tyrannosaurus rex* and *Triceratops horridus*. Accompanying the dinosaurs were pterosaurs, flying reptiles, and a whole host of aquatic reptiles, from the dolphin-like *Ichthyosaurus* to the long necked *Plesiosaur*, and of course the terrifying *Mosasaurus*, which will feature heavily in this thesis. I will specifically refer to the Cretaceous period (145 MYA - 66 MYA) several times, as it is from this period that the *Mosasaurus* and other aquatic lifeforms excavated from Limburg are dated. The distinction I use in this thesis is that Mesozoic is used to refer to general Mesozoic life forms, and Cretaceous is used to specifically refer to Limburgian material.

The term Cenozoic (66 MYA - the Present) is often called the Age of Mammals. There are two relevant periods I refer to. The first is the Tertiary period (66 MYA - 2.58 MYA), which is now an obsolete term. I defend its use in this thesis, however, as it was the historical term used in relevant source material. It is exclusively used in reference to fossils excavated from the East Indies, which were often given the Tertiary dating by nineteenth and early twentieth century paleontologists. The second period is the Pleistocene (2.58 MYA - 11,700 years ago), which we often refer to as the 'Ice Age'. It is from this period that we get some of the most famous megafaunal mammals such as mammoths and wooly rhinos, and the period in which *Homo Sapiens* evolved and began to migrate around the world.

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Introduction

Tyrannosaurus rex: Ambassador of Paleontology

Plate 2: *Trix the Tyrannosaurus,* on display at Naturalis Biodiversity Center, Dino Era gallery. Photograph taken by author on 22 May 2024.

The *Tyrannosaurus rex* in its most popular depiction, the 1993 film *Jurassic Park*, represents something altogether terrifying and something incredibly impressive. It is nature in a primal, even monstrous, form. Nature is, in western mythos, a sort of "great other" against which civilization can be defined.[1] This relationship is hierarchical; civilization possesses the unique capacity to dominate nature. The *T. rex*, and indeed all dinosaurs, represent an upheaval of this order. Attempts to control or dominate them come at a heavy cost, in their media appearances. *Jurassic Park*'s *T. rex* also represents an impressive scientific reconstruction. Dinosaurs and other extinct prehistoric animals occupy a space somewhere in between the 'real' and the 'imaginative', a quality that they possess innately across contexts due to the nature of how they now exist. The material conditions of the fossil, such as its geological age and the animal it represents, are what might be called real. Paleontologists operate in the real space to reconstruct these animals. It is in popular or artistic reconstructions that the imaginative, what I might call the resulting structures based on the real, breathes life into the remains. *Jurassic Park* invested substantial resources into reconstructing dinosaurs as accurately as possible according to paleontological knowledge at the time. The end result is dinosaurs that occupy 'real' and 'imaginative' spaces, and achieve a contextual symbolism of nature's indomitability via its representation in the film's narrative.

But what happens when a *T. rex* is placed in a representationally scientific context? While there are multiple contexts that claim to scientifically represent the extinct natural world, the natural history museum is the most relevant in which context to analyze the meanings of fossils.[2] The natural history museum is an institution built around the display of 'real' natural objects to create a space in which the 'imagination' of visitors can reconstruct the natural world on the basis of the museum's modes of representation. This lends itself almost intrinsically to the analysis of paleontological material. Museums are far from value free institutions.[3] Natural history museums are especially interesting, as their claim to represent value-free scientific information allows them to efficiently carry and hide subtextual ideological narratives.[4]

I have used the *Tyrannosaurus* as something of an ambassador to introduce the topic at hand: the meaning of fossils in natural history museums. The hold this species has had over our imaginations makes it quite ideal for such purposes. I now turn to a particular specimen, "Trix," to introduce the case study: Naturalis Biodiversity Center, located in Leiden, the Netherlands. Trix was excavated from Montana in 2013, and

[1] Bruce A. Campbell, "Natural History Collection" in *The Curation and Care of Museum Collections*, eds. Bruce A. Campbell and Christiaan Baars (London: Routledge, 2019), 120.

[2] Other contexts would include documentaries, encyclopedic books, or paleontological publications. All three play with the overlapping spaces of real and imagination to bring dinosaurs to life. Documentaries and encyclopedic books place the emphasis on the 'imagination' in terms of representing extinct animals. While the 'real' forms the foundation of their knowledge, the process of resurrecting dinosaurs for more 'popular scientific' consumption ultimately buries the fossils on which the imaginative reconstructions are based. The latter is concerned almost exclusively with the "real," and typically for the consumption of paleontological specialists.

[3] This has been the understanding of museologists since, at least, Dillon Rippley's *The Sacred Grove* (1969).

[4] Ludmilla Jordonova "Objects of Knowledge: a Historical Perspective on Museums," in *the New Museology,* edited by Peter Vergo (London: Reaktion Books, 1989), 22-40, 24-25.

has been on permanent display since 2019.[5] The labels around the display detail known facts about the species, but also some particularities of the specimen, such as that Trix appears to have suffered a nasty jaw infection, leaving a hole in the skull. The clear function of the display is to both impress visitors and to impart knowledge upon them.[6] However, there are two details in what I have described that warrant some brief attention. First, the name 'Trix' is derived from Queen Beatrix, imparting a distinct national flavor on the specimen. Second, the fossil's excavation from Montana means it was extracted from former Indian Territory.[7] Trix is not just a vessel for scientific information, but also makes a claim at being Dutch scientific heritage via her nickname and by being situated in a Dutch national institution. This supersedes, and even erases, any heritage claim that might be made upon the specimen by Indigenous Americans. Whether or not there would be legal standing for such a claim at all is explored by Lawrence Bradley in *Dinosaurs and Indians*, for my purposes it is enough to acknowledge that it is not a topic broached by Trix's display at Naturalis.[8]

Trix comes with a variety of meanings. As a *Tyrannosaurus*, she invokes the primal fear and dominion of nature over man that has been symbolically attached to the animal via popular culture. As an artifact named after a Dutch monarch displayed at a national institution, she is also an implicit piece of Dutch heritage (importantly, this is not the same as legally being defined as 'heritage'), and an artifact representative of systems of extraction made possible by European colonialism. As a paleontological specimen, her existence between the 'real' and 'imagined' makes her a powerful tool to carry such meanings, especially within the context of a national natural history museum. The research question of this study is thus: what were the meanings of paleontological displays and collections at Naturalis and its predecessor institutions? This question is intentionally broadly framed, so that it may encompass the totality of the history of Naturalis' paleontological question, and interact with multi-layered political, scientific, and cultural contexts the Netherlands has gone through throughout this time period.

A very brief overview of the history of the relevant institutions is in order here, to introduce the three institutions and their historic timeframes. In 1820, Willem I founded the *Rijksmuseum van Natuur Historie* (RMNH), which fell under the directorship of Leiden University staff. The museum's geological and paleontological departments were largely neglected until 1877. The RMNH split into two institutions around this time, with the geological and paleontological collections moving into the newly formed *Rijksmuseum van Geologie en Mineralogie* (RGM). The RGM went on to curate the de facto national paleontology collection for the following 100 years, until 1984. At this time, it once again reunited with the RMNH to form a single comprehensive Dutch national natural history museum, under the new name *Nationaal Natuurhistorisch Museum* (NNM). The name Naturalis was unofficially in use as early as 1998. It was not until 2010 that the museum's name officially became *Nederlands Centrum voor Biodiversiteit*.

[5] "1 miljoen bezoekers oog in oog met T. rex: Naturalis 65 miljoen jaar oud fossiel brengt wetenschap dichterbij," Naturalis.nl, last accessed on 23 August 2024, URL: https://www.naturalis.nl/over-ons/1-miljoen-bezoekers-oog-in-oog-met-t-rex-naturalis-65-miljoen-jaar-oud-fossiel-brengt.

[6] Naturalis Biodiversity Center, *De Big Five van Educatie : Leren Bij Naturalis Diversity Center* (Leiden: Naturalis Biodiversity Center, 2015), 5.

[7] I use the term 'Indian Territory' in reference to the historic usage of the term.

[8] The system of claiming items as heritage by the erasure of other narratives is most extensively discussed in section 2.3, dealing with the Java Man.

Only two years later, in 2012, the current name *Naturalis Biodiversity Center* became the official name, dropping the explicit reference to being a national institution.

The remainder of this introduction has three more aims. First, I will expand upon the analytical value of museums as the ideal context for analyzing hidden meanings of paleontological collections. This framework will be helpful to understand the second aim; to offer an overview of the fairly young area of research this study engages with and the position it takes therewithin. Fossils have been analyzed for their wider metaphysical implications for human existence, for their scientific value, and more recently for the role they have played in historicizing and characterizing nations. Finally, I will return to the research question and discuss the relevant areas raised and the division of the subsequent chapters.

Science and Museums: Analytical Framework

The analytical framework in which this study is set is museological in nature. Specifically, it finds itself using the 'new museology' that emerged during the cultural turn and opened the doors to critical analysis of museums and moved away from the idea of museums as neutral free vessels for objective information. This framework is helpful for contextually placing fossils in museums. *New Museology* (1989) was the term coined by Peter Vergo in his edited volume of the same name to describe this movement in museological studies. Where 'old museology' was embedded in rational thought, new museology sought to critically reflect on the underlying political and social functions behind museum display and collection.[9] There are four main points to consider; 1) that museums act as gatekeepers of legitimate knowledge; 2) that this knowledge is, via spatial organization, used to convey explicit or implicit ideologies; 3) the social function of such ideologies is to civilize the masses; 4) and a political function of such ideologies was the justification of colonialism, the implications of which echo into the present.

On the first point, when discussing museums as legitimizers of knowledge, it is helpful to briefly articulate what exactly is meant by 'legitimate knowledge'. For this I turn to Frederick Barth's conceptualization of knowledge. He saw knowledge as a system with three core components; 1) the corpus of assertions made by such knowledge systems; 2) the medium of communicating these assertions; and 3) the social structure in which knowledge is used.[10] When viewed as such, science becomes the signifier for the western knowledge system that arose out of rationalism and was made global by colonialism. Barth himself identified science as a system that legitimized its knowledge assertions both by its ability to accurately measure reality, but also by the social dynamics within the institution those assertions were made at, and the inter-institutional dynamics of these institutions.[11] Museums, viewed in this light, are institutions that transform mundane objects into interesting objects, and legitimize the scientific knowledge claimed to be drawn from these objects.

Museums draw their ability to legitimize scientific knowledge from the historical mechanisms from which they developed. One key item is their scientific staff, in the nineteenth century these were usually learned

[9] Peter Vergo, *The New Museology* (London: Reaktion Books, 1989), 4.

[10] Fredrik Barth, "An anthropology of knowledge," *Current anthropology* 43 (2002) 1-18, 9-10.

[11] *Ibid*.

gentlemen of upper classes. Another is their proximity to other institutions that exert legitimate power. Take for example the fact that the RMNH was originally founded by royal decree, tying the museum directly to the monarchy and its political power. The RMNH was further strongly tied to Leiden University, and located in the same urban center of Leiden. This geographically situated the museum in direct proximity to other institutions that serve to produce legitimate scientific knowledge. The physical architecture of museums also invokes an aura of legitimization. Huibert Zuidervaart pointed to the similarity and occasional occupation of religious buildings such as churches or monasteries by museums and universities. This allowed such institutions to appropriate the pre-established acceptance of churches as sources of legitimate knowledge.[12] Dillon Ripley even likened museums to palaces through their use of high class materials such as marble.[13] Museums, in becoming legitimizers of truth claims, did so by becoming a display of elite culture closely tied to other religious, political, and scientific institutions.[14]

The upper-class origins of the museum often materialized in contempt for lower-class visitors, despite their discourse as democratizing knowledge by being publicly accessible. Museums often placed artificial limits on who could visit museums by having restrictive opening times and high entry fees.[15] Some museums treated their visitors almost contemptuously.[16] Of course, this story changed over time. In the 1930s museums began to actively pursue a working class audience, in part made possible by post-WWI expansions of worker's rights and the increased free time and disposable income they had.[17] After the 1950s, museums entered a phase of commercial overdrive, constantly updating and reforming to keep up with each generation's new demands for museums.[18] The importance of these developments lie in museums attempting to live up to their stated public function of being publicly accessible knowledge.

On the second point, it is important to emphasize that the knowledge created by museums is almost entirely based on the display of objects. Tony Bennett's *Birth of the Museum* (1995) argued that it is in the ordering of the chaotic natural world via placing these objects in relation to one another that all-encompassing ideological narratives can be hidden. This process of ordering the world runs parallel to the stated *raison d'etre* of science.[19] More than simply relationally organizing items, museums compress time into a spatial organization, which has the potential to shatter any imagined boundaries set by

[12] Huibert Jan Zuidervaart, "Academische Schouwplaatsen en hun Collecties," in *Universitaire Collecties in Nederland: Nieuw Licht Op Het Academisch Erfgoed*, editors Monquil-Broersen, Tiny, Ellen Stoop, Judith C.E. Belinfante, Peter Rothengatter, and Stichting Academisch Erfgoed (Zwolle: Waanders, n.d.), 11-20, 11-16.

[13] S. Dillon Ripley, *The Sacred Grove: Essays on Museums* (New York: Simon and Schuster, 1969), 39.

[14] Tony Bennet, *The Birth of the Museum: History, Theory, Politics* (London: Routledge, 1995), 22.

[15] Charles Saumerez-Smith, "Museums, Artifacts, and Museums" in *The New Museology*, edited by Peter Vergo (London: Reaktion Books, 1989), 6-21, 7.

[16] Ripley, *The Sacred Grove*, 42.

[17] Graham Black, *Museums and the Challenge of Change: Old Institutions in a New World* (Abingdon, Oxon: Routledge, 2021), 24.

[18] Black, *Museums and the Challenge of Change*, 21.

[19] Bennet, *The Birth of the Museum*, 2, 18.

national-time, of course dependent on the nature of the organization's composition.[20] The knowledge museums create is represented as universal. Ludmilla Jordonova argued that natural history museums are especially adept at this due to the fact that their objects, being branded as 'scientific', come pre-packaged as objective fact.[21] Any resulting ideological structures hidden in the museum's displays are very effectively hidden.

The ability of museums to this derives from the ability of visitors to narrativize and imagine.[22] When objects are placed next to each other, their invisible connections are made visible.[23] This is not only dependent on the dictations of the museum, but also on the visitor's ability to construct their own meanings and create a fantasy of the past using the objects on display.[24] It is important to view the visitor not just as an object to the museum's constructions, but also as a subject with their own tools and assumptions they project onto the museum displays they view. One of the most important tools visitors have is the expectations visitors have when visiting a particular type of museum.[25] A national natural history museum carries with it both the expectation of containing nationally as scientifically important and relevant information. Studying the visitor's experience poses a challenge for historical research if the correct sources are not available. Ideally, one would have access to visitor books where brief thoughts are left by visitors upon concluding their visits, but unfortunately no such sources survived for the museums in study. An alternative method available is the utilization of critical discourse analysis, as done by Yongguang Zou *et al* in their study on the Min-taiyuan Museum.[26] I have taken the excellent explanation of critical discourse analysis from Ian Parker's *Discourse Dynamics* (1992). Discourse should be seen as textual, and anything can form a part of that text, including objects. This text is both historically and institutionally situated, a quality that causes discourse to reproduce the power dynamics that allowed it to be created in the first place.[27]

On the third point, One of such functions was a socially constructive one. Museums were, via their communication of scientific ideas, also a tool to "impart a correct spirit" on its visitors.[28] New museologists would hold that such a correct spirit is civilized in nature, and therefore museums serve as a top-down dictation of how one should behave to be civilized (that is: inquisitive and scientifically

[20] Bennet, *The Birth of the Museum*, 186.

[21] Jordanova, "Objects of Knowledge" in *The New Museology*, 24-25.

[22] Peter Vergo, *The New Museology*, 3.

[23] Bennet, *The Birth of the Museum*, 35.

[24] Jordanova, "Objects of Knowledge" in *The New Museology*, 25.

[25] Susan A. Crane, "Memory, Distortion, and History in the Museum," *History and Theory* 36, no. 4 (1997), 44-63. 46.; Jordanova, "Objects of Knowledge" in *The New Museology*, 24.

[26] Yongguang Zou, Honggen Xiao, and Yong Yang, "Constructing identity in space and place: Semiotic and discourse analyses of museum tourism," *Tourism Management* 93 (2022): 104608.

[27] Ian Parker, *Discourse Dynamics: Critical Analysis for Social and Individual Psychology* (London: Routledge, 1992), 6-20.

[28] Richard Owen, "On the Extent and Aims of a National Museum of Natural History" in *The Emergence of the Modern Museum*: *An Anthology of Nineteenth-Century Sources*, editor Jonah Siegel (New York: Oxford University Press, 2008), 231-236, 234.

minded).[29] This spirit is further distinctly national in character. The museum was considered a sign that the museum had helped to awaken the nation and make it aware of itself through the imparting of scientific knowledge.[30] George Brown Goode's *The Principles of Museum Administration* (1895) makes the case that only enlightened peoples and civilizations were capable of creating and sustaining museums.[31] Museums were tied to the creation, and sustenance, of nations that had an intellectual character capable of supporting civilization, which can be contextually read as the implication that non-civilized peoples would be incapable of such feats.

That brings me to the fourth and final point made by the new museologists: the colonial implications of the didactic power held by museums and their collections. Modern museums emerged in a Western Europe fully immersed in colonialism, and it was even in part due to colonialism that European collections could grow to the sizes that they did.[32] There are two interrelated didactic functions that emerge when museums are placed in the analytical context of colonialism. The first relates to the aforementioned nation-building function of museums. As only civilized peoples are conceived as capable of maintaining museums, museums became not just nation-building exercises, but expressions of colonial justification. Museums exist to protect extracted scientific material, because the colonized have no ability to properly care for their own heritage and history, as Western colonial discourse would have it. This idea ties heavily into ongoing conversations about repatriation and other means of community-oriented engagement with colonially extracted objects.[33]

The second didactic function, which very much springs from the first, concerns the erasing of non-scientific knowledge derived from objects. As science is a system of knowledge that legitimizes itself via both its ability to measure reality and by the social dynamics of institutions, knowledge systems that do not follow scientific methods or originate from legitimate scientific institutions, are considered illegitimate. As museums are fully immersed in the universalist language of science, all 'illegitimate' knowledge is erased from the museum context, and from the visitors' experience.[34] When it comes to paleontological displays, taxonomic phylogeny or stratigraphic age tend to be the main explicit scientific frameworks determining curatorial decisions. The cultural importance that paleontological material had outside of this framework is lost.

[29] Bennet, *The Birth of the Museum*, 24.

[30] Thomas Greenwood, *Museums and Art Galleries* (London: Simpkin, Marshall and Co., 1888), 34.

[31] George Brown Goode, *The Principles of Museum Administration* (York: Coultas & Voulans, Exchange Printing Works, 1895), 7.

[32] Lipke B. Holthuis, and C.H.J.M. Fransen, *1820-1958 : Rijksmuseum van Natuurlijke Historie* (Leiden: Nationaal Natuurhistorisch Museum, 1995),7 .

[33] Clifford, James. *Routes: Travel and Translation in the Late Twentieth Century* (Cambridge, MA: Harvard University Press, 1999), 188-190.

[34] As Toyin Falola would put it; colonized peoples are robbed of their human dignity by this process of hiding non-scientific narratives. See; Toyin Falola, *Decolonizing African Knowledge: Autoethnography and African Epistemologies* (Cambridge, United Kingdom: Cambridge University Press, 2022), 21.

Deep Time Nationalism in Literature

The meaning of paleontological specimens and their meanings in the context of the history of science is a relatively new topic. collections, displays, and specimens in museums are a relatively new subject in both museological and cultural historical studies. Martin Rudwick's *The Meaning of Fossils* (1976) is the foundational text of this particular topic. Rudwick correctly identifies that it was only in the context of western scientific development that paleontological material came to be recognized as the remains of ancient worlds that completely recontextualized humanity's place in the history of life and earth.[35] These ideas concerned all-encompassing questions and theories of time. Rudwick's core purpose with the text was to write the history of how paleontology emerged as a discipline, and in this he was greatly successful. The acknowledgement that paleontology came to be in a specific cultural and historic context, opened the doors to further analysis of fossils outside of the purely disciplinary context.

Importantly, the way in which Rudwick characterizes fossils as belonging to deep time and being thus able to answer questions about the histories of life and the earth, allows for a re-reading of a point made by Bennett: "... led to these universal histories being annexed to national histories as, within the rhetorics of each national museum complex, collections of national materials were represented as the outcome and culmination of the universal story of civilization's development."[36] Bennett was not referencing deep time artifacts here, but the characterization of 'universal history' can be applied to deep time history, under the moniker of science's universalist claims. As a result, deep time artifacts, even if they represent transcendent ideas about the nature of life and earth, can be appropriated into national narratives if placed in the appropriate context.

In the United States, where paleontology could be said to have its heartland, based on the sheer diversity, quantities, and qualities of the fossil material found there, the explicit link between deep time and national-time first emerged.[37] Paul Semonin's *American Monster* (2000) argued that the American Mastodon became an integral part of the mythos of America's 'wild west'. Just as the west was characterized as untamed, wild, and ripe for the exceptional and brave Americans to colonize, Mastodon fossils became representative of this idea.[38] There is an older tradition of deep time artifacts being tied to the U.S.'s character, into which Semonin's work fits.[39] Stanley Hedeen's *Big Bone Lick* (2009) further demonstrates how Mastodon remains played into, not just the American national character, but also into

[35] Martin J.S. Rudwick, *The Meaning of Fossils: Episodes in the History of Palaeontology* (2nd ed. New York, Folkestone: Science History Publications ; [Distributed by] Dawson, 1976), *preface*. See also Rudwick's later publication where these ideas are heavily elaborated upon; Martin J. S. Rudwick, *Earth's Deep History: How it was discovered and why it matters* (Chicago: the University of Chicago Press, 2014).

[36] Bennett, *The Birth of the Museum: History, Theory, Politics*, 76-77.

[37] This is true in the anglosphere world. The Spanish and Portuguese speaking world has a robust history of paleontological collection, and stronger legal frameworks to protect such than what can be found in the anglosphere world. Unfortunately I am limited by language and cannot adequately bring relevant literature into conversation here.

[38] Paul Semonin, *American monster: How the nation's first prehistoric creature became a symbol of national identity* (New York: New York University Press, 2000), 14.

[39] Cécile Roudeau, "The Buried Scales of Deep Time: Beneath the Nation, Beyond the Human… and Back?" *Transatlantica* 1 (2015, 15 December): 6, last accessed on 9 February 2024. URL: http://journals.openedition.org/transatlantica/7455.

generating paleontology as a truly American science.[40] Hedeen does not ignore the Indigenous position, and dedicates a chapter three to Indigenous perspectives on the Mastodon. It is an important step, and allows for the Mastodon to occupy both an object important to the development of American paleontology and to Indigenous culture.[41] That the United States would open the floor to the deep time nationalism of paleontological material is not exclusively due to the paleontological material to be found within its borders. Since at least 1992, unofficial heritage claims to paleontological material have been made by Americans.[42] More recently, Stanley Totten of the Geological Society of American, nominated both the *Tyrannosaurus rex* and the American Mastodon to be legally defined as national animals.[43]

While paleontology today has a strong American face, it also has long European roots. Hugh Torrens, in "Politics and Paleontology," remarked "... the *invention* of the dinosaurs [...] was entirely English."[44] Torrens' argument is that Richard Owen, the first to coin the term 'Dinosaur' in 1842, was doing so from a distinctly English perspective and partially in reaction to radical French ideas from individuals such as Georges Cuvier.[45] Gowan Dawson's *Show me the Bone* (2016) and Ilja Nieuwland's *American Dinosaur Abroad* (2019) both find transatlantic cultural areas in which paleontological animals find a fertile ground for taking hold. Dawson points to the paleontologists' reputation as detectives, citing moments American and British authors such as Artur Conan Doyle and Emily Dickinson used paleontologists as analogies for remarkable detective work.[46] Nieuwland's book takes the famous "Dippy" *Diplodocus* skeleton cast formerly displayed in the entrance hall of the Natural History Museum of London, as his main case study, and finds in the 1890s a time of transatlantic obsession with the grandiose new inventions of the industrial revolution to be a cultural setting in which Dippy's cast fit perfectly as an impressive feat and display of scientific progress.[47] While the works of Dawson and Nieuwland build their cases around transatlantic cultures, Nieuwland does emphasize the unique characteristics of the U.K. and the U.S.A., namely the prominence of the press, to still stress that Dippy effectively forms a segment of late nineteenth Century British (and American) culture.[48] It is important to realize that although paleontological material may be

[40] Stanley Hedeen, *Big Bone Lick: The Cradle of American Paleontology* (Lexington: University Press of Kentucky, 2008), *xviii*.

[41] While the chapter is a great foray into non-western perspectives on fossils, it is not much of an epistemological upheaval of western history writing. All sources used by Hedeen are western and textual in nature, second-hand copies of the oral traditions behind the myths: *Ibid.*, 20-30.

[42] Doug Kirby, Ken Smith, and Mike Wilkins, *The New Roadside America : The Modern Traveler's Guide to the Wild and Wonderful World of America's Tourist Attractions* (New York: Simon & Schuster, 1992), 28.

[43] Stanley M. Totten "Nomination of T.rex (Tyrannosaurus rex) for National Fossil Reptile and Nomination of the American Mastodon (Mammut americanum) for National Fossil Mammal" in *GSA Today* (May 2022), 54.

[44] Hugh S. Torrens, "Politics and Paleontology: Richard Owen and the Invention of Dinosaurs" in *The Complete Dinosaur*, edited by M. K. Brett-Surman, Thomas R. Holtz, and James Orville Farlow (Second edition. Bloomington, Ind.: Indiana University Press, 2012), 55-85, 55.

[45] *Ibid.*, 58-59.

[46] Gowan Dawson, *Show Me the Bone: Reconstructing Prehistoric Monsters in Nineteenth-Century Britain and America*. (Chicago: University of Chicago Press, 2016), 14.

[47] Ilja Nieuwland, *American Dinosaur Abroad: A Cultural History of Carnegie's Plaster Diplodocus* (Pittsburgh, Pa.: University of Pittsburgh Press, 2019), 7.

[48] *Ibid.*, 8.

narrativized as a piece of national heritage, it remains an object whose interpretation relies on cross-cultural transfers.

Patrick Anthony's brilliant "Making Historicity" (2021) broke new ground in this concept. Anthony used the discovery of German Cave Bear fossils and how these were used to construct a deep time narrative of Germany. The result is an almost seamless transition from the German landscape and its deep time geological temporality, to the German nation and its human and national timeframe.[49] Where previous literature had eluded to the potential of paleontological material to form a cohesive part of a national narrative, Anthony's study represents the first time this narrative is projected into the past.

The notion that paleontology as a study is reflective of enlightenment values and scientific methodologies traces back to Rudwick's seminal work. From there, researchers have found fossils to have the capacity to form parts of national experiences, as with Semonin's Mastodon or Nieuwland's *Diplodocus*. In the latter case, this national experience is embedded in transatlantic post-industrial revolution cultures. The consequence this has for this study is that the paleontological traditions of the Netherlands need to be embedded in the relevant Dutch historical context. The study of paleontology itself similarly has been found by Hedeen, Torrens, and Dawson, to contain distinct elements of contemporaneous national characteristics. Where these studies all took 'snapshots' of time in which to analyze the extra-scientific meanings of fossils or paleontology, Anthony's Cave Bear is analyzed as an object with historicizing capacity. This study is a first attempt in combining the analytical value of museums with the cultural flexibility of fossils, to investigate how a national museum has gone about reacting to political developments and in doing so creating a distinct and unique national paleontological tradition.

The Meaning of Fossils in Naturalis and its Predecessors

Now that the broad analytical considerations and its position within the literature have been explained, I would like to return to this study's research question: what were the meanings of paleontological displays and collections at Naturalis and its predecessor institutions (henceforth collectively referred to as 'the Museums')? Answering this question requires first to understand the history of the institution. Chapter One will therefore discuss the national and international political processes that saw the creation of the RMNH and continued to exert influence on it throughout its multi-institutional history from 1820 onwards, effectively serving to politicize the institutional context of the paleontological objects and processes. The subsequent three chapters will continue this roughly chronological approach to analyze fossils in context of wider political developments of the Netherlands. In brief; these will be 1) consider the Museums' paleontological collections as existing within a network of Dutch colonial institutions; 2) consider the Museums' paleontological collections within the context of the widespread political movements of the twentieth century; and 3) consider the Museums' paleontological collections cultural setting increasingly gripped by Dinomania, a side effect of the Americanization of Dutch culture throughout the late twentieth and twenty-first centuries.

[49] Patrick Anthony, "Making Historicity: Paleontology and the Proximity of the Past in Germany, 1775–1825," in *Journal of the History of Ideas* 82, no. 2 (2021): 231-256, 232, 255.

Chapter One's focal question is: how was the RMNH politicized by its founding and what are the implications this has for paleontological material that passes through it? As articulated by the new museologists, museums are highly political and ideological in nature. In order to understand the ideological implications of the Museums, it is important to trace its political genealogy from its official founding in 1820 (and the earlier roots of this founding), to 1877, when the RMNH split its geological and paleontological collections. This period set the ideological tone and *raison d'etre* of the Museums, and justifies its position as a 'national' institution. I make use of Claude Wiesners' politicization theory that sees politics as action, or the act of marking 'things' as political, an action which moves 'things' into a political realm.[50] The RMNH is an explicit example of this, being founded via royal decree by Willem I, and heavily influenced by his royal predecessor Lodewijk I Bonaparte. Equally important here is the notion of crisis, used by Giuliano Bobba and Nicolas Hubé in their study of Covid-19's effect on politics. They see crisis as a threat to existing authority that opens the doors to change so that authority may be reaffirmed.[51] Both Lodewijk I and Willem I assumed the throne of a Netherlands in crisis, that being the chaotic years of the Napoleonic wars.

The subsequent three chapters zoom into the paleontological collections. The chapters are roughly chronological, but are largely tied thematically and will make significant temporal overlaps where relevant. The core question central to Chapter Two is: how did the paleontological collections at the RGM act as justificatory tools for Dutch colonial holdings? This question first requires conceptualizing the RGM itself as a colonial institution, which the chapter does by framing some of the practices of the RGM, by which is meant its collecting and hiring strategies, and its inter-institutional relations, through the analytical lens of politicization. Once the RGM is understood as politicized and colonial, the Museum's paleontological collections become tools supporting the colonial administration of the Netherlands. Importantly, this had major consequences for how the Netherlands viewed itself as the head of a colonial empire. The process of extracting paleontological material and displaying it in a museum transformed this material into objects to which the Netherlands could make heritage claims.[52] Part of this process includes the understanding that simply by placing an object within the context of a museum, a heritage claim is made upon that object.[53] This gives paleontological material two meanings; it is both a tool of colonial authority, as it is a tool of Dutch nation building. The collections of Eugene Dubois will feature as an important case study in the consequences of Dutch colonial extraction. The collection, consisting of dozens of fossil mammals from the East Indies and the famous *Java Man* skull cap, did not form an active part of the Museums' displays until 1989.[54] Their prominence and continued use as centerpieces in galleries opens the doors to discussions of heritage, and what these fossils mean for the colonial heritage of the Netherlands.

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[50] Claudia Wiesner, ed. *Rethinking Politicisation in Politics, Sociology and International Relations* (Basingstoke: Palgrave Macmillan, 2021), 22.

[51] Giuliano Bobba, and Nicolas Hubé, *Populism and the Politicization of the COVID-19 Crisis in Europe* (Cham: Palgrave Macmillan, 2021), 2-3.

[52] Michael S. Falser, editor. *Cultural Heritage as Civilizing Mission: From Decay to Recovery* (Cham: Springer, 2015), 1-2.

[53] Robert Shannan Peckham, *Rethinking Heritage: Cultures and Politics in Europe* London: I.B. Tauris, 2003), 2-3.

[54] John de Vos, "Jaarverslag 1988," from archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden, 1.

Chapter Three analyzes the effect the end of the colonial period had on the RGM's ability to begin creating a cohesive national paleontological tradition. Throughout the paper, I use the term 'nationalization' to describe the process of paleontological collections or displays being politicized in such a way that they contribute towards the creation of this Dutch paleontological tradition. It is a slightly clumsy term, as it is most often used to describe the action of moving industries under direct state control, but I justify its use for its grammatical and definitional similarity to 'politicization'. It is a specific flavor of politicization, where the paleontological material is made relevant to the nation specifically, not just politics generally. The research question of this chapter is: how were fossils given a place in the nation of the Netherlands? Section one of this chapter explores how the RGM set about creating a national paleontological tradition by both its collection and display strategies, partially done in reaction to the loss of the colonies. The creation of this tradition has two analytical sides: the base, or the material conditions of the paleontological discoveries, and the structure, the resulting ideological narrative borne from the displays made with the paleontological material. The structure itself has two consequences. The first is that the Netherlands is given a deep time point of genesis in the Ice Age, and the second is that Dutch paleontology as an intellectual tradition contains certain common elements.

There are two important case studies in the second section of this chapter. The first case study concerns the temporary exposition held at the RGM from 30 November 1984 to 17 May 1985 titled "*Nederland Uit Water*," which reconstructed the geological history of the Netherlands from the Carboniferous to the present. An important analytical tool in uncovering this process is Jon Fox's approach to banal nationalism, which relies on seeking moments where the general national experience is broken, requiring it to be reinforced.[55] A natural history museum, especially one concerned with the display of deep time artifacts, has a profound impact on the visitors' experience of time.[56] As such, I am treating the exposition as such a breach, given that it both aims to tell a national story while simultaneously displaying a deep time world very alien to our own. The second case study is all about the *Mosasaurus* and its bipolar heritage as claimed by both the RGM as a piece of Dutch national heritage, and by Limburg as a piece of uniquely Limburgian heritage. The director of the *Natuurhistorisch Museum Maastricht*, Wim Hupperetz, made a formal request in 2023 for the specimen's return to the Netherlands. The basis for the return of this specimen is that it was taken as war booty by French forces during the French Revolutionary wars. Hupperetz characterizing the fossil as an "icon of Maastricht and the Netherlands" points to both relevant heritage claims.[57] Ultimately, however, it was Limburg that would claim the *Mosasaurus*. Important about this case study is how it draws the lines between what does and what does not constitute the common national Dutch paleontological tradition, based on the material conditions of the relevant paleontological material.

[55] Jon E. Fox, "The Edges of the Nation: A Research Agenda for Uncovering the Taken-for-Granted Foundations of Everyday Nationhood," *Nations and Nationalism* 23, no. 1 (2017): 26–47, 27.

[56] Bennet, *The Birth of the Museum*, 186.

[57] Joris van Poppel and Thomas Kusters, "Maastricht wil 'Toetanchamon van de paleontologie' terug van Frankrijk," nos.nl, 6 December 2023, last accessed 24 August 2024. URL: https://nos.nl/artikel/2500612-maastricht-wil-toetanchamon-van-de-paleontologie-terug-van-frankrijk

The fourth and final chapter is centered around dinosaurs and their display history at the Museums, and how the incorporation of dinosaur displays had a transformative effect on the existing displays. The analysis here acts as something of a counterweight to the idea of nationalization and politicization of paleontology, by taking a second interpretive lens: that of the consumption of popular culture and the resulting financial incentives for museums to display dinosaurs. Dinosaur displays at the Museums lacked the national discourses that allowed the Museums to make heritage claims on other paleontological material, and of course were not found in the Netherlands. The immense popularity of dinosaurs represented by global dinomania further suggests that their inclusion within the Museums was motivated by the incentive of financial award (a popular attraction, after all, attracts visitors), more so than by nationalizing ambitions. The acquisition of dinosaur paleontological material and its display will also have had an effect on nationalized displays, as such attention will be paid to the interaction between these two analytical lenses. The central question of this chapter is: what is the meaning and effect of dinosaurs on Naturalis' paleontological displays?

Chapter One: Three Cabinets, Two Kings, One Museum

Before the RGM, 1795-1878

Chapter One sets out to analyze the historical and political circumstances of the creation of the Dutch national natural history museum in order to answer the question: how was the RMNH politicized by its founding and what are the implications this has for paleontological material that passes through it? Section 1.1 discusses the precursor of modern museums, cabinets of curiosities, and why these precursors already garnered the attention of the political sphere in respect to nation building, in a European context. This is important background establishing the broader cultural setting in which the founding of the first national museums existed, and serves to underscore the deep political roots of this operation. Section 1.2 turns the focus to the French Netherlands, and especially to King Lodewijk I, whose political goal of establishing himself as monarch over a cohesive Dutch nation spurred the creation of the precursor institutions to the RMNH and, later, the RGM. The chapter as a whole serves to justify the ability of later chapters to use both the institution and its collection as politicized material. Because the RMNH and all its predecessors would themselves constitute a political realm, the display and collection of paleontological material in this institution itself becomes a political act.[58]

1.1 Cabinets of Curiosities and the First Modern Museums as Nation Building Projects

Tracing the origins of museums takes us to 'cabinets of curiosities', privately owned collections often containing an assortment of bizarre and unusual curiosities. Such cabinets played an important role in the private lives of the upper-class learned gentlemen who owned them, serving both as reasons to enter discussion with one another and as a symbol of prestige.[59] At their inception, many modern museums formed their core collections from such a cabinet, or from the combination of multiple cabinets. There are two key differences between museum collections and the cabinets of curiosities; 1) these collections were not publicly accessible, 2) the objects were selected based on their uniqueness rather than their ability to be representative of larger object families. This first subsection will offer an overview of the role cabinets played in European museum formation and the position they held as extensions of upper class power, before elaborating on the condition of cabinets in the Netherlands.

Cabinets developed in the context of Europe and under the curation (I use the term informally, the curation of cabinets was not a professionalized career position as exists in modern museums) of upper-class learned man. Around the end of the eighteenth century, the political class began to take an interest in the acquisition of cabinets. One of the earliest European examples of this is the purchase of the mineralogical Leskean cabinet by Richard Kirwan for the Royal Dublin Society in 1792, using

[58] Wiesner, *Rethinking Politicisation in Politics, Sociology and International Relations*, 22.

[59] Bennett, *The Birth of the Museum*, 73; Ken Arnold, *Cabinets for the Curious: Looking Back at Early English Museums* (Aldershot: Ashgate, 2006), 14-15.

parliamentary funds.[60] This Irish example helps to illustrate some of the earliest links between national and intellectual development. The Leskean cabinet contained important mineralogical samples that served as evidence in one of the most heated debates of early geologists; whether land came from water (the Neptunists), or water from land (the Plutonists).[61] The scientific importance of such collections helps to explain why the Irish parliament heavily subsidized the purchase, as it in turn raises the intellectual and spiritual nature of the nation.[62] Through actions such as these, cabinets were politicized as parliaments increasingly involved themselves in intellectual life.

Cabinets of the curious were particularly numerous in the Netherlands, to the point that contemporaneous authors referred to the Netherlands as a "warehouse of curiosities".[63] The Netherlands had acquired these vast quantities of curiosities via the success of Dutch maritime trade, mercantile relations, and colonial holdings. Further, the publication of Carolus Linnaeus' *Systema Naturae* (1735) in Leiden helped to fuel the Dutch fascination with the organizing and categorization of natural history objects. This links the Dutch collection practices specifically to both colonialism and to the intellectual culture of the time. The French Revolutionary Wars changed the face of cabinets in the Netherlands: nearly all were looted or destroyed with the withdrawal of French forces following the collapse of Napoleon's empire.[64] However, it was this culture of collecting that Lodewijk I initially tapped into, and that Willem I attempted to restore, as the following subsection shall explore.

It was in the late 18th and early 19th century that the first national museums were being established across Europe, on the basis of what collections existed in cabinets. While governments already had a proven interest in collections via cabinets, this interest only grew with ideas surrounding the potential of museums to raise the nation's prestige and character due to their public character. Bennett argued that the development of museums was largely driven by government initiative. Museums became a tool for the government to impart some form of morality on the public, by creating a public space for knowledge in which its viewers were expected to take on certain characteristics and habits. This knowledge, having only recently formed an aspect of intellectual 'high' culture, would also have served the function of impressing the masses with the power of higher classes. Museums were, in effect, an attempt to 'civilize' the lower classes.[65] Thomas Greenwood in *Museums and Art Galleries* (1888) painted an almost idyllic scene of a man, having been inspired by the information contained within the museum's organization of the mundane according to scientific principles, walking through a park relaying this knowledge to his

[60] Sherra Murphy, *'The First National Museum': Dublin's Natural History Museum in the Mid-Nineteenth Century* (Cork, Ireland: Cork University Press, 2021), " Chapter 1: Enlightenment Roots, International Contexts".

[61] For more on this debate, see relevant chapters in: Henry Faul and Carol Faul, *It Began with a Stone: A History of Geology from the Stone Age to the Age of Plate Tectonics* (New York, N.Y.: Wiley, 1983).; D. R. Oldroyd, *Thinking About the Earth: A History of Ideas in Geology. Studies in the History and Philosophy of the Earth Sciences* (Cambridge, Mass.: Harvard University Press, 1996).

[62] Murphy, *'The First National Museum',* " Chapter 1".

[63] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 7-8.

[64] *Ibid.*, 7.

[65] Bennett, *The Birth of the Museum,* 19-22.

children.[66] This scene stood at the heart of upper-classes' conception of how the ordered view of the natural world contained within museums would trickle down across the nation.

But what is the underlying drive to civilize the lower-classes of the nation? This relates to the rise and expansion of the growing colonial enterprises many western European states were engaged in. For the nation to lay a legitimate claim over a colonial holding, that nation needed to be civilized, while the colonized subjects were 'uncivilized'. Goode drew a direct connection between museums and civilization, that it was only civilized nations that could sustain them.[67] In essence, the more intellectually enlightened the nation, the more 'civilized' it could claim to be. As Greenwood put it: "there are many signs that the conscience of the nation is at last awakened".[68] Even the act of collecting itself was purely the business of the civilized. As European colonial and exploratory efforts spread and extracted increasing amounts of natural specimens, the interest in natural history in the imperial heartlands continued to grow.[69] This all serves to 'white-wash' the act of colonial extraction. The whole system stands in service to the maintenance of national character, effectively self-reproducing the narrative that civilized nations have the right, and even a moral, scientific, obligation to dominate uncivilized nations via colonial networks.

In the Netherlands, the transition from Cabinets to Museums came at a time of serious political upheaval: the French Revolutionary wars. As French forces swept through Dutch cities in 1794-1813, cabinets of curiosities were claimed as war booty or purchased, and moved en masse to Paris, where the newly founded *Muséum national d'histoire naturelle* could house them. Unfortunately, many of these collections became scattered, mixed together, and stuck back together again throughout this process. The Netherlands further had a unique political composition as a republic of multiple provincial identities rather than a single, clear, national identity. Lodewijk I, in his attempts to unify the provinces, represented one of the first nation-construction projects in the region. The following subsection explores his strategies for doing so, and how these were continued under the first King of Orange, Willem I.

1.2 Constructing the Netherlands out of the *Cabinet du Roi*

Before Lodewijk I, the Netherlands was politically organized and behaved as a republic, not a nation-state.[70] In the scientific world, this is visible via the various provincial learned societies that emerged, such as the *Hollandsche Maatschappij der Wetenschappen*, or the *Zeeuwsch Genootschap der Wetenschappen*.[71] This stands in contrast to other European countries, where such societies often had a national character. Examples include the British Royal Society of London and the Royal Dublin Society, given a national character via titular proximity to the Monarchy, or the French *Académie Française*,

[66] Greenwood, *Museums and Art Galleries*, 26-27.

[67] Goode, *The Principles of Museum Administration*, 7.

[68] Greenwood, *Museums and Art Galleries*, 34.

[69] David Murray, *Museums: Their History and their use* (Glasgow: James MacLehose and Sons, 1904), 19-20.

[70] Bart Verheijen, *Nederland Onder Napoleon: Partijstrijd En Natievorming 1801-1813* (Nijmegen: Uitgeverij Vantilt, 2017), 103.

[71] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 14.

where the national character is directly implemented in its name. Lodewijk I's founding of the *Koninklijk Instituut* (the precursor to the *Koninklijke Nederlandse Akademie van Wetenschappen*) and the *Cabinet du Roi* in 1808 therefore represented the first scientific projects in the Netherlands enacted on the national level.[72]

The creation of the *Cabinet du Roi* and the *Koninklijk Instituut* fit into Lodewijk I's wider strategy of using culture as a nation-building tool, and were not the only initiatives appropriated by Willem I. Another example of this is the employment of painter Charles Howard Hodges to paint royal portraits, which both Lodewijk I and Willem I had done, as symbols of their legitimate royal power.[73] On top of seeking to create a single nation, Lodewijk I also sought to ensure he would sit at the top of this nation as a national king.[74] The *Koninklijk Instituut* was used to consolidate rule as a means to portray the country at peace while the rest of Europe was embroiled in war, seeking legitimacy through providing a sense of security and prosperity.[75] Frans Grijzenhout took a slightly different perspective in *een Koninklijk Museum* (1999), arguing that these nation building attempts really represented Lodewijk I attempting to co-opt Hollandic culture for the new national culture.[76] Nonetheless, it remains true that the creation of national culture was being spurred with Lodewijk I at its head. The imprinting of the terms *Koninklijk* and *du Roi* further emphasize this: Lodewijk I was effectively stamping the royal seal on the identity of institutions with the capacity to raise the intellectual character of the newly formed nation. In this way, a direct link was forged between the nation and the crown.

Although the Bonaparte dynasty would be short-lived in the Netherlands, its policies and actions towards creating a scientific nation for the Netherlands would find much continuity between it and the incoming Orange-Nassau dynasty. The *Cabinet de Roi* was renamed to the *s' Lands Kabinet van Natuurlijke Historie* in 1810, and in 1820 would become one of the three main collections to form the basis for the RMNH. Leo Brongersma specifically points to the drive of the newly crowned King Willem I to create a national institute of natural history, continuing the tripartite linking of the monarchy, the nation, and the intellectual character of the Netherlands.[77] The founding of the RMNH is directly tied to the political founding of the Kingdom of the Netherlands, and the royal family would remain influential over the museum. All these actions thus far have served to make the museum and its content explicitly political in nature.

The *Lands Kabinet* became, together with two other cabinets, the basis for the RMNH's collection at the museum's opening. These other two cabinets were the natural history collections already housed at Leiden

[72] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 14.

[73] Kikkert, Pierik, and Ros, *Lodewijk Napoleon*, 85.

[74] Verheijen, *Nederland Onder Napoleon,* 106-107.

[75] Kikkert, Pierik, and Ros, *Lodewijk Napoleon*, 183.

[76] Frans Grijzenhout and Rijksmuseum Amsterdam, *Een Koninklijk Museum: Lodewijk Napoleon En Het Rijksmuseum, 1806-1810* (Zwolle: Waanders, 1999), 19.

[77] Leo Daniël Brongersma, "Past, Present, Future," in *Rijksmuseum van Geologie En Mineralogie 1878-1978*, contributors G. E. de Groot, E. van der Wilk, and Leo Daniël Brongersma, and Rijksmuseum van Geologie en Mineralogie (Leiden) (Leiden: Rijksmuseum van Geologie en Mineralogie, 1978), 37-77, 43-44.

University, and the private cabinet of Dr. Coenraad Jacob Temminck, the first director of the RMNH. The natural history cabinet of the university was established in 1757. It would be greatly expanded under the university's second director, Sebald Justinus Brugmans, who further invested a great deal of energy in successfully protecting the university's collection from French Revolutionary forces.[78]

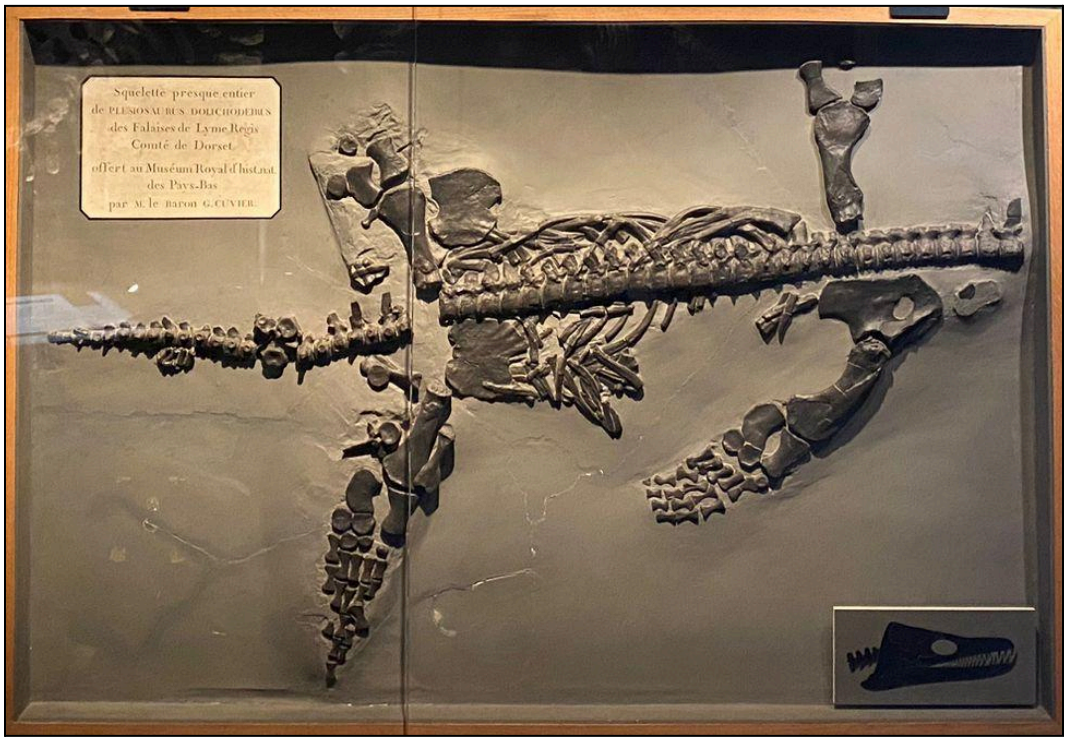

Plate 3: *Cuvier's gift Plesiosaur to the RMNH,* on display at Naturalis Biodiversity Center, Dino Era gallery. Photograph taken by author on 22 May 2024.

I bring attention to Brugmans as he would play an important role in the post-French Netherlands recovery of stolen natural historical objects. Willem I sent Brugmans to Paris to restore as many looted artifacts as possible, demonstrating again the importance the monarchy placed on establishing a national scientific character. While Brugmans was largely unsuccessful in restoring looted pieces, he *was* successful in negotiating trades. The effort was not especially celebrated by his contemporaries, but many of these traded specimens would prove scientifically valuable in the future.[79] Unfortunately, few of these seem to have been paleontological in nature. Cuvier and Lamarck, with backing of Alexander von Humboldt, kept most looted specimens for their work on comparative anatomy. The most well known specimen kept is the Mosasaurus skull, of which a plaster copy now exists in Haarlem's Teyler museum, while the original remains in the *Muséum national d'Histoire naturelle*. Cuvier would, eventually, gift a preserved *Plesiosaur* skeleton from Dorset to the RMNH. The heavy involvement of state and intellectual elite demonstrates the perceived importance of natural historical objects, including paleontological objects, in raising a nation's or institution's character. This was especially true for Willem I, who followed in Lodewijk I's footsteps in aiming to create an intellectual national character for the Netherlands.

[78] Brongersma, "Past, Present, Future," 38-40.

[79] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 12.

Willem I was highly aware of the link between national prestige and scientific development. Article five of the royal decree establishing the RMNH explicitly states that the institution was to be national in character. He personally enriched the collection on a number of occasions, including a bovine skull and a number of deer Antlers found in the Netherlands, in 1826.[80] Another important royal decree by Willem I was the establishment of the *Natuurkundige Commissie voor Nederlands-Indië,* of which the purpose was to oversee the extraction of natural resources from Dutch colonies in the East Indies. While this commission only existed from 1820-1850 (and only two of its eighteen commissioners would survive to return to the Netherlands), it was successful in the collection of vast amounts of resources for the RMNH. The museum would continue its extractive relationship with Dutch colonies until the end of Dutch colonial rule on the islands.

Temminck was succeeded by the head of the vertebrate department, Hermann Schlegel, in 1858. Under him, the state of the geological and mineralogical collections deteriorated significantly. His relationship with paleontological material is somewhat less clear. He did publish research on the *Mosasaurus* and the Cretaceous turtle *Allopleuron*, but discontinued his research once it produced great results and the owner of the material (Professor Jacob van Breda) wished to study the material himself.[81] Elte Beima, head of the mineralogical collection since 1850, and suggested to Schlegel in 1869 to create a separate paleontological department. This request was denied.[82] Increasingly Schlegel seemed to grow more hostile towards the entire mineralogical and geological departments. He cut funds, considered the collection irrelevant, and may well have been annoyed at the relative lack of progress made under Paulus van Hoorn (the department's first head).[83] The *Hoger Onderwijs Wet* of 1876, which mandated that all universities establish geology departments, saw Leiden University hire Karl Martin as the head of this new department. This also moved the geological and paleontological collections at the RMNH under Martin's care.

The consistent and heavy-handed involvement of Dutch state leaders, especially members of monarchy, turned the RMNH and RGM into explicitly political institutions. This process of politicization existed in a wider European context where such actions were believed to be legitimate nation building through the overall raising of that nation's intellectual character and prestige. The Netherlands was no exception in this, and perhaps required it even more so than similar European nations due to its status as provincial republic before Lodewijk I's reign. The end result is that, by the time the RGM split from the RMNH, the institution had been politicized by Dutch monarchs. Throughout the Museum's history, members of the royal family would continue to periodically appear at expositions or in the speeches by directors, continually interacting with this notion that the Museum is a political institution. This politicization served to move the RMNH into the realm of Dutch nation building, but also served as an important tool for the monarchs to legitimize their rule. For this study, this means that every collection effort and museum display is directly linked to the Dutch nation, whether implicitly or explicitly. The meaning

[80] Brongersma, "Past, Present, Future," 46.

[81] *Ibid.,* 81.

[82] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 52.

[83] Brongersma, "Past, Present, Future," 52-54.

fossils gained in such a setting is that they can be considered to belong to the Netherlands, or that the Netherlands is able to claim them as a form of intellectual heritage. Within this framework, it becomes possible to start attaching wider political meanings to fossils, as will be dealt with in the subsequent chapters. Chapter Two will see fossils as reflections of colonial justifications, chapter three will see various articulations of the Dutch nation through fossils, both in attempts to create a deep time history for the country as to create a cohesive Dutch paleontological tradition, and chapter four will offer a counter-weight to politicized narratives by exploring depoliticized and apolitical fossils.

Chapter Two: The Ancient World in a Colonial Network

The RGM from 1878-1945

When Karl Martin became director of the geological collection held at the RMNH in 1878, neglect had turned the collection into quite the unwieldy beast. The collection had been shoved into crates and boxes and stored away, utterly unorganized. A significant portion of Martin's work at the museum was simply organizing and cataloging the collection, all the while maintaining his duties as geology professor at Leiden University and while new specimens were coming in from overseas colonies.[84] In his 1878-1879 report Martin deemed it necessary to completely reorganize and relabel the collection from scratch.[85] During this reorganization Martin rediscovered a sizable collection of fossils collected by Franz Wilhelm Junghun in Timor several decades ago, a prelude to the extent of which colonial extractions would come to characterize the collection.[86] He would retire in 1922 at age 70, having his legacy as founder of Dutch East Indies paleontology cemented.[87]

Berend George Escher was appointed as Martin's successor, having practiced geology at the *Bataafse Petroleum Maatschappij* for some years earlier. Escher was, first and foremost, an educator, and spent significant time and resources on the development of the RGM's capacity to train the next generation of geologists. In part this will have been due to the rapid rise of multiple subdisciplines of geology, and the formalization of their methods and practices. Along with relatively new distinct subdisciplines, such as volcanology and petrology, older disciplines such as paleontology and geology were formalizing their approaches. Under Escher, the museum began to act as the *de facto* geology department of Leiden University.[88] It was a successful endeavor, by 1938 the Leiden University contained the biggest geology department in western Europe with 70 students.[89]

The sheer number of students at the museum meant that lack of space became one of the most pressing issues facing the RGM. In Escher's first annual report, he immediately began the calls to expand the building.[90] He specifically wanted a new wing that could provide sufficient educational facilities to the students, such as a preparatory laboratory and better lecture halls.[91] Further, opening a second wing and

[84] G. E. De Groot "A retrospect" in *Rijksmuseum van Geologie En Mineralogie 1878-1978*, contributors G. E. de Groot, E. van der Wilk, and Leo Daniël Brongersma, and Rijksmuseum van Geologie en Mineralogie (Leiden) (Leiden: Rijksmuseum van Geologie en Mineralogie, 1978), 3-26, 4-6.

[85] Karl Martin, "Jaarverslag 1878-1879," 1. from 3.12.14., box 167, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.

[86] *Ibid.,* "Jaarverslag 1880-1881," 5.

[87] "Dr. J. K. L. Overleden," *Leidsche Courant*, Leiden, 16 November 1942, 3.

[88] De Groot "A retrospect," 11.

[89] Brongersma, "Past, Present, Future," 58.

[90] Berend George Escher, "Jaarverslag 1922-1923," 2. from 3.12.14., box 167, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.

[91] *Ibid.*, "Jaarverslag 1925-1926," 2.

dedicating it to education would allow the entire current older wing to be dedicated to museum display and collection storage.[92] In 1930, Escher would get his way and a new wing was opened and available for use, despite some setbacks after the state temporarily withdrew promised funds.[93] The victory was short-lived. By 1937 Escher was once again calling for more space, to accommodate students, to properly display collections, and for storage space.[94] This is unsurprising, as the collection was being enriched by some 5,000 specimens annually.[95] It had gotten to the point where Escher bemoaned that they would never actually know the composition of the museum's collection.[96] In 1938, the RGM suffered a significant loss when about 5,000 guilders worth of gemstones, many from the Willem I collection, were stolen. Escher, ever on point, blamed the lack of space for secure storage.[97]

The Second World War was felt immediately at the RGM. In 1939, with cooperation of the Leiden Municipal government, the RGM's basement was cleared out and its cabinets and displays put into storage, turning the space into a bomb shelter that remained operational and always open until liberation.[98] Escher would leave the RGM during the war to go into hiding, alongside at least one member of staff and future director van Isaäk Martinus van der Vlerk. Gerth, who had worked at the RGM since Martin's time, was temporarily made director due to his German heritage. Two other wartime directors were appointed after Gerth. Upon liberation, none would return to the museum and Escher and van der Vlerk were able to return to their former positions.[99] Post-war restoration did not take long; within a year the basement was back to its pre-war functionality, and thankfully the collection was unharmed. The face of the Netherlands was, of course, forever changed by the loss of its colonies following Post-war decolonization, which is where Chapter Three will continue.

Chapter Two serves to discuss the relationship between the Dutch colonies and the RGM and its paleontological collections in order to answer the question: how did the paleontological collections at the RGM act as justificatory tools for Dutch colonial holdings? Section 2.1 first works to establish the RGM as a legitimate politicized institution. Where chapter one discussed the political nature of the RMNH's founding and its nation-building function in terms of being a tool for royal legitimization, this section shows the other side of this relationship. The RGM now relied on the monarchy to be legitimized as a true national institution, as well as a handful of other sources. Because the RGM's division from the RMNH was not clean or straightforward, it is necessary to spend some time on explaining why it is indeed still a legitimate national institution. Section 2.2 delves into the mechanisms of the relationship between the RGM and Dutch colonies, looking specifically at collecting, displaying, and researching paleontological

[92] Escher, "Jaarverslag 1927-1928," 2.

[93] *Ibid.*, "Jaarverslag 1928-1929," 2; De Groot "A retrospect," 13.

[94] *Ibid.*, "Jaarverslag 1936-1937," 3.

[95] De Groot "A retrospect," 11.

[96] *Ibid.*, 11.

[97] *Ibid.*, 14.

[98] *Ibid.*, "Jaarverslag 1938-1939," 2.

[99] Brongersma, "Past, Present, Future," 59.

material. These mechanisms formed a part of the colonial apparatus that justified colonial rule. Section 2.3 puts the consequences of these mechanisms to the test via the case study of Dubois' 'Java Man', and demonstrates strategies used by the NNM to claim the Java Man as Dutch heritage.

2.1 Legitimizing the RGM as Political and Intellectual Institution

Although 1877 marks the year in which the geological collection split from the RMNH, the actual institutional founding of the RGM is somewhat fuzzier. It was a rather slow process of Martin attempting to gain state approval to relocate the geological collection to its own building, followed by several years of moving, until finally the new museum could be opened. Martin was already referring to the collection as *Rijksmuseum van Geologie en Mineralogie* in his annual report of 1880-1881.[100] However, it was not until 1884 that plans for a new building were drawn up, and even then it took a small fire in Martin's office some years later to actually kickstart construction. Over ten years after Martin had adopted the title, the RGM's collection was finally in its own building in 1893. Two years later the museum was ready to be opened to the public.[101] It was not until 1904, however, that Martin finally felt fully comfortable calling the museum a *Rijksmuseum*.[102] With the prefix *rijks-* came the understanding that the institution held national significance.

While internally the Museum was understood as national, there is some evidence that Leidsche citizens did not necessarily agree. Searching through the online database 'Leiden Courant', containing digitized versions of Leidsche newspapers from 1760 onwards, reveals that the RGM was never actually referred to as such until 1931.[103] For most of its early history, the terms "*Museum van geologie- en mineralogie*" or simply "*Museum van geologie*" are used. By contrast, other national museums (the *Rijksmuseum* and the *Rijksmuseum van Natuurlijke Historie*) were referred to with the *rijks-* suffix. This indicates that the national character of the RGM was not immediately apparent. The insecurity of the RGM as both an independent institution of unclear nationalization, made it all the more important that the RGM participate in certain rituals and constructions to claim its national legitimacy. There are three episodes I would like to discuss that will have helped it to do this; an opening ritual, a practice, and an intrinsic quality.

The first was the visit of Queen Wilhelmina, together with Princess Pauline of Wurtemberg, effectively blessing the institution with monarchical approval. The Queen's visit was a heavily attended event by locals and a handful of officials. The Queen was evidently especially intrigued by the skeletons of a Cave Bear and Giant Elk (to which will be returned in the following chapter). After her visit, the Queen took a carriage through the city to be greeted by a handful of military officials at the train station, before departing.[104] Queen Wilhelmina herself possessed a sizable mineralogical collection, and was personally

[100] Martin, "Jaarverslag 1880-1881."

[101] De Groot "A retrospect," 9.

[102] Brongersma, "Past, Present, Future," 55.

[103] "Academische Examens," *Leidsch Dagblad*, Leiden, 21 January 1931, 1.

[104] "Het Bezoek der Koninginnen," *Leidsch Dagblad*, Leiden, 21 September 1895, 2.

interested in the science, which offers an explanation for the visit.[105] However, the manner of proceedings, from the spectators to the departing reception of several officials, directly links the RGM to a political event: the parade of monarchical power.

The second episode is a social justification, proving that the museum was performing its expected public service to the nation.[106] The RGM's opening times stood in contrast to this idea of public availability: it was only open on Wednesdays and Saturdays from 14:00 to 16:00. Limited opening times were entirely typical of nineteenth century museums, but it was a practice that stood in opposition to the expected public goals. A remedy the RGM used was to allow school children to visit in excursions outside of the regular opening hours.[107] This can speak to the genuine scientific educational goals of the museum, but also allowed the museum to imprint its ideological connotations on the younger generations, through relatively little effort on its part. From 1926 onwards, Escher massively expanded the times at which the collection would be publicly accessible, going from being open only on Wednesdays and Saturdays to being open daily.[108] Of course, German occupation temporarily reversed this trend. By 1942 it would only be open on Wednesdays. Of course, the shelter remained accessible at all times.[109] A museum, as a public institution, is able to generate its own legitimacy as such if it is publicly accessible.

The final important episode of legitimization was not a practice, but intrinsically built into the museum's geographic and architectural situation. The RGM's was built on *Rapenburg*, a prominent canal street in Leiden containing various important buildings to academia, including Leiden University itself. It was built in the old-holland style, which dates from the Dutch Golden Age.[110] The building, of course, needed to fulfill a number of basic requirements. First and foremost; it needed space. Space, or the lack thereof, is a consistent theme in the history of the geological collection, and would never be fully resolved until 2019. Another was to ensure the building would integrate well into the pre-existing style of Leiden, informing the choice to build in the old-holland style. The effect of these choices, however, gives the museum building itself a position of academic authority and enforces the idea that the knowledge within is legitimate. Consider its proximity to other similar institutions; the Hortus Botanicus, the *Rijksmuseum van Oudheden*, the Academy Building of the university, amongst others. Visitors are primed to accept the legitimacy of the knowledge from the context of the building itself.

This can be tied directly back to the connection between national pride and museums mentioned by Greenwood.[111] An article in the *Leidsch Dagblad* draws these links explicitly, claiming that the new building is justified and elevates the state of the geological collection to those of Belgium and Germany. It also notes that the collection has grown so rapidly due to donations from individuals operating in Dutch

[105] Brongersma, "Past, Present, Future," 55.

[106] Bennet, *The Birth of the Museum*, 22.

[107] *Leidsch Dagblad*, Leiden, 31 July 1897, 2.

[108] Escher, "Jaarverslag 1925-1926," 2.

[109] *Ibid.*, "Jaarverslag 1939-1940," 2.; "Jaarverslag 1941-1942," 2.

[110] "Gemengd Nieuws," *Leidsch Dagblad*, Leiden, 10 June 1892, 2.

[111] Greenwood, *Museums and Art Galleries*, 34.

colonies.[112] The colonies are, in this light, reduced to territories from which national pride is to be extracted in the form of geological samples, to be displayed in architectures of power in the academic heart of Leiden. This relationship is circular; as samples from the colonies enrich the collection, the status of its 'civilization' is raised and it has moral justification to continue its exploitation. The RGM itself was able to gain the legitimacy to take part in this via its 'royal baptism', via its public services (even when limited, exceptions for school children could be made), and via its geographic architecture.

2.2 Paleontological Material as Colonial Practice

Via these various legitimation strategies employed, the RGM was acting as a *de facto* national, colonial, and royal institute from its founding, and thus so too its paleontological collections became politically activated. The vast majority of this collection was, from 1877-1939, extracted from the colonies. The colonies provided multiple mechanisms of paleontological exploitation, such scientific expeditions which collected vast amounts of specimens for research in the Netherlands, and donations by colonial officials and institutions, which were often smaller in quantity, but exceedingly unique and valuable. Other important sources of fossils include an institutional network of contacts spanning from the United States to Japan (though predominantly European in composition), allowing the RGM to collect from colonial networks outside of its own. In this subsection the relationship between the colonial system of display and extraction, and the RGM as a research institution are explored.

2.2.1 Colonial Collection Strategies

Collection practices were deeply embedded in colonial networks. There were three main sources from which the RGM enriched its colonial collections. The first were geologists on expedition. Martin himself made two trips to the Dutch East Indies, once in 1892 (returning with 1063 molluscs), and again in 1910.[113] Other expeditionary scientists' and their collections include Louis Rutten, who donated his collections from trips to Java and Borneo, and Eugune Dubois who donated a number of vertebrate specimens 1889.[114] This remained common practice until 1941, when van Koenigswald and J. G. Coerman donated their collections after expeditions to Borneo and Java.[115] The extraction of geological samples from the East Indies to the Netherlands during scientific expeditions is one underpinned by no small amount of violence, and should be acknowledged.[116] Paleontologists also extracted from regions not explicitly under colonial rule, but with distinct and skewed power relations to the west.[117] The most prominent examples of this are a *Plesianthropus transvaalensis* jaw from South Africa, donated by Leo Daniel Brongersma (himself a frequent expedition leader into Dutch colonial holdings, most famously the

[112] "Leiden, 18 September," *Leidsch Dagblad*, Leiden, 19 September 1889, 1.

[113] De Groot "A retrospect," 7-8.

[114] L. Rutten's donations referenced in: Martin, "Jaarverslag 1911-1912," 2, and Martin "Jaarverslag 1913-1914," 1. E. Dubois' donations referenced in: Martin "Jaarverslag 1889-1890," 6.

[115] Escher, "Jaarverslag 1937-1938," 4-5; "Jaarverslag 1940-1941," 3; "Jaarverslag 1922-1923,"2.

[116] For more on indigenous labor in western knowledge production in the context of the Dutch East Indies, see: Thomas Niederer, Sjoerd Kompier, and Henrike Vellinga, various blogs published as part of the NWO 'Who did all the Work' project. URL: https://medium.com/@whodidallthework

[117] Escher, "Jaarverslag 1922-1923," 2.

1961 *Sterregebergte* expedition), and a series of dinosaur footprints from Massachusetts.[118] Collections donated by expeditionary scientists were often large, and allowed for stratigraphic or taxonomic research to take place and be published. Of course, producing research was a vital professional function of the RGM.

The second important colonial source for paleontological material were colonial officials. Johan Wilhelm van Lansberge, Governor-General of the Dutch East Indies from 1875-1881, donated an *Ichthyosaurus* skull in 1885-1886.[119] Controleur of Nias (a small island off the West coast of Java) E. E. W. G. Schroeder made two donations from 1907-1909.[120] Such officials also provided labor, resources, and assistance to expeditionary scientists.

The third and final colonial source were institutions and organizations operating in the East Indies. The *Koninklijke Natuurkundige Vereniging*, made a one time donation of a "very scientifically valuable collection."[121] But it was the *Mijnwezen in Nederlands-Oost-Indië* and the *Bataafse Petroleum Maatschappij* that made the majority of donations, almost annually contributing to the collection. In 1933-1934 they made an extremely valuable donation of a *Homo soloensis* skull in 1933-1934.[122] Many pre-war staff at the RGM also began their careers at the *Mijnwezen*, such as van der Vlerk.[123]

The fossils acquired through means of colonial extraction serve two functions, with one very important consequence. The first function is to be displayed at the RGM, contextually moving these fossils from their place of extraction to a western scientific national institution. The second is to research these fossils at this institution, allowing for further extraction of scientific knowledge. Consequently, the material is 'colonized' and the knowledge derived from this material becomes European, or Western, knowledge, despite being based on material half a world away. Visitors, researchers, and others interacting with the displays or research outputs would have done so in a Dutch, not an indigenous, context, turning the museum (both as research institution and as a science communicator) into a legitimizer of Dutch colonial power. The RGM's collection strategies were explicitly colonial, and the claiming of this material as Dutch heritage directly played into colonial narratives.

2.2.2 Displaying the Colonial

Under Martin, the collection was split across the building's two halls in four galleries. In one, were both the 'Mineralogy & Geology' and the 'Geology of the Netherlands' collections, and in the other the 'Paleontology' and 'Geology of the Dutch East Indies' collections.[124] All galleries, except for the

[118] Escher, "Jaarverslag 1938-1939," 5.; "Jaarverslag 1939-1940," 4.; "Jaarverslag 1941-1942," 2.

[119] Martin, "Jaarverslag 1885-1886," 4.

[120] *Ibid.*, "Jaarverslag 1907-1908," 2.; "Jaarverslag 1908-1909," 1.

[121] *Ibid.*, "Jaarverslag 1885-1886," 3.

[122] Escher, "Jaarverslag 1924-1925," 3.; "Jaarverslag 1928-1929," 5.; "Jaarverslag 1933-1934," 4.

[123] De Groot, "A retrospect," *Scripta Geologica* 13.

[124] Martin, "Jaarverslag 1894-1895," 1.

Mineralogy & Geology gallery, contained paleontological material. The Geology of the Netherlands gallery likely contained both various Pleistocene mammal remains as Limburgian cretaceous remains, while the 'geology of the Dutch East Indies' would have contained Tertiary invertebrate fossils and a handful of mammalian fossils.

The colonial collections underwent multiple revisions during this period. The first was in 1901-1902. By this time the collection had grown substantially and included several specimens from the Dutch West Indies as well. As such, the colonial collection was reorganized to include specimens from both the East and West Indies.[125] This speaks to the importance of integrating colonial material into the public displays of the museum. Another reorganization occurred due to the sudden increase in space afforded by the 1930 expansion. The bottom floor now contained the geology and mineralogy collections, with space being made in the geology collection for displays devoted to volcanology and physical geology, reflecting developments within the broader geological science.[126] The top floor, which had formerly been where research took place, now contained space for the paleontology collection, and the geology of the Netherlands and geology of the colonies collections were unified into one 'Geology of the Netherlands and Colonies' collection.[127] In 1939, when a cabinet for vertebrates from the East Indies was made.[128]

Escher understood very well the importance and social functions of displays at museums.In the 1951-1952 report he stressed the importance of display in scientific museums, precisely because science plays such an active role in the public's everyday lives.[129] The annual reports further frequently discuss updates and reorganization of the displays, reflecting the fact that there was always thought going into what was being displayed, and why it was being displayed. Escher was also actively thinking about the nature of what was on display; he seemed to want to impress people, and that displays did not necessarily have to be the most scientifically relevant.[130] Escher's understanding of the social function of museum displays suggests that the frequent updates of the collection were done so intentionally as to best represent the colonial situation at the time. The composition of Dutch colonies enforced the composition of the scientific displays, becoming an echo of the colonial situation.

2.2.3 Research and Inter-Colonial Networks

Research at the RGM was an important tool in both attracting researchers from outside the institution, and in engaging with the colonial paleontological collections of foreign colonies. Martin's main published works at the RGM was the *Sammlungen des Geologischen Museum in Leiden*, a journal series published from 1887 onwards. Most of the research performed in this journal was based on colonial acquisitions. In turn, this attracted researchers like Utrecht's Louis Rutten and the French H. Louisville to study the

[125] Martin, "Jaarverslag 1901-1902," 1.

[126] De Groot "A retrospect," 13.

[127] Escher, "Jaarverslag 1932-1933," 3.

[128] *Ibid.*, "Jaarverslag 1938-1939," 2.; "Jaarverslag 1940-1941," 2.

[129] *Ibid.*, "Jaarverslag 1952-1953," 20.

[130] *Ibid.*

colonial collections.[131] Escher would restructure the journal into the *Leidsche Geologische Mededelingen*, at which point it lost its specifically colonial character. The ability of the colonial collection to attract extra-institutional researchers raised the legitimacy and prestige of the institution as a national research function, and further played into the inherent justifying and moral message of colonialism.

The colonial collection of the RGM also allowed for the RGM to expand its colonial network beyond Dutch holdings, allowing it to exist within an international context of colonies. A key mechanism for this was trade; the sheer size of the colonial collections meant that duplicates could be traded from other institutions.[132] English colonies in particular contributed to the collection of the RGM, with donations from Jamaica and Burma specifically contributing to the paleontological collections.[133] The United States should also be considered a colonial power in this respect, with its imperial metropoles located on the East Coast and its 'colonial holdings' being the decreasingly sovereign Indian Land.[134] Multiple fossils from the U.S.A. made their way to the RGM, including one series from "Dakota" (North or South is not specified), a state entirely carved out of Indigenous territory.[135] The RGM, at this point, existed in the context of a multi-institutional network of institutions extracting resources from their various colonial holdings, exchanging them with each other, producing and publishing their research, all acting to create a scientific culture that was inherently colonial.

The only non-Western contributors to the RGM's research were Mr. Yabe, who donated a series of Japanese fossils, and S. Yoshiwara, whose work Martin cites in the second volume of *Sammlungen des geo. mus. in Leiden.*[136] While this does somewhat decouple the 'western' geographically speaking (only somewhat, these are two geographic exceptions against dozens), this does happen in the backdrop of Japan having relatively recently earned the status of International power by defeating Russia in war, and starting to establish its own colonies in Korea. The presence of Japanese paleontologists in the RGM's network effectively bolsters the idea that the existence of this network serves as a legitimizer of colonial power structures via the production of knowledge.

The colonial system the paleontological material represents is as follows. First, material was extracted from the colonies by scientists, officials, or colonial institutions. Via research and cooperation with international colonial institutions, this process was politically justified. This extraction process was further justified to the public by displays, which underwent frequent changes and updates to reflect the nature of this process. The museum, as a politically and nationally charged colonial institute, held the authority to justify the state of colonialism. This will be further elaborated on in the following section,

[131] Martin, "Jaarverslag 1913-1914," 1.; "Jaarverslag 1916-1917," 1.

[132] De Groot "A retrospect," 8.; Escher, "Jaarverslag 1924-1924," 2.

[133] Martin, "Jaarverslag 1904-1905," 1.

[134] This view is taken in: Lawrence W. Bradley, *Dinosaurs and Indians: Paleontology and Resource Dispossession From Sioux Lands. Denver* (Colorado: Outskirt Press, 2014).

[135] For paleontological material from America, see: Martin, "Jaarverslag 1882-1883," 3.; "Jaarverslag 1895-1896," 2.; "Jaarverslag 1900-1901," 2. For the purchase from Dakota, see: Martin, "Jaarverslag 1897-1898," 2.

[136] For the donation by Yabe, see: Martin, "Jaarverslag 1908-1909," 1. For the citation to Yoshiwara, see: Karl Martin, *Sammlungen des Geologischen Reichs-Museums in Leiden*, vol. 2. (Leiden: Brill, 1916), 221.

asking the question of what mechanisms the Museums could employ to claim extracted material as Dutch heritage. This effectively represents an analysis of the consequences of this system of colonial justifications.

2.3 The *Pithecanthropus erectus* as Dutch Heritage?

Eugene Dubois announced his famous discovery in 1893, the skull cap of the *Pithecanthropus erectus*, or Java Man, which he held to be the "missing link" between man and ape.[137] This particular paleontological object was found in Java, by forced laborers, at a time when the hunt for the origin of humanity was at an all time high. The intellectual backdrop of this discovery meant that the item immediately rose to prominence, though Dubois' personality meant that, for a long time, the skull cap was effectively hidden from the public eye. When it did re-emerge, however, the Museums wasted little time in claiming the object as a piece of Dutch heritage. This section analyzes the nature of these attempts. First, however, it is important to understand the conditions in which this skull cap was found and why it became so important.

While Dubois is often hailed as the 'discoverer' of the skull cap, the term 'financier' might be more appropriate. Dubois was rarely present at the digsites, usually to be found at his residence studying the fossils after excavation.[138] The oversight of the excavation itself was left to Sergeants Kriele and de Winter, and the digging to forced laborers and, on occasion, locals. Conditions were miserable, with sickness frequently plaguing the Sergeants, and multiple laborers even perishing.[139] Kriele and de Winter, in their correspondence with Dubois, do not give much attention to the laborers, even when it was them who conducted most of the digging and made most of the discoveries. The only instance in which the Sergeants relay to Dubois *who* actually made the discovery, it was when they themselves had done so.[140] The real excavation process was, effectively, being hidden from the historical documentation left behind.

Around the time the discovery was made, Charles Darwin's *On the Origin of Species* (1859) had opened the doors to uncomfortable and heated debates about the origins of humanity, and whether we were subject to the same evolutionary mechanisms as animals were. The idea that humanity had evolved at all was controversial, but recent developments in the paleontological field meant that it was at least accepted that animals had evolved.[141] Charles Lyell studied the first neanderthal skull in 1856, though determined it was not an intermediary species between ape and man.[142] The 1861 discovery of the *Archaeopteryx* and

[137] Richard E. Leakey, L.J. Slikkerveer, Kenya Wildlife Service, Netherlands Foundation for Kenya Wildlife Service (Leiden), and Pithecantropus Centennial, *Man-Ape, Ape-Man: The Quest for Human's Place in Nature and Dubois' 'Missing Link'* (Baarn: Netherlands Foundation for Kenya Wildlife Service; Ambo, 1993), 11.

[138] Paulinus Cornelis Hendricus Albers and John de Vos, *Through Eugène Dubois' Eyes: Stills of a Turbulent Life* (Leiden: Brill, 2010), 14.

[139] Albers and de Vos, *Through Eugène Dubois' Eyes,* 10.

[140] '(Brief Collectie) MM774C-000058. Brieven 599-668.' Dubois Register. Naturalis., 611.

[141] Rudwick, *The Meaning of Fossils*, 231.; David Sepkoski and Michael Ruse, *the Paleobiological Revolution* (Chicago: University of Chicago Press, 2009), 17.

[142] Rudwick, *The Meaning of Fossils*, 243.

Compsognathus seemed to confirm the speculated link between birds and dinosaurs.[143] Owen Marsh also published his work on horse evolution around this time.[144] In the study of humanity's evolutionary origin, Dubois followed in the footsteps of Alfred Russel Wallace in believing that the East Indies was the most likely geographic point of origin.[145] This debate was incredibly heated. When Dubois' announcement was met with skepticism, he reacted by hoarding his fossils to himself and refused to let other scientists handle the material.[146] The Java Man would lose some of its relevance in the following years, as new evidence emerged about the African origins of humanity and Dubois moved onto new projects.[147]

There was a period of some fifty years in which the Java Man was, effectively, forgotten, before it came roaring back into the spotlight and was subject to multiple heritage claims by the RGM, NNM and Naturalis. In 1983 it made a brief appearance as the centerpiece of the temporary "*De Mens als Jager*" exhibition.[148] The exposition, and the accompanying booklet, was geographically centered on the Netherlands.[149] There was not an explicit heritage claim made to the Java Man in this exposition, only implicitly by placing the Java Man in the context of a Dutch institution about Dutch prehistory.

It is in the 1993 "Man-Ape, Ape-Man" temporary exhibition where the heritage claim is made strongest and most visible. By heritage claim I take to mean that an object is absorbed into national discourse by being integrated into that discourse, usually done through pre-established aspects of that discourse using national language to discuss the object in question. In this case, the strongest claim is made by the fact that Prince Bernhard of the Netherlands delivered the opening speech of the exhibition. In this speech, he refers to Dubois as a "Dutchman," and emphasized his importance to the Netherlands.[150] This places Dubois squarely in the discourse of the Netherlands, legitimized by a powerful national symbol in a Prince of the Dutch royal family.

The exhibition itself not only constructed the Java Man as an object of scientific importance, but also one of immense cultural significance. In doing so, it steeped the remains in western arts. Of the displays, four stand out in this regard. The first was the cinema and library together, where media featuring men, apes, and 'missing links' were shown. The purpose behind this room was to display how Western culture was

[143] Rudwick, *The Meaning of Fossils*, 250.; Robert Bakker, *The Dinosaur Heresies: A Revolutionary View of Dinosaurs* (Harlow: Longman, 1987), 21-22.

[144] Rudwick, *The Meaning of Fossils*, 252.

[145] Albers and de Vos, *Through Eugène Dubois' Eyes,* 7-8.

[146] Leakey, L.J. Slikkerveer, *et al.*, *Man-Ape, Ape-Man*, 15.

[147] *Ibid*., 113.

[148] "De Mens als Jager" exposition details, from archive: Exposition plans for "De Mens als Jager," "Edelstenen uit de levende natuur," and "Continenten in beweging," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[149] "De Mens als Jager" booklet, from archive: *Ibid.*

[150] Prince Bernhard, "Foreword," in Leakey, L.J. Slikkerveer, *et al.*, *Man-Ape, Ape-Man*, 15.

primed for the concept of a primitive human, and how ready popular culture was to absorb it.[151] The next two galleries to look at are the 'forest' and the 'art' galleries. In the former was displayed artistic reconstructions of 'wild men' from the middle ages, together with decorated Asmat and Sepik skulls from New Guinea. In the latter are contemporary art pieces, such as paintings by Zdeněk Burian.[152] Visitors would have walked from the 'forest' into the 'art gallery'. In spatially organizing the exhibit in such a way, the museum creates a sense of progress from the archaic arts of New Guinean indigenous people and medieval European people in a 'forest', the antithesis to civilization, to the refined arts of Europe today, organized in a classic European institution the 'art gallery'. These four exhibits together create a narrative whereby the Java Man is made first a piece of contemporary western culture with strong intellectual roots, and then geographically reaffirms this with the art gallery, demonstrating how the Java Man fits into higher forms of art. All this situated the Java Man in a distinctly Western cultural discourse, but by its introductory speech by the Prince, the Netherlands laid its stake on this piece of western heritage.

In the permanent displays of Naturalis, the Java Man skull cap continues to play a role as centerpiece. In the *Oerparade* of the building in use from 1998 until its reconstruction in 2019, the skull cap was visually separated from other displays by being placed in a glass cabinet. Most other fossil displays in this gallery were open. Not only that, but the glass was labeled as bulletproof.[153] In Naturalis' current organization, the skull cap is placed in its own room, surrounded by noise-dampening walls, truly creating a unique and singular space for the object. The skull is visually and metaphysically elevated to higher significance by being protected by something strong enough to stop bullets. One again, the reminder on a nearby label is made that it was the Dutch Dubois that discovered the skull, reasserting that it belongs to Dutch heritage.[154] The lack of serious mentions of the involvement of colonial military officers or prison laborers constitutes a hiding of the colonial narrative, which since decolonization has become a somewhat necessary trend in European nations making heritage claims over material extracted from territory once colonially held. The point here is not to suggest repatriation, or recommend it. This study is not the place to hold this discussion. What is important, however, is that the hiding of certain narratives plays into the ability of the Museums to make Dutch national heritage claims over the Java Man.

In claiming heritage, the 'forgetting' is just as important as the 'claiming'. By actively hiding aspects of the Java Man's history, competing claimants for the object as heritage are subdued. Consider as well the colonial network described in section 2.2. The Java Man represents an object extracted from the colonies in the name of science and scientific advancement. While the material was hidden away by Dubois for a long time, its re-emergence allowed it to be reclaimed into national consciousness as a piece of heritage situated in intellectual history, western culture, and belonging to the Netherlands by virtue of being attributed to a Dutch scientist, by the interest of a Dutch monarch, and by the display in a national institution. While not entirely forgotten, claiming the Java Man as Dutch heritage allowed the colonial

[151] Mary Bouquet, *Man-Ape, Ape-Man: Pithecanthropus in Het Pesthuis* (Leiden: Nationaal Natuurhistorisch Museum, 1993), 22, 30.

[152] *Ibid*., 66-68, 78-79.

[153] Nationaal Natuurhistorisch Museum. *Naturalis: Museum Guide*, 24. From archive: "drukwerk van tentoonstellingen, promotiemateriaal," straat 31-5, RGM, Naturalis, 1980-2000, Naturalis Biodiversity Center Archief, Leiden.

[154] "Collectie Dubois" label, in "The old Museum" website, Naturalis Biodiversity Center, URL: http://naturalis.nnm.nl/oerparade-3.

history of the object to be moved to the background.[155] The Java Man was, effectively, nationalized. The following chapter will analyze this process more deeply in context of the entire museum and its paleontological collection.

Plate 4: *The Java Man Skullcap,* on display at Naturalis Biodiversity Center, Early Humans gallery. Photograph taken by author on 22 May 2024.

[155] This reminds me again of Falola's words: Falola, *Decolonizing African Knowledge*, 21.

Chapter Three: Nationalizing Paleontology

The RGM from 1945-1984

With the Second World War concluded, Escher returned as acting director and swiftly picked up the call that, as was the case in the pre-war era and would be the case for quite some time still, there was not enough space for the museum to fulfill all of its functions.[156] Escher would, unfortunately, never achieve his goals for further expansion. He retired in 1955, handing the torch to van der Vlerk. In his first annual report he framed the problem as space in apocalyptic terms: either the museum shuts down its main exhibition space to use it as storage instead, which would risk collapsing the floor under the immense weight of the collection, or funds would have to be made available to temporarily rent out a warehouse.[157] The urgency of the situation was, it seems, at last felt, and in 1960 the move to a new building, the "*Heilige Geest of Arme Wees- en Kinderhuis*" on the *Hooglandse Kerkgracht*, began.

The move was a lengthy one, which neither van der Vlerk nor his successor P. C. Zwaan would see completed. It took until 1966 to move all the collections.[158] By this time Cornelis Beets had become the museum's director. In 1969 the first three galleries in the new building were opened to the public.[159] None of these galleries were paleontological in composition. Instead, the emphasis was laid on mineralogy.[160] By 1970 the new building had opened the remainder of its galleries: General Geology, Geology of the Netherlands, Historic Geology and General Paleontology, Petrology, and Volcanology, and a space for temporary exhibitions.[161] Ten years after the move began, the RGM was finally able to operate at full capacity again.

Beets would prove one of the most influential directors of the museum, though not always to the museum's benefit. Very importantly, he finally convinced the Leiden University Board, which still had final say on matters at the RGM, to give the museum its own budget. With this, Beets could expand the scientific staff quite substantially.[162] Unfortunately, he also got involved with a dispute between himself and the university board, ultimately leading to his dismissal in 1972, though he would not officially step down until 1977. Three *ad interim* directors filled Beets' shoes for the remainder of the museum's existence: G. L. Krol for a brief period in 1971, Brongersma from 1972-1976, and finally Zwaan again until at least 1983. While the museum continued to, publicly, operate as normal, the internal situation was,

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[156] Escher, "Jaarverslag 1949-1950," 1.

[157] Isaäk Martinus van der Vlerk, "Jaarverslag 1955-1954," 3-4. from 3.12.14., box 167, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.

[158] De Groot "A retrospect," 19.

[159] "'Geologie' Maandag Open," *Nieuwe Leidsche Courant*, Leiden, 29 January 1969, 3.

[160] "Geologie heropent poorten na vijf jaar op een kier: rijke collectie in voormalig weeshuis," *Leidsch Dagblad*, Leiden, 31 January 1969, 3.

[161] "Rijksmuseum G. en M. stelt meer zalen open," *Leidse Courant*, Leiden, 8 May 1970 , 3.

[162] Cor Winkler Prins, "Beets and the RGM," *Scripta Geologica* 113 (1996), 1-21, 2.

according to member of staff Cor Winkler-Prins, hectic. Order was not fully restored until late into Brongersma's era.[163] Zwaan made one more attempt at expansion in 1978, which would have seen the RGM purchase the buildings around the old orphanage, but the municipality declined, arguing that these buildings were built as homes and should remain so.[164] Not even after a full century of existence, did the RGM have the space it required.

By this time, the predominant belief amongst the staff and directors at the museum was that the RGM and the RMNH should reunite. This process began in 1984, but would take some time to finalize. A. Brouwer, the main curator and director of the paleontology department since 1949, already called for such a merger in 1963.[165] The belief was that one museum uniting the collections of the geosciences and the natural sciences, would far better demonstrate the entirety of natural history.[166] The University had even bigger ambitions; to also merge Leiden's *Hortus Botanicus* with the RGM and RMNH, though this ultimately did not come to pass.

Chapter Three investigates what happened to the museum's collection and display processes upon the conclusion of the Second World War and the end of the Dutch colonial period. The research question at its center is: how were fossils given a place in the nation of the Netherlands? This question is intentionally worded broadly, as the concept of 'the nation' is itself a very broad one. Subsection 3.1.1 reflects on some thoughts held by various directors of the RGM, with the principle message being that there was a serious will by the leadership to make a true national institution out of the RGM. Effectively, there was an active desire for the museum to be nationalized, and with it its collections. What the rest of the chapter will describe is effectively a three tiered 'national' paleontological structure. At the base of this structure, the first tier, are the material conditions of the paleontological objects excavated. Most important conditions are; 1) the location of excavation, being within the Netherlands, 2) the geological age to which the fossils belong, which in the case of the Netherlands is usually the Pleistocene or, if excavated from Limburg, the Cretaceous period, and 3) the animal represented by the material, usually mammals (if from the Pleistocene) or aquatic life (if from the Cretaceous). This material base and the mechanisms of its collection will be the focal point of subsection 3.1.2. This base of material supplied the museum with the tools required to build an ideological structure through its displays and organization, creating the second tier of paleontological structure. Here the organization of material in relation to other paleontological samples and in relation to the museum itself allowed the museum to construct a 'national paleontology', which will be the focal point of 3.1.3. It is in the construction of displays that the material qualities of the fossils, listed above, that the Dutch national paleontology is given form. The third tier of this construction are the ontological consequences of this organization. There are two of these. First, the 'Netherlands' as a geographic concept is given a deep time historical genesis.[167] The geological age of the fossil material will be especially crucial in this. In order to make sense of this ancient genesis, the museum and visitors both

[163] M. S. Hoogmoed ,"In memoriam of Prof. Dr. Leo Daniel Brongersma (1907-1994)," *Zoologische Mededelingen* 69 (January 1995), no. 15, 117-201, 189.

[164] "Rijksmuseum mag woning niet in gebruik nemen," *Leidsch Dagblad*, Leiden, 26 January 1978, 1.

[165] Brongersma, "Past, Present, Future," 55.

[166] *Ibid.*

[167] Anthony, "Making Historicity," in *Journal of the History of Ideas* 82, no. 2 (2021): 231-256, 232, 255.

utilize relational frameworks, either via visual medium or relativizing the past to the present. Second, a tradition of scientific engagement with paleontology is created for the Netherlands, which has a specific character relating to the Netherlands as it is. This might be called the Netherlands' intellectual heritage, specifically its scientific engagements with paleontological subject matter and objects.

Section 3.2 takes a number of episodes in analyzing the specific examples of this three-tiered nationalization process. Subsection 3.2.1, analyzes what symbols and strategies the RGM deployed in the temporary exposition *Nederland Uit Water* to investigate the discourse used by the RGM to create a relational framework allowing the readers to organize the past in such a way that helps to create a deep time history for the Netherlands. Finally, subsection 3.2.2 analyzes a moment in which the RGM *failed* to claim a piece of paleontology as national heritage: the debate over whether the *Mosasaurus* belongs to Limburg or to the Netherlands. I argue that the base qualities of the *Mosasaurus*, that it is exclusively found in Limburg (within the Netherlands at least, several specimens have been found across the globe), are fundamental in creating a situation in which a national structure could not be applied to it. As such, the RGM ultimately surrendered its attempts to claim the *Mosasaurus*.

3.1 From a Colonial institution to a National Institution

Escher's directorship saw several considerable contributions made to both the collection strategies and the composition of the displays at the RGM. Of course, one of the most important developments was the removal of the colonial collections and the subsequent reorganization of paleontological material into two collections. Another very important moment was the hiring of Brouwer, who would play an instrumental role in developing the RGM's new post-war collection networks.[168] On top of Brouwer, two other members of staff who would play roles in the changing face of the museum's collection strategies were hired; G. Kortenbout van der Sluys and G. E. de Groot, curators of the vertebrate and invertebrate paleontology collections, respectively.[169] The trend that Escher set in turning the museum's paleontology into something explicitly 'Dutch' was continued until the merge with the RMNH took place in 1984. The following section analyzes the national collection strategies (subsection 3.1.2) and the new national displays (subsection 3.1.3). In the latter, there were a number of displays that did not fit the mold of nationalization and serve as something of a counterweight, though these too serve a purpose for the museum as a didactic institution. First, however, I want to spend some time on Escher, van der Vlerk, and Brongersma, and some of their writings concerning the functions and responsibilities of a national geological museum.

3.1.1 Thinking about the Museum

Escher, van der Vlerk, and Brongersma all, at various points of their involvement with the RGM, articulated their thoughts on what role the museum should play within the Netherlands. They touch on a wide array of themes, two of which will be brought to light here. First there was Escher's desire to create a museum that stored and displayed geological material that stood separate from the museum as an

[168] Brongersma, "Past, Present, Future," 55.

[169] De Groot "A retrospect," 18.

educational and research institution.[170] De Groot, who of course knew Escher personally, saw this desire as primarily for the benefit of research and education.[171] However, it is also evident in Escher's actions and writings that he would have considered such a move as for the benefit of the museum's display functions. Van der Vlerk and Brongersma both discuss the importance of creating a truly national geological institution, emphasizing through various examples how a centralized institution would operate for the benefit of the geosciences in the Netherlands.

Escher's 1951-1952 annual report details the RGM's functions. As Escher saw it, there were three. First, it acted as a vast storage place for the collection. Second, it was a research institution where advancement in the geological sciences and educational training took place. Third, it was a publicly accessible collection.[172] In a later report, of 1952-1953, Escher explained some of his further thoughts regarding the importance of displays. He saw the ever-present influence of the natural sciences on everyday life as the main reason a scientific museum should strive to accurately represent developments in that science.[173] This opens up something of a contradiction in the fact that displays containing colonially acquired material had been removed. These specimens had, as seen by their extensive use in Martin's scientific publications, scientific value. Yet, their removal suggests that the underlying function of the museum, to reflect the political non-colonial status of the Netherlands, took primacy. A later report by van der Vlerk hints at a second important consideration for displays: they needed to be impressive in order to attract public attention.[174] Visitation is, of course, a key consideration for any institution hoping to achieve economic viability, but is equally important in attracting a wide enough audience for the museum's didactic messages to be imprinted upon via its displays.

Escher's 1952-1953 annual report also, for the first time, referred to the museum as a 'central scientific museum'.[175] This reflected the sentiments of later directors, who strongly desired to centralize geological research and collections in the Netherlands under the RGM. Van der Vlerk took aim at both amateur paleontologists and local museums. Of the former, he was concerned that fossil material would be improperly stored, thrown away, or damaged, by the lack of scientific expertise held by amateurs. Of the latter, van der Vlerk saw local museums as effectively diffusing skeletons across multiple institutions. For the sake of performing good research and creating impressive displays, more complete skeletons were desirable.[176] Brongersma shared van der Vlerk's sentiments regarding local museums. He even called for local geological museums to donate nationally important specimens, so that all research could be

[170] Escher, "Jaarverslag 1950-1951," 1-2.

[171] De Groot "A retrospect," 11.

[172] Escher, "Jaarverslag 1950-1951," 1-2.

[173] *Ibid.*, "Jaarverslag 1952-1953," 15.

[174] Van der Vlerk, "Jaarverslag 1955-1956," 2.

[175] Escher, "Jaarverslag 1952-1953," 15.

[176] Van der Vlerk, "Jaarverslag 1958-1959," 3-4.

centralized under the roof of the RGM.[177] Importantly, the centralization of Dutch paleontological material would serve to, effectively, monopolize the RGM's authority to narrative and nationalize Dutch geology.

In 1978, Brongersma hosted the centennial celebration of the RGM. In his opening speech he emphasized the "*oranje draad*" that ran through the museum's history. Indeed, the royal family has been deeply involved in the RGM, from its founding by royal decree, to Wilhelmina's visit, and to the many donations of valuable mineralogical specimens by Prince William IV, William V, and princess Anna.[178] A celebratory pamphlet used the slogan "*Het Huis van Oranje en de Geologie*," and emphasizes these royal collections.[179] Brongersma's main goal with this speech was to make the case for the RGM's reunification with the RMNH. This is another articulation of the desire for centralization, but one that takes into account the entirety of the natural sciences and not just the geosciences. In this light, drawing the link between the museum and monarchy serves as a move to politicize the museum, its functions, and make politically legitimate the claim that it would be better for the Netherlands to have a singular national natural history museum.

The important common thread through all of these various director's thoughts about the museum was the desire to create a centralized national institution, simply put to nationalize the museum and, thus, its collections. It would have the legitimacy to do this by virtue of housing every nationally significant paleontological specimen, and having the knowledge to properly preserve, study, and display such specimens. Every animal and its associated geological age would, therefore, belong to a nationalized structure, from which both a national genesis and intellectual heritage claims could be launched.

3.1.2 National Collection Networks

The first important layer to investigate is the paleontological base; national fossils and the means by which they were acquired. Both post and pre-war national collection strategies relied on two main sources: national institutions, and amateur collectors. The former became especially prominent in the post-war period, in particular branches of the *Rijkswaterstaat* as canals and waterworks were excavated across the country. Of the latter, the RGM invested a good amount of time and energy into cooperating with amateur collectors, allowing for a collection process that was, in some ways, a bottom-up construction of the national paleontological base.

Nationally based museums were some of the oldest donors of paleontological material. The *Rijksmuseum* and RMNH both donated several elephant and mammoth molars, tusks, and bone fragments.[180] Smaller local institutions also had a prewar history of donations, L. Bootszegel of the *Koninklijk Zeeuwsch Genootschap der Wetenschappen,* made several donations from 1923-1937, including the jaw of an

[177] *Ibid.*, 75.

[178] Brongersma, "Erosie ten Spijt: Rede Gehouden op 1 November 1978 ter gelegenheid van het Eeuwfeest van het Rijksmuseum van Geologie en Mineralogie," 13. From archive: Documents pertaining to "100 Jaar RGM," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[179] "100 Jaar Rijksmuseum van Geologie en Mineralogie te Leiden: Het Huis van Oranje en de Geologie," advertising pamphlet. From archive: *Ibid.*

[180] For donations by the *Rijksmuseum,* see: Martin, "Jaarverslag 1896-1897," 1.; "Jaarverslag 1897-1898," 1. For donations by the RMNH, see: Martin, "Jaarverslag 1985-1986," 2.; "Jaarverslag 1914-1915," 2.; "Jaarverslag 1920-1921," 3.

Elephas primigenius (today known as *Mammuthus primigenius*).[181] The *Rijkswaterstaat*'s first important discovery was the skull of an early *homo sapiens* in 1935. This skull was first classified as a *Cro-Magnon* (a term no longer scientifically relevant).[182] Public reaction to it was very interesting. It was dubbed as "*de eerste Nederlander*" by the *Provinciaal Dagblad.*[183] Very importantly, the specimen This effectively projects the Netherlands as a concept into the deep time past, creating a clear tradition of the Netherlands' deep time genesis taking place at some point in the Pleistocene. The donation by other museums demonstrates a wider understanding that paleontological objects should be moved to the RGM, but also very important are Bootzegel's donations. It effectively represents a willing incorporation by a provincial institution's collection into a national collection. The material quality of the donations is fundamentally similar to many other paleontological finds in the Netherlands: they are Pleistocene and Mammalian, even more specifically all Elephantidae. This made it compatible with the national collection.

Brouwer was instrumental in the expansion of this small institutional network, and was able to take full advantage of the country's post-war development to collect a large amount of paleontological material. He was specifically interested in increasing collections from the Netherlands.[184] He built his network of local institutions, such as museums, in part by regularly visiting fossil sites and potential fossil sites.[185] Increasingly, other members of staff would join in these efforts.[186] Primarily such fossils consisted of Pleistocene mammals, such as mammoths, rhinos, deer, and oxen. The *Rijkswaterstaat*, while excavating or maintaining canals, would increasingly come across and donate Pleistocene mammal specimens.[187] The consequence of these expanded domestic collection efforts was that a clear Dutch paleontological tradition was taking shape, based almost entirely on the discovery of Pleistocene mammals. This base of material began to create the foundation for a deep time historical genesis of the Netherlands; somewhere in the Ice Age.

A very brief mention of the Valkenburg *Mosasaurus* is relevant here, though subsection 3.2.2 will handle it more extensively. This *Mosasaur* was discovered in 1954, after which it became fragmented as several amateur collectors purchased bits and pieces of the animal for their personal collection or displays. Brouwer was just a bit too late in reaching the excavation site, though it was eventually possible to reassemble much of the discovery.[188] In subsection 3.2.2., the tension between the nation and Limburg over the heritage claims of the Mosasaurus will stand more central. For now, it is important to realize that although a national collection network, spearheaded by the RGM, was taking shape, its roots did not reach

[181] Escher, "Jaarverslag 1923-1924," 15.; "Jaarverslag 1933-1934," 3.; "Jaarverslag 1936-1937," 5.

[182] "Een menschenschedel van 20,000 jaar geleden. Bij opgravingen in Twente gevonden," *Soerabaijasch handelsblad*, Soerabaja, 13 July 1935, 17.

[183] "Schedel Van 20.000 Jaren Ouden Nederlander Gevonden," *Limburger koerier: provinciaal dagblad*, Heerlen, 03 July 1935, 2.

[184] De Groot "A retrospect," 15-16.

[185] Escher, "Jaarverslag 1949-1950," 5.

[186] *Ibid.*, "Jaarverslag 1952-1953," 24.

[187] *Ibid.*, "Jaarverslag 1931-1932," 5.; "Jaarverslag 1932-1933," 6.; "Jaarverslag 1933-1934," 3.; "Jaarverslag 1934-1935," 3.

[188] *Ibid.,* "Jaarverslag 1954-1955," 2.

evenly across the country. It opens the question to whether there really is a comprehensive *national* paleontology including both Pleistocene mammals found from Zeeland to Zwolle *and* the Cretaceous Limburgian fossils, or if these two paleontological traditions stand separately from each other.

A second national collection thread begun in the prewar era were private individuals, amateur paleontologists, who periodically made donations. One individual in particular, W. C. Klein, made three separate donations in the years 1910-1920.[189] Amateur paleontologists have always played an important role in the science, and equally has their role been debated throughout the years.[190] Van der Vlerk's hostility to amateur paleontologists was only aimed at those who, by hoarding behaviors, contributed to the diffusion of paleontological material across the country and standing in the way of the centralization of paleontological knowledge. Amateur collectors who worked with the RGM were well celebrated.

Kortenbout van der Sluys became another important member of staff working on collections within the Netherlands by developing a close relationship with fishermen in Zeeland and around the Dutch North Sea.[191] Other amateur paleontologists would remain important, of course, such as one G. de Ridder from Hedel, who would sell his private mammalian fossil collections to the RGM, but the fishermen truly take center stage here.[192] These fishermen, effectively incidental amateur paleontologists, often caught paleontological material by trawling. C. Keizer, a journalist for the *Leidse Courant*, described such collectors as fundamentally important to paleontological scientific development.[193] The collection of paleontological material by individuals created a new responsibility for the RGM, one pointed out by Brongersma, namely that the efforts of amateur collectors should be honored by their donated material being stored, researched, and displayed with respect.[194] Further, this represents a sort of 'bottom-up' nationalization of paleontological collection efforts. It was not just the RGM imposing a sense of a national deep time on the Netherlands, it was also a process made possible by the voluntary donations of amateur collectors understanding the scientific and national significance of paleontological material. The intellectual tradition of paleontology was, in the Netherlands, one directly linked to Dutch citizens.

Water also formed a fundamental aspect of Dutch paleontology, best represented by B. W. Schot, captain of the *ZZ 8* fishing trawler. Kortenbout van der Sluys and other members of staff would often accompany Schot on fishing trips, on which he pulled up some impressive specimens, such as the remains of an *Elephas meridionalis* (today known as *Mammuthus meridionalis*), and a *Cervus falconeri*, (an extinct deer).[195] Schot's efforts earned him the *Zilveren Museumpenning*, a royal distinction given to individuals

[189] Martin, "Jaarverslag 1909-1910," 2.; "Jaarverslag 1911-1912," 2.; "Jaarverslag 1919-1920," 8.

[190] N. Gary Lane,"Paleontology: The Academy and the Marketplace," *Journal of Paleontology* 63, no. 3 (1989): 259–60, 259.

[191] "Dijbeen uit de IJstijd," *De tijd: dagblad voor Nederland*, Amsterdam, 15 March 1967, 2.

[192] P. C. Zwaan, "Jaarverslag 1960-1961," 4. from 3.12.14., box 167, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.; Zwaan, "Jaarverslag 1962-1963," 4.

[193] C. Keizer, "De Noordzee was eens bewoond," *Leidse Courant,* Leiden, 25 October 1969, 13.

[194] Brongersma, "Past, Present, Future," 69.

[195] Van der Vlerk, "Jaarverslag 1959-1960," 4.

whose collection efforts were considered of national public service.[196] Importantly, this marks an acknowledgement by the Dutch state of the importance of amateur paleontologists in the creation of a Dutch paleontological tradition. The bottom-up process of nationalization is itself politicized, and its public face and the importance of water works, acknowledged.

In 1961, the Royal Dutch Shell Group funded an expedition into the Oosterschelde, led by Schot and Kortenbout van der Sluys. This trip gained a fair amount of media attention, in part due to a documentary made by Polygoon titled "Monster in de Oosterschelde".[197] For Shell, this came at a time the company was expanding to find new markets. The mapping of the Netherland's geological age via paleontological collection would help Shell to, potentially, locate areas in the country likely to contain natural gas or other fossil fuels. I draw attention to Shell's involvement here, as the ideological process of nationalization of the collection process was made possible by the expanded possibilities provided by the post-war development of the country's energy sector and public water works infrastructure.

While the expanding post-war state and amateur paleontologists certainly helped to lay the groundwork of a nationalized paleontological collection process, the RGM remained involved and interested in international specimens, especially where its research and education functions were concerned. De Groot spent several years in Spain, collecting a large amount of fossilized corals.[198] The collection efforts of students were equally important in gathering international material, usually from the United Kingdom or Germany. Brouwer led several excursions abroad to give students a chance at practicing fieldwork.[199] On top of this, international specimens would be acquired by the museum if they represented a significant development in paleontological sciences; chiefly specimens related to the understanding of evolutionary processes. In 1934-1935, the RGM purchased a case of the famous Berlin specimen of *Archaeopteryx*.[200] This specimen is so well known for its brilliantly preserved plumage, which caused it to be hailed as the missing link between theropod dinosaurs and modern birds.[201] In 1956-1957 another such specimen was acquired, this time the skull of a *Merychippus primus* (an extinct horse ancestor), donated by the American Museum of Natural History's Frick Laboratory.[202] Primitive horses such as these formed a cornerstone for Othniel Charles Marsh' research into evolution, becoming some of the most important in proving paleontology's scientific value towards this research.[203] I draw attention to these counter-weights of non-nationalized collection efforts to bring up the notion of 'denationalization'. Just as Wiesner argues that a process of depoliticization, the same is true of nationalized specimens. Chapter Four will take a

[196] Zwaan, "Jaarverslag 1961-1962," 3.

[197] *Ibid.*, "Jaarverslag 1960-1961," 5.

[198] Van der Vlerk, "Jaarverslag 1959-1960," 3.

[199] Escher, "Jaarverslag 1946-1947," 4.; "Jaarverslag 1952-1953," 26.; "Jaarverslag 1953-1954," 14.; Escher, "Jaarverslag 1954-1955," 7.; De Groot "A retrospect," 18.

[200] Escher, "Jaarverslag 1934-1935," 4.

[201] Bakker, *The Dinosaur Heresies*, 21-22.

[202] Van der Vlerk, "Jaarverslag 1956-1957," 3.

[203] David Sepkoski, *Rereading the Fossil Record: The Growth of Paleobiology as an Evolutionary Discipline* (Chicago: The University of Chicago Press, 2012), 19-21.

deeper analytical dive into the effects of such specimens, for now it is enough to know that the RGM was not purely collecting from Dutch sources.

These post-war years were characterized by a distinct nationalization of the paleontological collection process. Building on the threads initiated in the pre-war era, a network of national and local institutions and amateur collectors gave the RGM a geographically Dutch pool of fossils. This expanded base of national paleontological extraction would allow for the creation of a national paleontology via displays. Common traits shared by the material extracted were that they belonged to the Pleistocene, and represented Mammalian species, the ancestors and relatives of which we are still familiar with today. The collection process itself was directly linked to individuals, to water, the public development of water infrastructure, and the private energy sector.

3.1.3 Displaying the Nation in Paleontology

The biggest change the paleontological displays went through was the removal of the colonial collection, leaving just two galleries containing paleontological material; the Geology of the Netherlands and the Paleontology galleries.[204] Both galleries went through multiple updates and reorganizations to keep the displays up to date and to reflect the conditions of the collections. The fact that these updates were constantly happening suggests that the museum staff was always thinking about the museum's display functions. As discussed in subsection 3.1.1., Escher saw the display function of the museum as one of its most important, as a tool for educating the public on recent scientific developments.[205] At the same time, he also wanted to impress visitors.[206] Paleontological specimens, especially those specimens that are large and imposing in size, played key roles in this desire to imprint a sense of wonder on visitors. It is an idea that has continued into Naturalis' present day display approaches. The idea is that, once a visitor has been impressed, they are more open and curious about the science behind the display.[207] This idea can also be read as a tool to open visitors up to the ideology behind the display.[208] The role of centerpieces in displays are clearly important, just as their position within the gallery is. It is that organization which reveals the creation of paleontological narratives, be they national or a-national.

The prewar displays were especially characterized by a lack of space. Even after the 1930 expansion, paleontological material was still spilling out of the gallery halls, forcing fossil plants to be displayed in the hallways.[209] A minor reorganization occurred in 1934-1935, when the paleontology collection was shrunk somewhat. Deer skulls and antlers were removed from a cabinet and fixed to the wall instead, while a cabinet containing cretaceous fossils from Limburg was updated.[210] In 1940-1941 a cabinet for

[204] Escher, "Jaarverslag 1948-1949," 2.

[205] *Ibid.*, "Jaarverslag 1952-1953," 20.

[206] *Ibid.*, "Jaarverslag 1952-1953," 20.

[207] Naturalis Biodiversity Center, *De Big Five van Educatie*, 5.

[208] Bennet, *The Birth of the Museum*, 86.

[209] Escher, "Jaarverslag 1932-1933," 3.

[210] *Ibid.*, "Jaarverslag 1934-1935," 2.

fossil cetaceans was made.[211] These small updates and changes demonstrated the dynamic nature of paleontological collections and displaying. Constant considerations had to be made regarding what is scientifically important, what is impressive, and what space was actually available. The fact that plants were placed outside, in spite of the fact that such specimens can be incredibly scientifically valuable, suggests a prioritization of fossils that come with that ability to impress.

Plate 5: *Cretaceous Limburg Display Cabinet,* taken in 1935 by an unknown photographer. From Archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

Plates five and six are photographs of the Geology of the Netherlands display in 1935, and are great visual representations of the density of early twentieth century museum displays. Also of note are the presence of these centerpieces, standing out sharp from the cluttered smaller specimens surrounding them. Plate five shows a cabinet of Cretaceous fossils from Limburg, including a cast of the *Mosasaurus* skull claimed by French forces and a fossil imprint of an *Allopleuron* (an extinct sea turtle) shell. Pictured just above the skull cast is a painting by Faujas de Saint-Fond of the fossils excavation, which is always used in reference to the theft of the skull by French forces. Plate six shows a series of Pleistocene mammal remains, including the Cave Bear and Giant Elk, as well as a cabinet of mammoth molars in the bottom right, a mammoth tusk and other material to the left, and a smaller deer species behind. This gallery contained two thematically grouped fossils; national Pleistocene mammals and Limburgian Cretaceous aquatic creatures. If paleontology is thought of as representing a deep time genesis for the Netherlands,

[211] Escher, "Jaarverslag 1938-1939," 2.; "Jaarverslag 1940-1941," 2.

something a little bipolar happens due to these two themes. The Netherlands is both something that has an alien origin in the bizarre oceanic landscape of the Cretaceous, and something more recognizable in the exaggerated mammals of the Pleistocene. Concerning the intellectual history of Dutch paleontology, it is clearly characterized by the theft of the original *Mosasaurus* skull. The lack of displays concerning Dutch colonial extraction is telling: the gallery is moving on from the colonies and telling the geological history of only the European Netherlands.

Plate 6: *Member of staff works on the Giant Elk display, seen standing between a Cave Bear, Giant Deer, and cabinet of Mammoth molars,* taken in 1935 by an unknown photographer. From Archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

After the war, the 'Geology of the Netherlands' gallery seemed to have become quite popular. This popularity may be due its prominence in advertising: from 14 January 1957 to 2 July 1977, local newspapers used this gallery to promote the RGM under their "*Tentoonstellingen*" tab.[212] It is of course also possible that the reverse is true: that the gallery's popularity prompted newspapers to reference it. On display were specimens demonstrating 250 million years of Dutch natural history.[213] This gallery saw several important additions made before the move, perhaps also giving it a certain appealing dynamism. From 1956-1960 several important additions were made: the skull of a mux-ox, first of its kind from the Netherlands, the lower jaw of a cave lion, a near complete Tiglian *Cervus Rhenanus* (an extinct deer), several whale bones, and the aforementioned *Elephas meridionalis* and *Cervus falconeri* found by Schot.[214] A Dutch *Mosasaurus* jaw and tooth would later be added in 1960-1961.[215] The post-war years saw a beginning of a 'less is more' approach to museum displays, moving away from the more cluttered displays of previous eras.[216] In all, this gallery received both a good deal of curatorial as it did media attention. This would have been because the paleontological material base of this gallery was material excavated from the Netherlands, and nearly all of it represented Pleistocene mammals. As such, despite the continued involvement of the *Mosasaurus* in these displays, there was a clearly dominant face to the bipolar Dutch paleontological display.

Once the Geology of the Netherlands gallery reopened in the new Orphanage building, the 'less is more' approach to museum displays had continued to escalate. It was at this time important that a display could give visitors without any background or knowledge in the earth sciences a total overview of the scientific decisions and principles that went into the creation of the displays.[217] Both galleries were organized stratigraphically again, so that the visitor would view the older specimens first.[218] In 1978 an interactive area was created, where children could handle trilobite and ammonite fossils.[219] Bringing visitors so close to fossil material that they could actually touch and handle it represented a fairly large departure from classic modern museum displays; natural history had become something *real* that could be touched, turned, and felt. Dioramas were also included as a part of the displays, impressive landscape paintings bringing to life the past.[220] Both of these developments allowed for the deep time past to become visually and physically tangible. The distance between deep time and the present was collapsed. The collapse of the temporal distance brought with it a closeness that would allow visitors to, from their own ability to

[212] "Tentoonstellingen," *Leidsch Dagblad*, Leiden, 14 January 1957, 2.; "Tentoonstellingen," *Leidsch Dagblad*, Leiden, 2 July 1964, 19.

[213] Van der Vlerk "Rijksmuseum van Geologie en Mineralogie" in *Nieuws-Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond* (1957), 76-77.

[214] Van der Vlerk, "Jaarverslag 1956-1957," 3.; "Jaarverslag 1959-1960," 4.

[215] Zwaan, "Jaarverslag 1960-1961," 8.

[216] van der Wilk, "Presentation and Education," 19.

[217] *Ibid.,* 30.

[218] "Na jaren weer toegankelijk voor publiek; Geologie toont rijk bezit in nieuwe expositie ruimten," *Leidsch Dagblad*, Leiden, 13 May 1970, 10.

[219] van der Wilk, "Presentation and Education," 31.

[220] *Ibid.*

relate the visual similarities with the past to the present, more easily integrate the deep time past into their own understanding of Dutch natural history. Time compression is, in this way, an extremely effective tool in turning a national paleontological collection into something that can be historicized by visitors viewing the displays.

Compared to the Geology of the Netherlands gallery, the Paleontology gallery received little public attention, according to a report by van der Vlerk. An attempt to remedy this was to rebrand it as the 'History of Life on Earth' gallery. Cabinets were repainted, and two of the gallery's centerpieces, now the Cave Bear and a *Halitherium* (an extinct Sea Cow) skeleton, were polished and refitted. The entire gallery was reorganized stratigraphically, to emphasize the earth's geological ages.[221] The display labels in this exhibit were focused on conveying three key bits of information: the species name of the specimen, its geographic age, and its evolutionary relationship to other animals. As such, this specific gallery is a journey through time through the lens of evolution. Visitors were given a ten minute crash course of the history of life on earth.[222] In 1960-1961 this gallery gained a very important addition that transformed the meaning of the gallery: a cabinet detailing human skull evolution.[223] This rebranded gallery was clearly meant to be scientific in its display approach, but also telling is that van der Vlerk specifically highlighted the gallery's unpopularity. Was it the lack of impressive centerpieces that caused this gallery to suffer? Neither the *Halitherium* nor the Cave Bear were particularly large in stature. Or was it the lack of a clear reflection of national relational framework to which Dutch visitors could attach meaning? Given the organization of the two collections under Naturalis as of the writing of this paper, a combination of the two seems to be at play. The largest centerpieces were, for most of the RGM's history, contained in the Geology of the Netherlands gallery. This would change with the acquisition of several dinosaur skeletons in the 1990s. For a while all paleontological material was moved into one large exhibit, but currently in 2024 it has again been separated into multiple galleries, which subsection 4.2.2 will cover in more detail. For now, the most important message to take from the earlier History of Life gallery is that it did not fit within the national mold of the RGM at large.

This section has explored how the loss of the colonies fundamentally altered the collection process by, on one hand, geographically limiting the possibilities of paleontological extraction to the Netherlands mainland, while on the other hand, expanded infrastructure projects by the *Rijkswaterstaat* and close cooperation with amateur collectors in the Netherlands increased the possibilities of extraction. As the paleontological base changed, so did its resulting ideological structure. Changes to displays, via the removal of colonial collections, reflected these changes. In the new displays, a distinct national paleontology emerged, distinct from the 'history of life' paleontology. This national paleontology is not a unitary *thing* at this point, however. It remains somewhat bipolar, primarily enthralled by Pleistocene mammals, but very keen to adopt and incorporate the Mesozoic *Mosasaurus*. Modernizations in displays allowed for these national paleontological narratives to be conveyed with increasing effectiveness. Via

[221] Van der Vlerk, "Jaarverslag 1955-1956," 8.

[222] *Ibid.*, "Rijksmuseum van Geologie en Mineralogie," 75-76.

[223] Zwaan, "Jaarverslag 1960-1961," 18.

this process, the RGM was able to, not just become a non-colonial institution, but truly embody a 'national' institution.[224]

3.2 Dutch Paleontological Tradition

This section investigates in some more detail this notion of a three tiered 'national' paleontological structure. The previous section explored some of its general materializations, elements, and consequences. This section provides further investigation into Dutch paleontological tradition with two specific case studies. Subsection 3.2.1 covers the temporary exposition "*Nederland Uit Water.*" It investigates specific symbols and strategies used by the RGM to create a structure of deep time genesis for the Netherlands, as well as working to define and refine a number of elements belonging to Dutch paleontological tradition. Finally, subsection 3.2.2 settles the uneasy question of the *Mosasaurus* within the bipolar base of Dutch paleontology. It will conclude that, ultimately, the RGM and its predecessors relinquished the *Mosasaurus* from the national tradition, and that the animal became far more integrated into a unique Limburgian paleontological tradition.

3.2.1 "*Nederland Uit Water"* (1984-1985)

The *Nederland Uit Water* exposition ran from 30 November 1984 to 17 May 1985, with as its main theme demonstrating the full geological history of the Netherlands, especially emphasizing the country's relationship with water.[225] When thinking of this relationship, the maxim 'God created the World, but the Dutch created the Netherlands', springs to mind. It is an idea which the RGM itself also played with. An earlier exposition, "*Planten vroeger en nu"* (which ran from 21 November 1980 to 23 August 1981) had also made this claim: this exposition stated that the Netherlands did not have any natural landscapes, and was purely composed of *kultuurland*.[226] Yet, the actual ideas conveyed by *Nederland Uit Water* complicate this relationship. While they do acknowledge the long history of water control infrastructure built by people in the region, it is plate tectonics, glacial movements, and ancient life, all natural mechanisms that stretch far into the mists of deep time, that took the centerstage here. The result is an exposition that gives the Netherlands itself an intrinsic character, as a country that has a personified struggle against the sea, separate from the humans that inhabit her yet also congruent with their struggle.

The exposition was set up so that visitors could traverse the Netherlands from its oldest geological finds to its youngest. The oldest remains on display were carboniferous fern samples, which became carbonized due to oceanic pressure. Further paleontological remains show off the *Mosasaurus* and other cretaceous Limburgian fossils, followed by a series of large Pleistocene mammals, all thematically tied to an ice age. A short overview of animals includes bison, mammoths, hyenas, cave lions, and reindeer.[227] A to-scale cut

[224] I intentionally avoid the term 'decolonial', as colonially acquired specimens remained with the RGM, and would be hidden more so than acknowledged as colonial extractions, such as would happen with the Java Man analyzed in section 2.3.

[225] Document titled "Dia serie over de geologie van Nederland," an overview of exposition exhibits, from Archive: Exposition plans for "Nederland Uit Water," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[226] Display tag: "Nederland heeft geen natuurlijke landschappen meer," from Archive: *Ibid.*

[227] Document titled "Vitrine," from Archive: *Ibid.*

out of a mammoth skeleton was included, a fairly cost effective method of demonstrating the impressive size of these animals. The next set of animal remains were from the Tiglian, and include some notably smaller animals such as the deer, otters, beavers, and wolves. The final cabinet of animal remains in this sequence was from the middle ages. By and large, these were domesticated animals, such as dogs, cats, and goats, displayed together with a human skull.

There are three consequences of this display organization. The first is the construction of time. The first sequences, running from the Carboniferous to the beginning of the Pleistocene were represented only by ferns and the *Mosasaurus*. This compressed the pre-Cenozoic Netherlands to an extremely short experience, relatively stretching the Pleistocene. The visitors would have experienced the Netherlands as a largely Pleistocene item, in the context of the paleontological displays. A second consequence is derived from the *absence* of something: energy. In the older *Planten vroeger en nu* exposition, multiple references to the link between paleontology and the energy sector are made.[228] The lack of references to this in the *Nederland Uit Water* exposition, despite Shell's active financial involvement in collection efforts (see subsection 3.1.2), represents an attempt by the RGM to refine aspects of the Dutch paleontological tradition. Given the increasing popularity of sustainability throughout the 1980s, the decision to do so may have come from a desire to keep Dutch paleontology in line with contemporary values.[229] Third, a particular narrative is created by this sequence of displays, where animals get progressively smaller, ranging from the monstrous *Mosasaurus* and the giants of the Ice Age, all the way to the domesticated and subservient farm animals of the middle ages. The Netherlands was once wild, but it was tamed by the Dutch. As Jordonava points out, the use of natural history to convey these messages make them all the more effective.[230]

The centerpiece of the exposition was a large interactive map of the Netherlands, with buttons that could be pressed to highlight where certain geological resources or formations can be found.[231] The shape of the Netherlands is one that is repeated dozens of times throughout this exposition. The only framework in which this makes sense is a national one: geological formations and glacial sheets all but ignore the national borders of the Netherlands. The shape of the Netherlands is not a national symbol one often thinks of, but it belongs in a series of symbols that could be considered 'mundane' or 'everyday' nationalism, which would also include the use of the shape of the Netherlands in weather maps, the use of small Dutch flags on the corner of milk or butter carton, or even the 'NL' on European license plates issued in the Netherlands. If the representation of deep time is considered a 'breach' in the day-to-day experience of the Netherlands, the shape of the Netherlands' borders became a way to re-enforce the

[228] Display tag titled "Aardolie" and exposition plan document titled "Overzicht van het plantenleven in de geologische geschiedenis." From Archive: Exposition plans for "Planten Vroeger en Nu", straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[229] Peter Van Dam, "The Age of Interdependence Varieties of Sustainability in the Low Countries during the Twentieth Century," *BMGN - Low Countries Historical Review* 137, no. 4 (2022): 3–22, 4.

[230] Jordanova, "Objects of Knowledge" in *The New Museology*, 24-25.

[231] Han van Gessel, "Botten en Fossielen Kleuren Geologie," *de Volkskrant*, Amsterdam, 15 December 1984. From Archive: Exposition plans for "Nederland Uit Water," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

nation as real.[232] All these symbols come together to constantly enforce the concept of 'the Netherlands' as a real and tangible *thing* in the daily life experiences of its inhabitants. The maps where the Netherlands' modern borders are imposed on geological time create a very powerful imprint, in this context, as the Netherlands as something that existed in time immemorial, an almost deterministic retrospect of geological processes.

Plate 7: *A visitor interacts with the centerpiece geological map of the Netherlands during the opening night,* 30 November 1984 by an unknown photographer. From Archive: Exposition plans for "Nederland Uit Water", straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

3.2.2 Identity Crisis of the Mosasaurus

Subsection 3.2.1 took a closer look at how these material basal qualities created a certain national deep time narrative, while also working to reflect an acceptable form of national paleontology. The common thread is that this national discourse used as its base Pleistocene mammals that could be easily placed in a relational framework wherein the past is directly tied to the present within the context of the entire Dutch nation. This subsection looks at the history of the *Mosasaurus* and its interactions with the RGM and Limburg, to analyze how the unique material qualities of the *Mosasaurus* relative to other paleontological finds in the Netherlands, led to two competing heritage claims over the animal. The two main claimants

[232] Fox, "The Edges of the Nation," *Nations and Nationalism*, 27.

are the Netherlands, represented by the RGM, and Limburg, largely seen through the discourse surrounding the 1954 Valkenburg *Mosasaurus* specimen.

The *Mosasaurus* has been displayed at the RGM as early as 1935, as discussed in subsection 3.1.3 on paleontological displays. Placing the skull's casting in the 'Geology of the Netherlands' gallery together with a drawing depicting its extraction to recount the story of French looting, was a tool to claim the skull as stolen national heritage. This story would be repeated on multiple instances, such as in the "*Dieren Vroeger en Nu*" exposition (which ran from 25 October 1986 to 26 April 1987), and in the "*Geologie in Eigen Handen Gezien*" (which ran from 2 July to 6 September 1987) exposition.[233] In 1997, by which time the RGM had reunited with the RMNH to form the NNM, the *Mosasaurus* formed a part of the more permanent displays at the NNM's main building. The *Mosasaur's* display is particularly focused on the research history of the animal, depicting several historic reconstructions and of course once again detailing the specimen looted from Maastricht by French forces. The display especially emphasized that this particular specimen would prove especially important for the scientific understanding of extinction.[234] All of these episodes highlight various attempts to claim the *Mosasaurus* as specifically Dutch national heritage by placing both it and its research history within the context of a national museum, and further pointing to the impact it had on intellectual history served to raise the immediate importance of making such claims.

An exposition that placed the *Mosasaurus* at its center in a very real sense, by the construction of a life-size model, was planned to be held at the NNM in the mid-1990s. The concept report for this exposition emphasized that the Mosasaurus should effectively become the "flagship" of the NNM. It credits the Mosasaurus for playing into the Netherlands' international fame.[235] Because the model would be such a large financial investment, it was important that visitors understood they were not viewing just another exhibit, but something of immense national value.[236] Another purpose of the exposition was to discuss how the original St. Petersburg specimen played a revolutionary role in Cuvier's conceptualization of extinction, especially as, in 1992 when the report was written, this information was not frequently discussed.[237] This exposition represents the most serious attempt by the NNM to claim the *Mosasaurus* as specifically Dutch heritage, underpinning the importance of doing so on the scientific relevance of the original specimen. Since then, the prominence of the *Mosasaur* in Naturalis' displays has

[233] Handbook made in conjunction with exposition "Dieren vroeger en nu" titled "Ontdekkingsreis door de tijd," c7. From archive: Exposition plans for "Dieren Vroeger en Nu," "35 jaar Beeldend Werk," "Geologie in Eigen Handen Gezien," "Van Kiezelsteen tot Edelsteen," and "Herfstactiviteiten," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[234] Document titled "Tentoonstelling plan van 'Stukken in Stelling'," 17-19. From Archive: Stukken betreffende tentoonstellingen van het Rijksmuseum voor Natuurlijke Historie en het Rijksmuseum van Geologie en Mineralogie, 3.12.17, box 160, Inventaris van het archief van het Rijksmuseum voor Natuurlijke Historie [later: Nationaal Natuurhistorisch Museum Naturalis] te Leiden, (1815) 1839-2007, Nationaal Archief, Den Haag.

[235] A letter, no author or addressee, concerning the importance of the Mosasaurus. From Archive: documents pertaining to the reconstruction of the Maashagedis, from archive: De reconstructie en tentoonstelling van de Maashagedis Mosasaurus hoffmannii, Naturalis Biodiversity Center Archief, Leiden.

[236] Document titled "Eerste Schetsen en Ideeen," 2. From Archive: *Ibid.*

[237] Document titled "De Maashagedis; een revolutionaire verandering in het denken over het leven op aarde," 1-3. From Archive: *Ibid.*

fallen somewhat. In both the 1998-2019 and current compositions, the animal was placed together with other Mesozoic animals, somewhat denationalizing it based on spatial context. Further, neither gallery relayed the story of the original skull's theft.[238] There seems to have been a sort of 'rise and fall' in the attempt of the Museums to claim the *Mosasaurus*, signaling that, ultimately, this species is no longer considered specifically Dutch heritage. The earliest, and one of the only, attempts to claim the *Mosasaurus* as national heritage came from a 1952 *Algemeen Handelsblad* article, in which the term "*onze Mosasaurus*" was used.[239] The fact that such claims were so rare, and further that they seem to have more-or-less dropped off the radar of the primary Dutch national natural history museum, tells me that the *Mosasaurus* was not successfully claimed by the Museum as national heritage, despite serious attempts.

The Valkenburg *Mosasaurus* represents the episode in which the Netherlands and Limburg effectively clashed over *whose* national heritage the animal belonged to. Media reporting tells one story, where it was national news, and newspapers stressed that this was the second *Mosasaurus* discovered in the Netherlands.[240] Other newspapers stressed the monumentality of this "sea-monster" and the fact that it was a true and terrifying 16-meter predator, a spectacle to behold. Although its terrifying ancient character was emphasized, an effort was still made to make it comprehensible for audiences, the creature was likened to modern snakes and lizards, so that the *Mosasaurus* could still be imagined within some sort of relational framework.[241] Because the RGM was relatively slow in pursuing the acquisition of this fossil, its remains had become scattered across several owners. The local identity shines through clearly in the case of nineteen year old Jan Vollers. Vollers had purchased a piece of the *Mosasaurus* from a laborer working on the discovery site, and flatly refused to hand the material over. He had one exception however: he would surrender it if the fossil was used for science *and* if the entire discovery, including the lower jaw currently being prepared in the RGM's laboratory, would be displayed in the *Natuurhistorisch Museum Maastricht* (Maastricht Museum).[242] Science as a pure ideal was really being used as a vessel to carry a certain Limburgian identity. The RGM was in every respect larger, held more specimens for studies, better funded, and had more researchers passing through it than the Maastricht Museum. The reason for Vollers' preference for the Maastricht Museum seemed to be that he considered the *Mosasaurus* to belong to a distinct Limburgian paleontological tradition, not a part of a larger Dutch paleontological tradition.

While the *Mosasaurus* has somewhat lost its national steam, its presence in Limburg remains. A *Carnavalsvereniging*, founded in 1955 and involved with hosting an exposition at the Maastricht Museum titled *Monsters uit de Krijtzee*, exists to this day, and uses the animal as its logo.[243] The *Mosasaurus* also appears in one street name in Maastricht, and features as the Maastricht Museum's logo. The Maastricht

[238] "Maashagedis" label, in "The old Museum" website, Naturalis Biodiversity Center, URL: http://naturalis.nnm.nl/oerparade.

[239] "Onze Mosasaurus Raakte Het Hoofd Kwijt," *Algemeen Handelsblad*, Amsterdam, 24 May 1952, 6.

[240] "Bemelen's mosasaurus spoedig naar Limburg Voor wetenschap van groot belang," *Limburgsch dagblad*, Heerlen, 23 December 1954, 1.

[241] "Onderkaak van prae-historisch monster geprepareerd," *Trouw*, Meppel, 24 December 1954, 4.

[242] "Prae-historische mosasaurus was geducht roofdier: Rumoer om de naar Leiden gezonden overblijfselen," *Nieuwe Leidsche Courant*, Leiden, 23 December 1954, 3.

[243] "Expositie monsters uit de Krijtzee," *Limburgsch dagblad*, Heerlen, 10 November 1982, 15.

Museum itself has no less than four *Mosasaurus* skeletons on display, which it features heavily as centerpiece specimens. Meanwhile, at Naturalist, a specimen is currently integrated into the *Dinosauriers* hall, and it has had a long history as a part of various RGM displays. At the Maastricht Museum, the Mosasaurs form a centerpiece of the Museum's collection and even its *raison d'etre,* while limited symbolism still exists in and around Maastricht. The Maastricht Museum has further integrated the *Mosasaurus* into Limburg by the naming and stories of its four displayed specimens. The website relays the stories of the Limburgian individuals who discovered them, and names the specimens after their discoverers. In this way, the *Mosasaurus* is more than just a symbol; it is actively integrated into the experience of a select few, very lucky, Limburgians.[244]

While I do not want to make a definitive judgment on the *Mosasaurus'* identity, what is clear is that its geographic heritage lies, for now, in Limburg. The unique material conditions of what the *Mosasaurus,* that it is only found in Limburg and that it is so extremely different from Pleistocene Mammals, simply makes it very difficult to integrate into the national paleontological story; both from the perspective of the Dutch intellectual tradition and the Dutch deep time genesis.

[244] See the Maastricht Museum website, specifically the columns with headers "Bèr," "Lars," "Carlo," and "Kris." https://www.nhmmaastricht.nl/vroeger/

Chapter Four: When Dinosaurs meet Mammoths

The NNM and Naturalis, from 1984 to the Present

In 1984, the fusion between the RGM and the RMNH finally took place, though the exact year is not as clear-cut. Winkler-Prins put it in 1984, Naturalis' website put it in 1986, but the RGM building remained in use until 1991, with internal documents referring to it as the RGM until 1990. From 1991 onwards, the fusion had solidified under both a new building, the *Pesthuis,* and a new name, the *Nationaal Natuurhistorisch Museum*.

In 1998 the NNM began construction on a new building, which would be connected to the Pesthuis via a bridge over the *Darwinweg*. A very interesting and somewhat unusual choice of the building's design was to give it a 'free roam' layout.[245] Rather than following a set path through the rooms, the usual choice museums make in order to more effectively tell their scientific or cultural narrative, visitors were free and open to explore the museum at their own pace and were effectively empowered to create their own narrative. It is a radical departure from older approaches to museum layout design, where the layout of galleries and the order in which visitors walk through them is a part of the museum's dictation toolset. That said, there was a 'recommended' route, and the entrance to the museum was very specifically designed to amaze the visitors. Visitors would have entered through the Pesthuis, and from there moved to the bridge. The bridge itself was designed to get progressively less interesting as one approached the new main building, so as to impress, surprise, and awe the visitors all the more when the doors swung open and suddenly stood face-to-face with the *Camarasaurus.*[246] The first choice visitors were to make was whether to head to the *Oerparade*, the gallery on the bottom floor taking the visitors through the history of life, or to the *Natuur Theater*, a gallery above that contained hundreds of stuffed and preserved animals from the modern era.

In 2010, more fusions occurred, bringing the National Herbaria of Leiden, Amsterdam, and Wageningen Universities, and the Zoological Museum of Amsterdam University together with the NNM, forming the "Netherlands Biodiversity Center," and making the collection the 5th largest of its kind in the world. 2012 saw the name officially changed to "Naturalis Biodiversity Center". In 2015, construction began on expanding the building, after which the *Pesthuis* would no longer be in use. This caused a legal dispute with the building's architect, delaying the renovations. In 2019 the new building opened its doors, and this remains the form NBC takes to today. The name change from Netherlands Biodiversity Center to Naturalis Biodiversity Center is consequential for this study: it marks an institutional shift away from being a national institution in name, in doing so presenting itself as more of a universalist scientific institution.

Chapter Four serves as something of a counterweight to the analysis thus far, that paleontological collections and displays have been reflective of the colonial or national character of the Netherlands'

[245] Nationaal Natuurhistorisch Museum, *Naturalis: Museum Guide*, 22.

[246] Patrick Spijkerman and Frits de Leeuw, *Naturalis* (Rotterdam: Uitgeverij 010, 1998), 15.

political realities. Chapter Three made a handful of references to specimens collected outside of this scope already, namely the *Archaeopteryx* and the *Merychippus primus* specimens. These 'anational' specimens were acquired for the immensely important scientific advancements they represented in the field of evolutionary biology, but chapter four will serve to introduce a second strand of 'anational' objects. These would be: dinosaurs, and the economic and financial incentive their presence in popular media represent. The question central to this chapter is: what is the meaning and effect of dinosaurs on Naturalis' paleontological displays? Section 4.1 will construct the full scope of how dinosaurs came to the Netherlands and explore why they became as popular as they did. This will be done in two subsections, with 4.1.1 looking at the spread and popularity of dinosaurs in film and tv media, and 4.1.2 looking at the spread of dinosaurs in other Dutch museums. This allows for an understanding of what dinosaurs represent and what expectations visitors had when entering dinosaur related exhibits at the RGM, NNM, and Naturalis. Section 4.2 returns to the Leiden museums. Subsection 4.2.1 looks at dinosaurs as represented in RGM, before the fusion. This earliest attempt was not overly successful. Subsection 4.2.2 looks at the collection displays in the Pesthuis and in the *Oerparade*, covering a range of years from 1984 to 2019. Both of these buildings were able to use dinosaurs as tools to effectively denationalize many of the collections formerly in use in the Geology of the Netherlands and *Nederland Uit Water* galleries. Subsection 4.2.3 finally looks at the state of the collection today, in which these denationalized displays have become renationalized.

4.1 Consuming Dinosaurs

Section 4.1 aims to reconstruct the cultural discourse surrounding dinosaurs and other paleontological media in the Netherlands.[247] The first introduction of Dinosaurs to the Dutch public would have been in the mid-nineteenth century, when dinosaurs were first named and invented in the U.K. However, any cultural impact this moment may have had on the Netherlands has lost most of its traces. An alternative form of cultural communication has left a more measurable impact; cinema. Section 4.1.1 looks at the history of dinosaurs as represented in media, and finds a strong American thread throughout it. There was one exception: the Flintstones. This TV show found a fertile cultural landscape in which to be integrated. Section 4.1.2 looks at dinosaurs as they appeared in museums across the country. Here, a financial thread is picked up, coexisting with the American thread. Smaller museums would have felt a financial incentive to set up displays of the popular animals to take full advantage of Dino-rage, the Dutch flavor of the global Dinomania.

4.1.1 Dinosaurs: An American Monster or a Loveable 'Deeno'?

Ever since the 1854 Crystal Palace dinosaur displays, the wider public was aware of and gripped by the fantastical strangeness of dinosaurs. For a long time, dinosaurs as a cultural item were quite distinctly English.[248] This began to change in 1909 when a dinosaur, the adorable "Gertie," appeared in film. While the archetypal 'cute' dinosaur would not make the biggest impact, Gertie did represent the beginning of the dinosaur as a distinctly American cultural item.[249] The Netherlands, for the time being, remained fairly

[247] Parker, *Discourse Dynamics*, 6-20.

[248] Torrens, "Politics and Paleontology," 55.

[249] Baird Searles, *Films of Science Fiction and Fantasy* (New York, New York: AFI Press ; H.N. Abrams, 1988), 55-56.

isolated from these developments. Neither the Crystal Palace dinosaurs nor Gertie made a noticeable impact.

The conditions for this to change were spurred by increased American influence over and interaction with Europe following the First World War. Such influence was made possible by a combination of factors, of which American involvement in the war was but one. Another was the rise of cinema as entertainment in the Netherlands. Such a form of media was already popular in the U.S.A. for some decades, and now commercial success could be found in a new, European, market. This influence was noted by European intellectuals of the time, Johan Huizinga in the case of the Netherlands, and not entirely appreciated. American cultural influence was seen, by some, as an attack on Dutch culture.[250] This did not stop the Trianon Theater in Leiden from screening "The Lost World" in November, 1925.[251]

"The Lost World," based on Arthur Conan Doyle's novel of the same name, stunned audiences for its visual effects. It used stop-motion to bring prehistoric creatures to life, and these were even able to interact with the human actors and (at the end of the film) a human environment.[252] The story is set, mostly, in the titular "Lost World," an unexplored and untamed region of South America. Throughout the story, the main cast are harassed by a variety of prehistoric beasts, until finally they are able to capture a *Brontosaurus*. So far, the film follows the expected trajectory of western mythos in which man dominates nature. But, at the end of the film, this narrative is flipped. The Brontosaurus escapes and goes on a rampage through suburban London. The motif of humanity attempting to bend prehistoric nature to its will, only for it to backfire in spectacular fashion, is of course recognizable to anyone today as the core theme of Steven Spielberg's *Jurassic Park* (1993). In the Netherlands, the film received acclaim for its visual effect quality, though it was not always met with praise. The film left quite an impression on one editor for the *Algemeen Handelsblad*, who viewed the film in New York. He considered the visuals to be impressive from a scientific standpoint: if dinosaurs did indeed look in life as they did on screen according to the reconstructions of paleontologists, then seeing movement in their forms would be the best tool for visualizing this past. But the author wondered how useful such knowledge is. The Bible is brought up, and the author seems to withdraw behind it as a defense mechanism. "What else is happening here other than exchanging faith in the scripture for faith in the learned paleontologists?" the editor asks.[253] Dinosaurs brought to life in cinema were a threat to the author's Christian sensibilities. This should be read also as a threat to the author's Dutch identity, within the context of pillarization.[254] This review effectively demonstrates a strong, moral, objection to dinosaurs and Americanization of Dutch culture.

While the "Lost World" was a first, tentative, step for dinosaurs to break into the cultural landscape of the Netherlands, their big break would come in 1933, with the release of "King Kong". While the titular ape

[250] Rob Kroes, "The Reception Of American Films In The Netherlands: The Interwar Years," *American Studies International* 28, no. 2 (1990): 37–51, 39.

[251] "Directory To The Hague," *La gazette de Hollande*, La Haye, 06 November 1925, 4.

[252] Searles, *Films of Science Fiction and Fantasy*, 55.

[253] "Een voor-historische rolprent. Adam of de Brontosaurus," *Algemeen Handelsblad*, Amsterdam, 06 January 1925, 6.

[254] Kroes, "The Reception Of American Films In The Netherlands" *American Studies International* 28, 50-51.

took on the role of the *Brontosaurus*, dinosaurs played an antagonistic role throughout the film. "King Kong" was screened in, among others, Amsterdam's *Koninklijk Tuschinski Theater* and *den Haag*'s Apollo Theatre.[255] Its commercial success was such that it had reruns.[256] Reviews of the film strike very similar chords to the reviews of the "Lost World". The technical visual aspects of the film are stressed as beyond impressive. One review mentions how tiny humanity seems in the literal claws of King Kong and against the visual backdrop of the terrifying prehistoric world.[257] Another reviewer was decidedly less impressed, calling the whole thing "*idioot*". When the reviews turn negative, it is striking that the reviewers mention the popularity of the film in America.[258] It, once again, seems to be a rejection of American media and culture, though there is a rift between those reviewing the film, and the public taking the spectacle in. The takeaway from the reception of these early American films should be that Dinosaurs are taking an implicit American shape within the media sphere.

By 1960, the concerns about the Americanization of culture were forgotten. The 1960 remake of *The Lost World* is certainly recognized as a spectacle, but reviews of this film display no signs of insecurity or fears of Americanization.[259] It is possible that the Cold War geopolitical realignment of the western world eroded these fears, or rather that fears regarding national character were now based on Cold War narratives. I will also put forward that the dinosaur body plan was being completely co-opted by monster movies. Godzilla (1956) is of course the prime example of this. Godzilla's body plan is entirely typical of theropod reconstructions of the time (barring the nuclear breath, of course). What happened, in effect, is the creation of an entirely different sort of 'dinosaur'. There is the monstrous dinosaur, effectively synonymous with nuclear annihilation, and there is the animal dinosaur. The symbolic nature of Godzilla was recognized in the Netherlands, too.[260] The existence of these two types of dinosaurs, though clearly distinguishable, would frequently overlap in films such as Valley of Gwangi (1969) and At the Earth's Core (1976). The important takeaway is that such an overlap allowed the dinosaur to invoke connotations of monstrous destruction and being a real animal, simultaneously. In this way the American character of the dinosaur will have been subdued, and with it associated fears of Americanization.

What does all this mean for the RGM? When the RGM began setting up its temporary paleontological displays containing Mesozoic life, museum visitors would be going in and interacting with these displays within this cultural understanding of dinosaurs. That all-important dichotomy between animal and monster. Even as animals, dinosaurs are shown time and time again to be a subversion of the 'man dominates nature' myth. As monsters, they represent destruction, though these beasts deal with different themes and notions that only overlap with dinosaurs in the background. It makes them the perfect centerpieces for exhibits and expositions with which to impress visitors and impart ideological narratives

[255] "Advertentie," *De Telegraaf*, Amsterdam, 26 April 1933, 1.; "Advertentie," *Het Vaderland : staat- en letterkundig nieuwsblad*, 's-Gravenhage, 09 May 1933, 3.

[256] "Advertentie," *De courant Het nieuws van den dag*, Amsterdam, 16 June 1933, 8.

[257] "King Kong," *De courant Het nieuws van den dag*, Amsterdam, 29 April 1933, 9.

[258] "King Kong. Tuschinsky," *De tribune : soc. dem. weekblad*, Amsterdam, 02 May 1933, 4.; "Een spannende film bij Royal." *Het volk : dagblad voor de arbeiderspartij*, Amsterdam, 29 April 1933, 3.

[259] "E.D.B. Theater De Verloren Wereld," *Deventer dagblad*, Deventer, 12 November 1960, 5.

[260] "Godzilla, het zeemonster van Odo Luxor," *De Telegraaf* Amsterdam, 08 September 1956, 15.

upon them.[261] Around the time that the RGM began setting up its dinosaur displays, the most influential dinosaur movie thus far was released, *Jurassic Park*, setting the stage for the financial exploitation of Dinomania.

4.1.2 Dino-Rage in the Netherlands

Although Dinomania was primarily an American cultural phenomenon, it found its own flavor in the Netherlands.[262] Media dubbed it as 'Dino-rage'. It reached its absolute peak in 1993, of course coinciding with the commercial success of *Jurassic Park*. Dino-rage opened the doors to financial reward, overriding any concerns of Americanization in public discourse and curatorial decision making. This subsection explores the cultural context in which the Netherlands and Dutch museums interacted with Dino-rage, setting the stage for the RGM to follow in these footsteps.

The first dinosaur to come to the Netherlands in the public eye was the RGM's *Archaeopteryx* cast in 1934 or 1935.[263] The specimen was reproduced in Germany and small enough to transport with relative ease, which is a practical reason for explaining this dinosaur first crossing the border. Further, the scientific importance of the specimen also would have played a very important part in its purchase. The first large dinosaur fossil to appear in the Netherlands was "Skull 21," a *Triceratops* skull excavated during the Bone Wars of O. C. Marsh and E. D. Cope in 1891. It came to the Netherlands in 1950.[264] These first two specimens represent the earliest dinosaurs crossing into the Netherlands, but failed to make a serious cultural impact. The important point of these specimens is that they demonstrate how culture acts as a base for which paleontological material can find a place in the Dutch cultural experience. It was not until the Dino-rage phenomenon that dinosaur specimens began to really make an impact in museum displays.

Amateur paleontologist A. van Steijn was something of a visionary in transporting Dinomania to the Netherlands. In 1974 he set up the "*Tijdperk der Dinosauriers*" exposition at the Geological Hofland Museum in Laren, a smaller local institution. The exposition contained dioramas of ancient environments and some small models of ancient species. Fossil material was also on display: *Edmontosaurus* vertebrates, *Gorgosaurus* teeth, and some *Mosasaurus* remains.[265] The presence of both *Edmontosaurus* and *Gorgosaurus* fossil material suggests that van Steijn had contact with American paleontology. In this way he served as a cultural contact point between the Netherlands and America, likely one of the several that helped move dinomania geographically.

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[261] See subsection 3.1.3's opening paragraph for further discussion on this notion.

[262] "Amerika in de greep van de dino's," *NRC Handelsblad*, Rotterdam, 10 December 1988, 26.

[263] In truth, the *Archaeopteryx* cast was not the first Dinosaur to come to the Netherlands. It was actually a tiny fossilized feather belonging to an *Ostromia* that came into the possession of the Teyler Museum in Haarlem in 1855. However, this little fossil remained hidden in storage until the 1970s, when it finally emerged under public and professional eye. See: "Nieuwe 'oervogel' voor Teylers," *BNNVARA.nl*, 5 December 2017. URL: https://www.bnnvara.nl/vroegevogels/artikelen/nieuwe-oervogel-voor-teylers

[264] "Unieke tentoonstelling triceratopsschedel 'Skull 21'," *TUDelft.nl*, 1 October 2020. URL: https://www.tudelft.nl/2020/tu-delft/unieke-tentoonstelling-triceratopsschedel-skull-21

[265] "Het tijdperk der Dinosauriërs," *De Volkskrant*, 's-Hertogenbosch, 07 September 1974, 21.

The Zoological Museum of Amsterdam (ZMA) was the real institutional driver of dinosaurs entering the museological landscape of the Netherlands from America. In 1983, the ZMA hosted an exposition centered on evolution, featuring a *Triceratops* skull in some promotional material.[266] The choice to choose an iconic American dinosaur in promotional material is a further reflection of dinosaur's American characterization. The presence of a *Triceratops* skull already in the Netherlands will not have been as important, given Skull 21 arrived over thirty years prior and did not leave a measurable cultural impact. Two years later the ZMA hosted an exposition titled "*van Diplodocus tot Maashagedis*", and a year after that it had the opportunity to host a very exciting specimen: the first complete dinosaur skeleton cast in the Netherlands: a *Stegosaurus*. It was acquired via public subsidy from the Natural History Museum of New York in 1983, and was ready for display as the centerpiece exhibit in the 1986 "*Leven in Steen*" exposition at the ZMA.[267] Looking at the pattern here, the ZMA continually presented American dinosaurs, and fossils acquired from American institutions, as its centerpiece species and exhibits.

By 1991 it was clear that the Netherlands too had entered its own version of the American dinomania: dubbed here as "dino-rage". Denekamp's *Natura Docet* was the first to use the term as the title of its incredible exposition containing no less than thirty-one dinosaur skeletons, including no less than five monumental centerpiece species: a *Diplodocus*, *Tyrannosaurus*, *Stegosaurus*, *Brachiosaurus*, and *Mosasaurus*. "Dino-Rage" may even have been recognized in the Netherlands sooner than 1991 had this exposition not been delayed by the fall of the Berlin Wall.[268] I mention the fall of the Berlin Wall as it marks a huge cultural shift across the globe. From the western perspective, capitalism had now won out as the dominant global mode of economic organization. There are a few explanations for dino-rage, from the intriguing mystery dinosaurs pose as completely extinct megafauna, to developments in the scientific world. In the case of the Netherlands, however, I very much argue that this is a side-effect of the Americanization of the West. From cultural contact points, to the recognition of Dutch individuals of the specific American character of dinosaurs, all signs point to this interpretation. With the fall of the Berlin Wall and the affirmation of the American world order, including its commercial capitalist economics and various cultural outputs, helped set the stage for the international success of *Jurassic Park*. On top of this, the financial benefits of dinosaur displays will have fueled these smaller museums to include them in their displays before the RGM did, to give them a competitive edge in the marketing and advertising in the cultural sector.

Jurassic Park fueled the popular obsession with dinosaurs arguably far more than any single paleontological display, temporary or otherwise, at Dutch natural history museums. The reverse seems true: Museon (a science museum in *den Haag*) themed a temporary exposition around the film in 1994.[269] The rise in discussion on the scientific importance and relevance of *Jurassic Park* demonstrated the film's importance. John de Vos referenced the film in an interview with the newspaper *Trouw*, especially praising the film for its depiction of theropod posture with vertebrates held horizontally rather than

[266] "Evolutietentoonstelling," *De Telegraaf*, Amsterdam, 22 February 1983, 5.

[267] "Kunststof," *De Telegraaf*, Amsterdam, 14 February 1986, 5.

[268] "Dino-rage," *Trouw*, Meppel, 15 March 1991, 2.

[269] "Sterren Uit Jurassic Park In Museon," *Algemeen Dagblad*, Rotterdam, 29 April 1994, 21.

vertically, and for suggesting that dinosaurs were warm-blooded animals.[270] But there is also a distinct Americanness that is repeated in conjunction with Jurassic Park. "The dinosaur is an entirely American creature" is how Dutch paleontologist Lars van der Hoek Ostende put it.[271] This is entirely congruent with movie reviews of earlier 20th century dinosaur media. The distinct American nature of dinosaurs specifically among other paleontological material is a constant variable in popular culture.

There was, however, an American show with paleontological themes that found much more resonance as being compatible with Dutch culture: The Flintstones. The *Limburgsch Dagblad,* when it discussed the dino-rage of the Netherlands, actually traced its origins to the Flintstones more so than it did to Jurassic Park.[272] The Flintstones even received their own display in Emmen Noorder Dierenpark's expositions "Dinosaurs in Emmen".[273] But there are elements to the Flintstones that made it more palatable to be incorporated into Dutch culture than *Jurassic Park*. One explanation for the *Flintstone*'s popularity was that the humor and stereotypes used in the Flintstones happened to be entirely compatible with Dutch humor, allowing the show to become quite a memorable media sensation.[274] Further, while the Flintstones was not at all concerned with accurately portraying the ancient past, it drew most of its visual inspiration from stereotypical depictions of the ice age. As seen in the exposition *Nederland Uit Water* this lined up with the geological narrative of the Netherlands' own genesis. Dutch paleontological tradition now came with its own discourse that can now be interpreted and analyzed in cultural settings.[275] There is a distinct Dutch paleontological tradition that is based on Pleistocene mammals, structured through their physical relationship with the Netherlands, and given form by the popularity of the *Flintstones*. I would also argue that the Java Man skull cap, as another Pleistocene find, fits into this cultural structure too.

4.2 Dinosaurs Displayed

Section 4.2 returns to the RGM and analyzes its reaction to Dino-rage. Its first attempt at displaying dinosaurs, the focal point of subsection 4.2.1, was relatively unsuccessful. The lessons were learnt, however, and subsection 4.2.2 explores dinosaurs at the NNM and at Naturalis in their full potential. Dinosaurs were fully utilized for their role as center pieces to displays and galleries. Subsection 4.2.2 covers the permanent displays in the *Pesthuis* under the NNM and the *Oerparade* in Naturalis' first building. Its key point is the relationship between the centerpieces the *Edmontosaurus* and the *Camarasaurus* and the physical spaces in which they are placed. Subsection 4.2.3 covers the configuration of Naturalis since 2019, which includes a return of the Geology of the Netherlands gallery (now named the Ice Age gallery) and the Dino Era gallery. This is in service of demonstrating how the

[270] "Fantasie," *Trouw*, Meppel, 29 September 1993, 17.

[271] Pauline Sinnema, "'Het geloof in Gods schepping is verdwenen," *Het Parool*, Amsterdam, 18 September 1993, 17.

[272] Wilma Derek, "Dekbedden, schoenen en snoep naar aanleiding van film: Dino-rage op komst," *Limburgsch dagblad*, Heerlen, 02 August 1993, 8.

[273] "Dino's in Emmen," *Het Parool*, Amsterdam, 06 January 1994, 17.

[274] "Flintstones binnenkort pre-historische bos ingestuurd," *Leidse Courant*, Leiden, 25 October 1969, 13.

[275] Parker, *Discourse Dynamics,* 11.

meaning of Pleistocene mammals changed depending on their relative positioning to the Mesozoic reptiles.

4.2.1 *Dieren Vroeger en Nu:* Dinosaurs at the RGM

One of the earliest moments of dinosaur display at the RGM was the "*Dieren vroeger en nu*" exposition, organized jointly by the RGM and the RMNH. This exposition actually occurred in the post-merger era, from 25 October 1986 to 26 April 1987, but in all internal documentation it is still referred to as an RGM exposition.[276] The set up of this exposition was to have visitors travel from environment to environment, first prehistoric ones, then current ones. The displays were supplemented with films. The exposition was likely set up to take advantage of the earliest stirrings of Dino-rage, but also in reaction to the dinosaur renaissance, a movement in paleontology that began to re-imagine dinosaurs as specialized animals.

There are two snippets in newspaper reactions to this exposition that mark it as relatively unsuccessful, especially compared to the impressive dinosaur displays of the coming decades. One newspaper mentions a film at the exposition containing a *Tyrannosaurus* and *Stegosaurus* fighting, but these animals did not share an environment with another.[277] Chronologically speaking, we are closer to the *Tyrannosaurus* (about 65 MY difference) than the *Tyrannosaurus* is to the *Stegosaurus* (about 90 MY difference). If the purpose of this exposition is to be educational, this is an exceedingly odd choice by the RGM. My speculation is that the RGM was playing the "The Land Before Time" animation from Disney's 1940 *Fantasia*, which featured a *Stegosaurus* and *Tyrannosaurus* battling. The choice to commit this anachronism would likely have been as a way to make the exposition more appealing to children, as the animation style does capture a certain ferocity we still associate with Mesozoic life. Consequently, the full educational potential of dinosaurs within a scientific context was not lived up to.

This exposition marks a very interesting event in the primary source material: it is the first exposition with a clear negative review. One visitor, nine years old at the time, expressed clear disappointment in the exposition. He wanted to see grand, impressive, skeletons, instead he got to see models which "is what you can see in books."[278] Certainly, this is true. The late 1960s marked the beginning of the so-called dinosaur renaissance, which saw dinosaur media rapidly depart from depicting dinosaurs as sluggish beasts, and instead as active, specialized, hunters. Children and adults alike will have experienced this rise, but here a disconnect seems at play. The RGM organizers were, for the first time, setting up dinosaur displays. Clearly they are versed in the subject matter, they are experts in the field after all, but the detail of the *Tyrannosaurus* and *Stegosaurus* on film together sticks out all the more. Was this exposition designed to attract children specifically? There had been a long standing focus on appealing to children at the RGM, since the van Beet days, so it is almost a truism to say 'yes'. Given that dinosaurs as active beasts is a relative newcomer to both children and visitors as it was for the exposition organizers, this whole event feels like a swing-and-a-miss. Of course, there is only one negative review in the source

[276] Various documents. From archive: Exposition plans for "Dieren Vroeger en Nu," "35 jaar Beeldend Werk," "Geologie in Eigen Handen Gezien," "Van Kiezelsteen tot Edelsteen," and "Herfstactiviteiten," straat 25-8, RGM Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[277] Saskia Nassenstein, "Tentoonstelling over Dieren van Vroeger en Nu: Maten kloppen niet," *'t Parool*, 31 December 1987. From archive: *Ibid.*

[278] Nassenstein, "Tentoonstelling over Dieren van Vroeger en Nu," *'t Parool*, 31 December 1987.

material, but it is no accident that of all the material out there, this is the *only* exposition with one. This exposition marks an early attempt at capitalizing on the success of dinosaurs, but the failure of this exposition to live up to this potential will have taught the Museum staff two things: skeletons and education are vital to dinosaur displays.

4.2.2 The *Edmontosaurus* in the *Pesthuis* and the *Camarasaurus* in the *Oerparade*

The NNM was, much like the RGM, deeply interested in acquiring impressive centerpiece paleontological specimens. However, where the RGM had used Pleistocene animals from the Netherlands, the NNM shifted the focus to the Mesozoic, to dinosaurs.[279] Three very important Mesozoic animals would be acquired from the Americas. In 1992 it was an *Edmontosaurus*, excavated by the Black Hills Institute.[280] In 1993 the NNM acquired what was designated in the annual report of the same year as a *Tropeognathus*, but was later reclassified as a *Coloborhynchus*, from Brazil.[281] This specimen was found almost by pure chance, and it helped open the region to further paleontological exploitation.[282] In 1995 a *Camarasaurus* was purchased, but it was not until 1996 that the fossil could be sent to the NNM.[283] Dinosaurs, despite their American subtext, became the stars of the NNM and later of Naturalis. The advantages they represented, both as financial attractions as those awe-inspiring monuments of nature, heavily outweighed their anational character.

At the Pesthuis, a semi-temporary exposition was set up titled "*Topstukken in Stelling*," effectively acting as a trial run for how best to set up natural history and paleontological displays at the newly acquired Pesthuis building. A 1992 report details the plans of this exposition. It outlined three main goals; 1) to ensure the visitor's enjoyment; 2) to impress them with the displays and the museum's collection; and 3) to demonstrate scientific advancements.[284] The plan outlined two galleries, the first of which would contain natural history collections with national, scientific, and historical value, and served to contextualize the collection in the context of the Dutch royal family, state officials, former colonies, and extinct animals.[285] This gallery effectively served as the 'nationalizing' gallery, in which the natural historical proximity to important Dutch symbols, such as the royals, casts the specter of the nation over the entire museum. This is especially true as visitors would have moved through this gallery first.

The second gallery would contain the paleontological displays, and included four centerpieces. The three smaller centerpieces will first be analyzed. The first was a *Mosasaurus*, briefly discussed in subsection

[279] de Vos, "Jaarverslag 1989," 4. From archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[280] Specimen 'RGM.450188', Naturalis Bioportal. URL: https://bioportal.naturalis.nl/nl/specimen/RGM.450188

[281] "Jaarverslag 1993: Sector onderzoek en collectie beheer," 2. From archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.

[282] Nationaal Natuurhistorisch Museum, *Naturalis: Museum Guide*, 26.

[283] "Gegevens van de afdeling paleontologie van het jaarverslag 1995," 1. From archive: Collectie-archief van het Rijksmuseum van Geologie en Mineralogie, Naturalis Biodiversity Center Archief, Leiden.; Naturalis Biodiversity Center, "Camarasaurus: *Camarasaurus supremus*," URL: https://topstukken.naturalis.nl/object/camarasaurus

[284] Document titled "Tentoonstelling plan van 'Stukken in Stelling'," 2.

[285] *Ibid.*, 8.

3.2.2.[286] The most important item for it here is that the *Mosasaurus* is used as the representative of Dutch paleontology, but in the intellectual tradition. It is the fossil of a primitive horse that is used as the symbol of genesis. Unfortunately, the exhibition plan did not state the animal's specific species, only that it is European. Very importantly, it is described as representative of the beginning of "our time," imbuing it with that discourse of genesis.[287] While the species was not explicitly stated to be Dutch, its proximity to national symbols, its contextualization in a national institution, the language of the display, and the fact that it is a Pleistocene mammal, leads me to the subtextual reading that this display represents a form of national genesis. This is a narrativizing claim that places the beginning of "our" time, which in context should be read as "Dutch national" time, at the rough beginning of the Ice Ages. The final centerpiece specimen on display was a Dodo reconstruction.[288] The Dodo was used as a representative of human-caused extinction and climate change. Its inclusion in this gallery gave paleontology an environmentalist spin, fully inversing the displayed relationship between Dutch paleontology and the energy sector since the 1961 Shell financed televised expedition.

The largest and most impressive was the *Edmontosaurus*, placed centrally in the room to immediately catch the eye of the visitor. 85% of this skeleton was the original and complete fossil.[289] The fact that it is emphasized that the skeleton was authentic, and not just a cast, indicates that the *Edmontosaurus* was the centerpiece of the gallery. It was further positioned in the center of the hall, so that it would be the first thing the visitor's eyes were drawn to. This is the display of scientific awe meant to awaken the curiosity of the visitor. The *Edmontosaurus* thus represented the incredible power of dinosaurs, but also the scientific importance of them. However, it found itself enveloped by paleontological displays representing human science, human origins, and human extinction. It is helpful now to think about the invisible connections made by the visitors due to this spatial organization[290] Did its stature and strangeness allow it to stand as a monument to nature? Or did it become a monument to humanity, and with it a piece of Dutch intellectual heritage, as it was subdued into the confined space of science and paleontology? On one hand, its centrality suggests the former explanation. On the other hand, its proximity to and envelopment by national paleontological specimens suggests the latter. Ultimately, it was the expectation of the exposition designers that both interpretations be valid. Based on the information meant to be conveyed, it was meant to stand as a monument belonging to a universal science, and its centrality opened the visitors up to accepting the importance of the gallery as a whole.[291]

[286] Document titled "Tentoonstelling plan van 'Stukken in Stelling'," 17-19.

[287] *Ibid.*, 20.

[288] *Ibid.*, 22.

[289] *Ibid.*, 16.

[290] Peter Vergo, *The New Museology*, 3.; Bennet, *The Birth of the Museum*, 35.

[291] Document titled "Tentoonstelling plan van 'Stukken in Stelling'," 16.

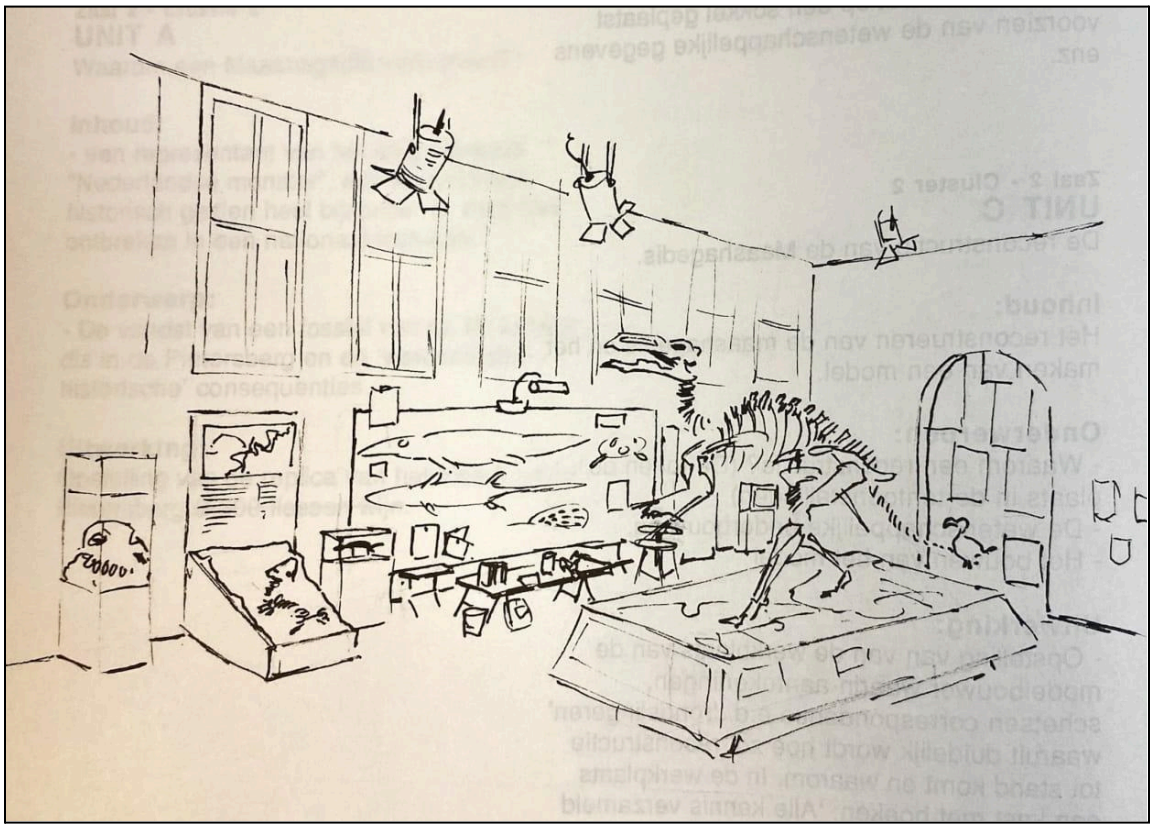

Plate 8: *A sketch of the* Edmontosaurus *in context of the second gallery at the Pesthuis,* 30 Document titled "Tentoonstelling plan van 'Stukken in Stelling'," 19. From Archive: Stukken betreffende tentoonstellingen van het Rijksmuseum voor Natuurlijke Historie en het Rijksmuseum van Geologie en Mineralogie, 3.12.17, box 160, Inventaris van het archief van het Rijksmuseum voor Natuurlijke Historie [later: Nationaal Natuurhistorisch Museum Naturalis] te Leiden, (1815) 1839-2007, Nationaal Archief, Den Haag.

The 1998 *Oerparade* was much more decisive in how the relative proximity between dinosaurs and Pleistocene mammals changed the meaning of both, in that rather than opening the possibility of the *Edmontosaurus'* nationalization, it completely denationalized the Pleistocene displays. In part this was due to the centerpiece of the *Oerparade:* the *Camarasaurus* rearing on its hindlegs and reaching some ten meters in height. It was purposefully placed so that visitors would come face-to-face with it upon entering Naturalis' new building, and so positioned that it was the first thing visitors would see upon entering the doors to the *Oerparade*.[292] The visitor would be so impressed by this centerpiece, placed so close to the entrance of the gallery, that all proceding displays fail to live up to the *Camarasaurus*.[293] On top of this, while the *Edmontosaurus* was packed into a cramped room surrounded by symbols of national (or human) paleontology, the *Camarasaurus* was given the full space of a very large hall, in which it could dominate

[292] Nationaal Natuurhistorisch Museum, *Naturalis: Museum Guide*, 22.

[293] I visited this configuration of Naturalis when I was about twelve years old, and while I do not remember many details from my visit, I will never forget my mouth dropping to the floor when stepping into the new building and coming face to face with this giant of the Mesozoic. The posture, the mass, the sheer grandiosity of this Sauropod is ingrained in me: this to the point that I found myself disappointed upon entering Naturalis' current configuration and not being greeted by the same sight.

the empty space rather than be confined. The stated function of the *Oerparade* was to impress visitors with nature, and in this the *Camarasaurus* was very successful.[294]

The *Oerparade* was a chronological display of the history of life. It was so constructed as to let the visitors visually walk through evolution. [295] The gallery was built around a 'tree of life', itself surrounded by paintings of the universe and earth in its various stages. Each painting demarcated a selection of fossil displays relating to that era being represented.[296] The *Camarasaurus* was displayed next to the *Edmontosaurus*, and they were positioned so as to be immediately visible when entering the gallery. Walking towards them, one would have walked past various fossils from older times.[297] A very small display is dedicated to marine reptiles, including the *Mosasaurus*, but for the first time in its display history at the RGM genealogy of institutions, this animal is not emphasized as being a piece of Dutch heritage. While the display does of course mention that it is one of the few animals found in the Netherlands, this language is framed descriptively. The story of the St. Pietersburg theft is not relayed.[298] As a result, the *Mosasaurus* is denationalized and made a part of the larger story of life through its spatial orientation in relation to other Mesozoic animals.

Finally, the visitor arrived at the Cenozoic, and many of the species were on display here that once formed integral parts of various configurations of the Geology of the Netherlands gallery. The Mammoth, Bison, and Deer are all placed near the end of the hall. They are surrounded by other animals, such as the *Halitherium*, the Italian fossil palm, and the Moa.[299] The end result is a complete denationalization of the Dutch Pleistocene paleontological displays. They no longer belonged to a national paleontological tradition, but rather form the last chapter in the story of evolution. Remembering as well the dominance of the *Camarasaurus*, the very impressive Mammoth and Giant Deer fossils have relatively fallen off as real centerpiece species. It emphasized the strangeness of the far past, and the familiarity of the recent past. A display of human skulls was placed amongst these Pleistocene animals. The Java Man is the only specimen in this hall that, via its display, remained nationalized as paleontological heritage, but this was the absolute exception.[300] The primary effect that these skulls have, placed so close to the relatively more familiar Pleistocene animals, is that the story of evolution became the story of human evolution. The *Oerparade* was a universalist display of our scientific understanding of how life, and humanity, evolved.

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[294] Spijkerman and de Leeuw, *Naturalis*, 21.

[295] *Ibid.*, 16.

[296] Nationaal Natuurhistorisch Museum, *Naturalis: Museum Guide*, 25.

[297] Digital landscape in "The old Museum" website, Naturalis Biodiversity Center, URL: http://naturalis.nnm.nl/zwerfzone-aanlandingspunt-naar-oerparade-2

[298] "Maashagedis" label, in "The old Museum" website, Naturalis Biodiversity Center, URL: http://naturalis.nnm.nl/oerparade.

[299] Digital landscape in "The old Museum" website, Naturalis Biodiversity Center, URL: http://naturalis.nnm.nl/zwerfzone-aanlandingspunt-naar-oerparade-2

[300] See Section 2.3 for more on this Java Man display.

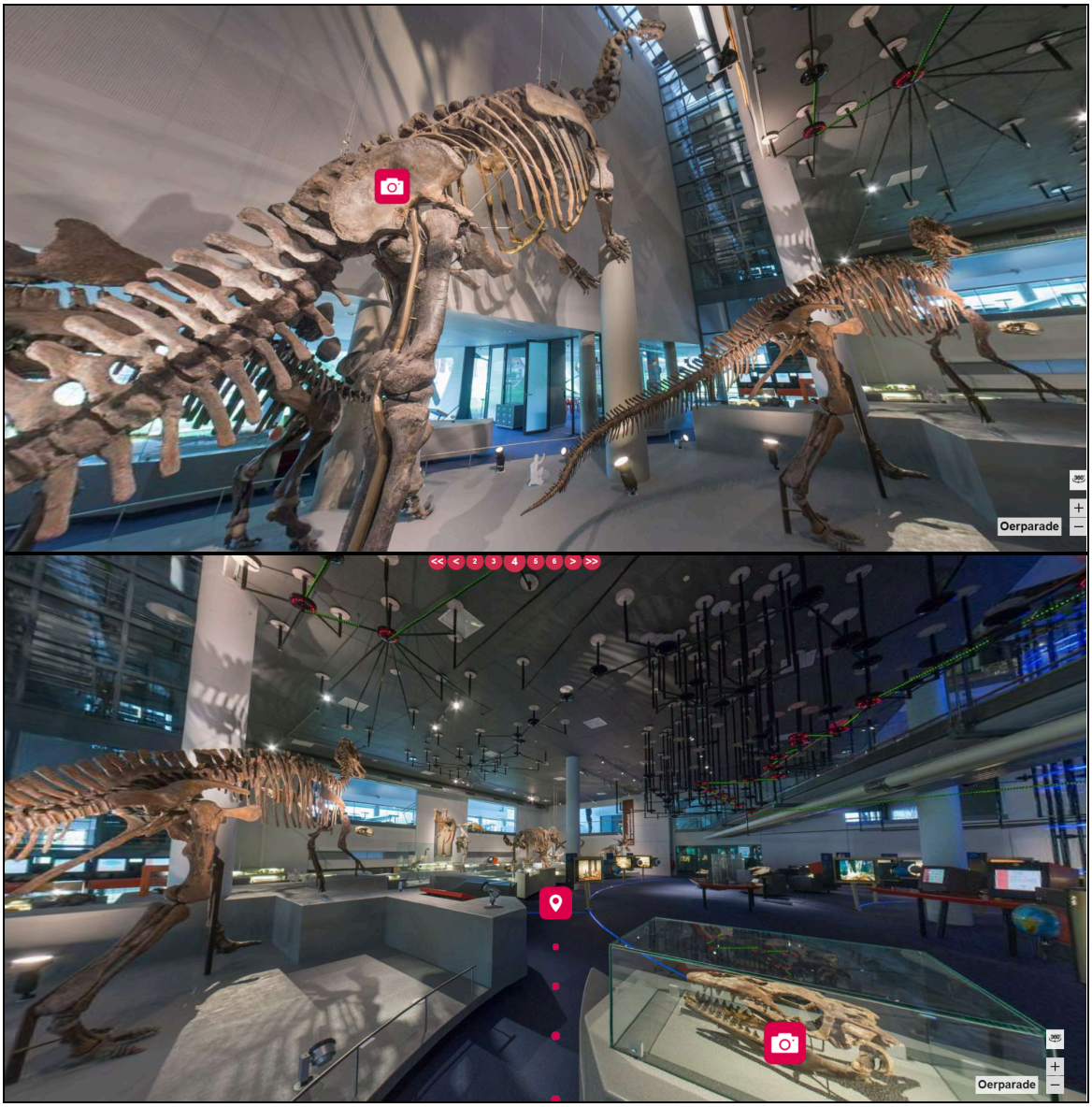

Plate 9: *A pair of screenshots from the Old Museum Naturalis website showing how the* Camarasaurus *and* Edmontosaurus *are positioned relative to the Cenozoic display in the* Oerparade*,* URL: http://naturalis.nnm.nl/oerparade

4.2.3 From Dinosaurs to Mammoths: Naturalis and its current Paleontological Displays

In their current configuration, in use since 2019, the Pleistocene fossils of the Netherlands have once again been nationalized, but transformed due to the way dinosaurs are utilized in the context of the museum. The visitor now walks first through two galleries not linked to paleontology, before reaching the Dino Age gallery. In it are an array of impressive Mesozoic beasts, with each dinosaur given the full chance to stand on its own pedestal, brought to life by an animation playing on the banners unfurled as backgrounds to the skeletons. After traversing this gallery, the visitor is brought to the Ice Age gallery, though this new name does not change the fact that this is the spiritual remake of the Geology of the

Netherlands Gallery. For the first time in this Gallery's history, the *Mosasaurus* and other Limburgian Cretaceous fossils are fully excluded. In this subsection the spatial arrangement of each gallery will be analyzed, before discussing what effect this has on the idea of a Dutch paleontological tradition outlined in Chapter 3.

The Dino Era gallery takes the visitor through a chronological journey of the Mesozoic, beginning with the relatively small but important *Plateosaurus*, past the ever-immense *Camarasaurus*, and finally at the famous *Tyrannosaurus*. The dinosaurs here are detached from any geographic setting. The display labels convey some basic facts about the fossil. The real majesty in this display is the sheer size of the animals. Behind each specimen a banner is hung, behind which animated models of the animals are brought to life in a simple looping animation. The end result is genuinely quite breathtaking. Bringing the dinosaurs to life in both animation and by allowing the skeletons to stand at full height, while also serving to collapse temporal separation, has the end result of striking awe in the visitor through the sheer difference of these animals to what exists today. Rather than creating a relational framework, the dinosaurs are emphasized for their bizarity, and totally detached from anything 'national'.

This is also made possible by the hiding of national narratives. Subtextually, the visitor is aware of the Americanness of dinosaurs, and virtually all specimens in this gallery are from the United States. Some notable exceptions are the *Plateosaurus*, from Switzerland, the *Coloborhynchus* from Brazil, the *Archaeopteryx* from Germany, and the *Edmontosaurus* from Canada. Still, these nations are not particularly emphasized in the Museum displays. And when placed so close to the famously American and very large *Stegosaurus, Camarasaurus, Triceratops, Mosasaurus,* and *Tyrannosaurus,* the gallery as a whole is saturated in American subtext. In the introduction I mentioned how naming this *Tyrannosaurus* 'Trix' had a nationalizing effect. This is true, if we view the specimen in isolation. But its spatial organization as the crown jewel of a series of Mesozoic paleontological displays buries this subtext. The function of the emotions invoked by walking through these beasts of the lost world is to imprint awe and wonder.

Having moved through the Dino Era gallery, the visitor next comes to the Ice Age gallery. The paleontological displays in here are now completely renationalized. This includes two animals not actually from the Netherlands; the Irish Giant Elk and the Czech Cave Bear are linked to the Netherlands by the displays mentioning incidents where these animals were found in the Netherlands. Not to mention, the true centerpiece of this display is a giant interactive map of the Netherlands with its completely modern borders (including reclaimed land). There are multiple binoculars surrounding the map, through which visitors can look and almost literally watch the models on the map come to life in short repeated films. The utilization of a contemporary map of the Netherlands and placing small models on here to recreate an ice age in the literal shape of the Netherlands, represents a powerful projection of the nation into deep time. The Netherlands as a geographic boundary is thus transformed into the relational framework by which the visitor understands the past, collapsing the temporal boundaries through a direct visual experience. Dutch national paleontology is quite literally brought to life with this interactive display, and given real geographic points of imagination, as visitors can 'see' what their home-town or province might have looked like 200,000 years ago. It emphasizes both the Pleistocene national genesis of the Netherlands through this interactive map, as it does the Pleistocene and mammalian nature of Dutch paleontology via exclusion of the *Mosasaurus*.

Plate 10: *The Ice Age map of the Netherlands, with the Mammoth skeleton in background,* on display at Naturalis Biodiversity Center, Ice Age gallery. Photograph taken by author on 22 May 2024.

A new element attached to Dutch paleontology that was not present during the RGM years or the years in which these fossils were organized into various Geology of the Netherlands galleries, is that of relative familiarity. Because the visitors have just walked through the Mesozoic, a long and winding path that lets each specimen shine on its own pedestal, the relatively compressed Ice Age gallery gives the former a prolonged temporal experience, and the latter a compressed one. On top of this, the way in which the Mammoth, Giant Deer, Giant Elk, and Cave bear are positioned, tucked away into densely packed cabinets of hundreds of bones, molars, and skull fragments, lets the space of the gallery dominate the paleontological displays (similar to how the *Edmontosaurus* was dominated by the *Pesthuis*), while the

Dinosaurs are given room to dominate their space. The end result is that the Dutch paleontological tradition is rather more comfortable, smaller, less imposing, even a bit more humble. This is a reversal of the RGM history, where these four displays were often used as centerpieces of the whole museum. There is a comparative and visual distinction drawn between the foreign Mesozoic, and the domestic Ice Age, a powerful spatial metaphor for the current definition of Dutch national paleontology.

Conclusion

This paper has looked at over two hundred years of institutional history, beginning at the backdrop in which cabinets formed and the European political sphere became interested in actively acquiring cabinets to form the first museums, leading to the founding of the RMNH in 1820. From this institutional starting point, paleontological material took the analytical center stage from 1878 onwards as the RGM became an independent institution heavily linked with Dutch colonies in the East Indies. The Second World War and subsequent loss of the Dutch colonies gave rise to a new and focussed national paleontological tradition. Throughout the later twentieth century, dinosaurs began to emerge as cultural powerhouses, which would go on to dominate the paleontological displays in Naturalis in the twenty-first century. There has been significant temporal overlap between the chapters, each epoch was very much defined by the political and cultural circumstances in which the Netherlands found itself. In the conclusion of this paper, I will first summarize the findings of each chapter to answer the research question while reflecting on what this answer contributes to the ongoing literature of the meaning of fossils. This will be followed by a critical reflection of the research methods and outcomes, before offering a number of areas now opened for future study.

What were the meanings of paleontological displays and collections at Naturalis and its predecessor institutions?

There are four elements and their consequences to this research question that need to be elaborated upon. First and foremost; the question is intentionally phrased as to be very broad. ‘Meanings’ can be attributed to just about any item, display, text, or more, and there are countless analytical lenses from which to derive meanings. The advantage of this is that unexpected meanings can be found in unexpected places. This has become especially apparent by the second element of this research question; that it limited its scope to the national natural history (and national geology) museum of the Netherlands. This carries implications derived from the context of the study. National museums are publicly funded, and need to serve a public purpose. They also need to convey and reflect a sense of the nation they represent. In the case of paleontology, this has become predominantly Pleistocene mammals found in and around the Netherlands, until the cultural space for dinosaurs opened a new door for expanded Mesozoic displays. The third element of the question is paleontology itself. Paleontology represents both a science with an intellectual tradition and a philosophical approach to the history of life and the history of the earth. As Rudwick said, this philosophical approach has wide-spread consequences for the very nature and place of humanity.[301] When these are brought together, I was left with a question that allowed for interpretive breadth, but within the context of both a national narrative and national intellectual culture of the Netherlands, and how these interacted with material that carries such important scientific information.

The fourth element concerns the time span of the research: the time covered stretches 1820-2024 (thinking just about the analytical portion of the paper, section 1.1 went further in time to discuss the origins of museums) just an inch over two hundred years. This has allowed for important movements in Dutch history to be reflected in the paleontological collection and display strategies at the Museums. The

[301] See: Rudwick, *Earth’s Deep History*.

following quote by Dillon Ripley springs to mind: "Culture creates collections, collections create culture."[302] The analysis of the interplay between the Dutch nation and paleontology, stretched over time, has revealed how the geopolitical positioning of the Netherlands has played a fundamental role in what sorts of paleontological material could be collected and displayed, but also how certain cultural issues made some types of paleontological material more or less appealing to put on display. I am specifically thinking of the *Mosasaursus* and of dinosaurs. The former eventually fell out of use under Naturalis as it no longer reflected the core elements of the Dutch tradition of paleontology it wanted to display. The latter was not ready to be incorporated in displays until the cultural backdrop of Dino-rage, and resulting attraction power dinosaurs now held.

Chapter One served as a means to discuss the politicizing potential of museums by tracing the social and political roots of collecting. These roots came in the form of cabinets of curiosities, themselves extensions of upper-class intellectualism.[303] The direct lineage between cabinets and museums meant that early museums were viewed by contemporaries as great tools for civilizing the masses.[304] Specifically, this notion of civility was tied to civilization and nationhood; early modern museums were seen as tools for nation building.[305] The Netherlands' first museums were no different in this, first founded by Lodewijk I in an attempt to create a singular Dutch nation out of the republic of provinces he ruled over, and continued by Willem I as he aimed to solidify his rule.[306] The purpose of Chapter One was to illustrate the explicit tripartite link between scientific institutions, including the topical RMNH and its descendents, the Dutch nation, and the monarchy. It borrowed from Wiesner's politicization theory to illustrate how the monarchy's consistent involvement with the Museum effectively served to politicize it and its collections.[307] The monarchy would remain important throughout the Museum's history, whether as legitimizers of the RGM or as powerful symbols of the Dutch nation.[308] The *raison d'etre* of the museum being the construction of the Dutch nation further imbued the RMNH and its descendants with the didactic power to define what would become a Dutch paleontological tradition. There is some tension between this political aim and the stated aim of being a scientific institution with the public function to educate visitors on scientific developments. Science as a knowledge system often produces universalist knowledge claims, setting it in direct opposition with the national goals of the institution.

Chapters Two, Three, and Four work form this analytical starting point to analyze how the Museum has set about interacting with this tension and creating a Dutch paleontological tradition in doing so. Chapter Two concerns the colonial power status of the Netherlands. When thinking about the meaning of fossils at a colonial institution, these fossils must be seen as extensions of colonial power. Most of Chapter Two

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[302] Ripley, *The Sacred Grove*, 23.

[303] Bennett, *The Birth of the Museum*, 73; Arnold, *Cabinets for the Curious*, 14-15.

[304] Greenwood, *Museums and Art Galleries*, 26-27.

[305] *Ibid.*, 34.

[306] Holthuis and Fransen, *1820-1958: Rijksmuseum van Natuurlijke Historie*, 14.

[307] Wiesner, *Rethinking Politicisation in Politics, Sociology and International Relations*, 22.

[308] See: Queen Wilhelmina's inaugural visit to the RGM in section 2.1 and the *oranje draad* referenced by Brongersma in his centennial speech of the RGM referenced in subsection 3.1.1.

worked towards explaining the colonial mechanisms at play. Material extracted from the colonies was turned into Dutch heritage by domestic and international research, and by display at the RGM. The final section of Chapter Two, 2.3, demonstrated how the claiming of the Java Man as Dutch heritage took place, in doing so erasing non-national narratives that may have been linked to the specimen.[309] Other than its role within the colonial exploitation of the Dutch East Indies, what is also very important about Chapter Two is what it shows about the creation of a Dutch Paleontological tradition: the foundational base of this tradition is rooted in the material conditions of the fossils collected. Because fossils were being extracted from the colonies, the material base for the creation of a Dutch paleontological tradition was diluted, and could not yet be accomplished.

This was the main theme of Chapter Three. Where before the Second World War it was possible for the RGM to rely on the colonies for the bulk of its paleontological extraction, it now had to turn its attention to home. It was able to do this in part due to the rapidly expanding role the *Rijkswaterstaat* began to play in the development of the Netherlands' water based infrastructure. This began to yield a distinct type of fossil, which would come to define the base of Dutch paleontological tradition: this would be the excavation of Pleistocene megafaunal mammals, especially of Mammoths and their relatives and deer, from the bottom of the North Sea and rivers. Water, the Ice Age, and large mammals formed the basis for what would become the Dutch paleontological tradition on display at the RGM. This is also one of the biggest differences between the Dutch Mammoth and Semonin's American Mammoth. Where the former is defined by its discovery in water, and plays into the relationship between the Dutch and waterworks, the latter was a reflection of the American wild west and the spirit required to dominate it.[310] In this way, the cultural context of the animal's excavation becomes key in defining its place in that culture.

Another result of the emergence of the unifying Ice Age and mammalian characteristic of Dutch paleontological tradition is what it meant for the deep time genesis of the Netherlands. In the same way that the Anthony's Cave Bear became an important clue in historicizing the deep time German landscape into Germany's national history, the Ice Age became something of the genesis point for the Netherlands.[311] This historicity was made visible by the utilization of relational frameworks in paleontological discourse. In the case of the *Mensch van Hengelo*, it saw the Christening of this skull as the First Dutchman.[312] This discourse placed the skull within the context of a national history of the Netherlands, by relating the ancient Ice Age past the skull represented directly to the national identity of the culture that today inhabited the region. It was also visible in the spatial emphasis of the *Nederland Uit Water* exposition, where the vast majority of paleontological specimens on display came from the Ice Age. The effect of this was a clear slow down of time starting from this point, setting the stage for the more detailed emergence of the Netherlands from this context.

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[309] Peckham, *Rethinking Heritage*, 2-3.; Falser, *Cultural Heritage as Civilizing Mission*, 1-2.

[310] Paul Semonin, *American monster: How the nation's first prehistoric creature became a symbol of national identity* (New York: New York University Press, 2000), 14.

[311] Anthony, "Making Historicity," in *Journal of the History of Ideas* 82, no. 2 (2021): 231-256, 232, 255.

[312] "Schedel Van 20.000 Jaren Ouden Nederlander Gevonden," *Limburger koerier: provinciaal dagblad*, Heerlen, 03 July 1935, 2.

A final consequence of this new basis for Dutch paleontological tradition was the stricter definition of what did and did not belong to this tradition. The *Mosasaurus*, as a Cretaceous reptile found exclusively in Limburg, became less and less relevant to displays in Leiden's Museums, moving towards the Maastricht Museum instead. Rather than Limburgian paleontological tradition acting as a unique form of national Dutch paleontological tradition, the radically different material qualities of the *Mosasaurus* worked to create an entirely unique and distinct paleontological tradition.

Chapter Four's role as a counterweight was an important one. The analytical emphasis of this research has very much been laid on the relationship between the nation and paleontology, but a museum has multiple didactic functions. One of these, to relay accurate scientific information, is a bit of a truism, but nonetheless a consistent and important factor. For this reason, Chapter Three made sporadic references to paleontological specimens collected and displayed that did not fit cleanly into the mold of national paleontological nation crafting, but rather carried important scientific value. Another relates to environmentalism, and through Chapter Three and Four a process in which the RGM went from working with Shell, to using the Dodo as a symbol of human-led extinction, served as a small example of how paleontological collection and displays evolved to reflect contemporary sensibilities.

Another function of the museum is to attract visitors, and for this purpose dinosaurs began to find their home in the Dutch national natural history museum, despite the Netherlands not having any tradition of dinosaur fossils found in its territory (the only exception to this is a small bone fragment found in Limburg and currently displayed at the NNM).[313] The cultural stage needed to be set first, however, so it was not until Dino-rage had gripped the Netherlands that the NNM began to embrace Mesozoic animal displays. Because the material conditions of these Mesozoic fossils are not explicitly linked to the Dutch nation, the displays had a unique and profound impact on the already existing national displays, though this was dependent on the spatial organization of the dinosaurs. The *Edmontosaurus*, being so deeply ingrained and enveloped by national symbolism, found itself more dominated by the physical space of the museum than the *Camarasaurus* did in the *Oerparade.* The latter animal's vastness allowed to dominate the space it occupied, having the effect of completely denationalizing the Dutch-found Pleistocene fossils in the context of the *Oerparade*. Also important to this denationalization process was the integration of these Dutch fossils into internationally acquired specimens and their spatial-narrative positioning at the end of a universal story of life's evolution. This is all reminiscent of Bennet's argument that spatial organization is how museums convey their ideology.[314]

The museum's current configuration has reintroduced the national paleontological tradition to Naturalis. In spite of the Geology of the Netherlands gallery being rebranded as the Ice Age gallery, its spatial organization clearly demarks it as the spiritual heir of the Geology of the Netherlands gallery. From the map of the Netherlands in the gallery's center, to the focus on Dutch found paleontological material on display, to even the language of the display tags claiming the internationally acquired Giant Elk and Cave Bear as representative of Dutch paleontological finds, this gallery completely works to define the material qualities that define Dutch paleontological tradition. The lack of *Mosasaurus* shows that the Ice Age and

[313] See the Maastricht Museum website, specifically the column with headers "De Nederlandse Dino." https://www.nhmmaastricht.nl/vroeger/

[314] Bennet, *The Birth of the Museum*, 2, 18.

mammal qualities have at last been solidified. The proximity of the animals here to the beasts of the Mesozoic in the Dino Era gallery injects a further element into Dutch Paleontological tradition; it has become reflective of smaller, more familiar, animals. The mammoth, though imposing, is positioned so that it is tucked away into a corner, and not at all presented with the same grandiosity as the *Camarasaurus* or the *Tyrannosaurus*. It seems to reflect Dutch values in *nuchterheid*, or sobriety, especially compared to the subtextually American Mesozoic beasts.

Ultimately, the paleontological displays at the RGM, NNM, and Naturalis demonstrate two important aspects of paleontology and the nation. First, is how the political boundaries of the nation play a fundamental role in what sort of fossils can be extracted. From colony, to nation, to the establishment of ties in the Americas in the globalizing world, the geopolitical reach of the Netherlands played a strong role in its paleontological collection possibilities. Second, is how the meanings derived from these fossils are both based on the material conditions of its excavation, demonstrated by the loss of the *Mosasaurus* as national heritage, and on the reflections of culture it constructs, seen in the changing role of environmentalist messages, the prominence of water in collection strategies, and how dinosaur displays did not find their footing until Dino-rage set their stage. So, what in the end was the meaning of paleontology? The answer is; it depends. It could mean the colonial status of the nation, it could mean the nation as a whole, it could mean Limburg, it could mean environmentalism, it could mean America. The meaning of paleontology is derived from the material conditions of its excavation and the cultural structures within which it is embedded.

Critical Reflection and Future Research

The main item I would like to spend some time reflecting on in this section of the conclusion is the sources used, especially the annual reports, of which copies exist in both the National Archive in *den Haag* and in Naturalis' archive in Leiden. While documentation is excellent for the years 1878 to 1963, covering the entirety of Martin's, Escher's, van der Vlerk's, and Zwaan's directorships. Unfortunately, the reports from Beets' time are all lost, whether due to the chaos associated with his arguments with the Leiden University board or the simple random chance of documents being placed somewhere unexpected, they were not available during this research. This has been a great shame, as the annual reports proved to be the most efficient source to gain direct oversight over the museum's full collections, displays, and other relevant activities for years at a time.

Had this study chosen to focus on a smaller portion of time, then further documents in the form of correspondence would have been invaluable. The annual reports are written with the goal of summarizing the museum's successes: the intended audience were the financiers of the museum after all. But it is in correspondence that moments of failure, of attempts at acquisition that bore no fruit, come to light. These documents include examples such as a specific trade led by Martin between the RGM and the British Museum, and of an early failed attempt in the 1920s to acquire the Dubois collection.[315] While both these letters reveal interesting dynamics about inter-institutional communication, the practical fact of the matter

[315] A letter by Martin to the British Museum, in Archive: from 3.12.14., box 1-45, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.: A letter by a staff member of the RGM, in Archive: from 3.12.14., box 98-100, Inventaris van het archief van het Rijksmuseum voor Geologie en Mineralogie te Leiden, 1877-1951, Nationaal Archief, Den Haag.

is that a study dealing with two centuries of history does not have the time for such in-depth document handling. The annual reports were, in this regard, the perfect tool to efficiently capture as much history as possible.

This research was set in a small and young body of literature, bringing a unique case study to the table. That being: the situation of fossils in museums as the analytical lens through which a very political light can be shed on paleontology. This follows up from a remark made by Nieuwland in the conclusion of his study on the Carnegie *Diplodocus*; that moving the dinosaur into the museum made it a matter of the state directly.[316] The groundwork that has been done in acknowledging the cultural and political situation of paleontology set by Semonin, Hedeen, Dawson, and Rudwick has of course been vital to the materialization of this research. Placing paleontology in the specific setting of the national museum has allowed me to quite naturally make the connection between constructions of national paleontological traditions and elements thereof, and the geopolitical situation of the Netherlands.

Anthony's paper has also been of use in demonstrating that the separation between deep time and national time is really one of artificial construction; the link can just as easily be created in the right setting.[317] The *Nederland Uit Water* exposition, with its emphasis on the Ice Age and the way it arranged paleontological material from the Carboniferous to the present creates a similar historicization spatially displaying how the Netherlands emerged from deep time. Especially in today's political climate moving towards a resurgence of nationalism, critical analyses of how national narratives have been historically constructed will become increasingly important. This is especially true when it comes to the link between deep time and nationalism, as the projection of the nation into geological deep time is one of the most powerful expressions of the nation as a tangible thing destined to emerge. Such narratives have powerful political connotations, and have already seen use by politicians belonging to this new wave of nationalism, such as Boris Johnson.[318]

The greatest success of this research has been narrativizing the historical construction of a uniquely Dutch paleontological tradition, from which two further research possibilities spring. The first concerns the concept of paleontological heritage. Paleontological heritage as a legal concept exists in many parts of the Spanish and Portuguese speaking worlds, but is relatively lacking in the Netherlands and Belgium. Only since 2015 has the term "*paleontologisch erfgoed",* as a concept distinct from paleontological material as a part of cultural heritage, been in use in Dutch language publications. The first usage of this term came from an article by Dick Mol *et al*, discussing the collection of several fossils from Maasvlakte beach, specifically that such collections should be considered and treated as paleontological heritage.[319] Since then, one of the aforementioned article's co-authors, Bram Langeveld, a curator at the Rotterdam Natural History Museum, has published two articles calling for remains of the Giant Auk (an extinct species of

[316] Nieuwland, *American Dinosaur Abroad,* 254.

[317] Anthony, "Making Historicity," in *Journal of the History of Ideas* 82, no. 2 (2021): 231-256, 232, 255.

[318] Jeremy H. Kidwell, "Reconfiguring Deep Time: Ecology and the Christian Philosophy of History," *Worldviews: Global Religions, Culture, and Ecology* 26, 3 (2022): 216-227, 216-217.

[319] Dick Mol, B. W. Langeveld, Anton Janse, Walter Langendoen, and Joanna Smolarz, "Determinatiedag fossiele strandvondsten van Maasvlakte 2 in Futureland: een verslag," *Cranium* 32, no. 1 (2015): 49-58, 58.

bird that filled a similar ecological niche in the northern hemisphere that penguins today do in the southern hemisphere) to be considered paleontological heritage.[320] Julian Doop wrote an article in 2022 asking whether or not it was responsible to consider paleontological material as heritage, arguing primarily that in some legal frameworks, the protection of paleontological material as heritage has hurt the ability of amateur paleontologists to collect.[321] As discussed in subsection 3.1.2, amateur collectors such as Schot and Ridder, have formed a vital aspect of Dutch paleontology. At the same time, there is a distinct and unique Dutch paleontological tradition that may benefit from being formalized as a part of our heritage. The history of this tradition should be incorporated into this debate, regardless of its outcome.

The second research consequence relates to the *Mosasaurus*. Throughout this paper I have made multiple allusions to the *Mosasaurus* as belonging to a unique Limburgian paleontological tradition, and this represents what I feel to be the most interesting angle to further investigation. Hedeen's work on the Big Bone Lick fossil site demonstrated how a unique American paleontological tradition emerged, and my own research has taken a museum-led approach to the construction of a Dutch paleontological tradition.[322] The next step is to start putting these various paleontological traditions into conversation with each other. There are two possibilities in this; to take this on an international level and compare the interactions and influences national paleontological traditions have had on each other, or to stay on the national level and analyze competition, cooperation, and influence of national and regional paleontological traditions. I would be especially interested in expanding on the competition between the Netherlands and Limburg on ownership of the *Mosasaurus*, taking into account not just the cultural landscape as seen in Museums, but in the country as a whole. This would include integrating the effect of popular cultural representations of the *Mosasaurus*, such as its appearance in Colin Trevorrow's *Jurassic World* (2015), and the effect of the discovery of so many *Mosasaurus'* abroad. Especially with the renewed calls for the repatriation of the *Mosasaurus* holotype skull from France to the Netherlands, I believe such a study could find a valuable niche.

[320] Bram Langeveld, "Over reuzenalken en samenwerken," *Straatgras* 32, no. 2 (2020): 86-87, 86.; *Ibid.* "Reuzenalk: de pinguïn van het noorden herontdekt," *Testerep Magazine*, (29 March 2022).

[321] Julian Doop, "Pleistocene zoogdierfossielen als cultureel erfgoed, een goed idee?" *Cranium* 39, no. 2 (2022): 66-73, 72.

[322] Hedeen, *Big Bone Lick*, *xviii*.

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