

DONNA C. MEHOS

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The Amsterdam Zoo *Artis* in
the Nineteenth Century

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Donna C. Mehos

AMSTERDAM UNIVERSITY PRESS

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For Jaap

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Acknowledgments

When I first proposed the history of *Artis* as a dissertation subject in the mid-1980s, my ideas generated enthusiasm among some historians and skepticism among others. The value of zoo history as a serious academic topic in the history of science was not yet crystal clear. I commenced research that first appeared in my dissertation and has now crystalized into this book. I trust that this work, and various studies of other zoos that have recently appeared, will convince scholars in many sub-fields of history and the social sciences that zoological gardens provide rich resources that help illuminate science and reveal its cultural meanings.

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Donna C. Mehos

INTRODUCTION¹

The Nation and Nature in Middle-Class Culture

No one can say I don't live decently with my wife – she is a daughter of Last & Co., coffee brokers – no one can find fault with anything in our marriage. I am a member of “Artis”, she has a shawl which cost ninety-two guilders...
– Multatuli, *Max Havelaar*²

With these words, the fictional Amsterdam coffee broker, Batavus Droogstoppel, positioned himself in decent Dutch society. Portrayed as the caricature of an unfeeling intolerant hypocrite, Droogstoppel represented one segment of Dutch middle-class society in Amsterdam. A trader of colonial wares who married into a respectable family, he also confirmed his identification with polite society by pointing out his membership in the private Zoological Society (*Zoologisch Genootschap*) *Natura Artis Magistra* – the Amsterdam zoo.

Science, the Zoo, and Middle-Class Culture

Clearly, for the Dutch who read *Max Havelaar* when it appeared in 1860, *Artis* membership was a recognizable status symbol. *Artis* emerged as a significant cultural institution devoted to science. It was founded by and for its middle-class members. Historians of the nineteenth century have rarely included zoos or science in their analyses of the rise of bourgeois culture in which art museums and concert halls figure more prominently.³ Yet in the Netherlands, the two Dutch national art museums struggled for both financial support and public recognition in a period when *Artis* was prospering.

While public art museums rarely received donations and the art market valued seventeenth-century paintings by Frans Hals or Vermeer in the hundreds (rather than thousands or millions) of guilders, *Artis* regularly received gifts and easily purchased exotic animals at costs comparable to masterpieces. *Artis* operated with an annual budget that the art museum directors would have considered astronomical. If money talks, these figures tell us that, in the nineteenth century, exotic animals, ethnographica, and natural history at the multi-functional zoological society was much more highly esteemed by Amsterdam's cultured middle classes than the Rem-

brandts and Jan Steens that have come to symbolize the nation's cultural heritage.

This history of *Artis* investigates ideals and expressions of bourgeois culture (*burgerlijke cultuur*).⁴ Te Velde and Aerts have described the bourgeoisie in the Netherlands as driven by a perceived obligation to live productive lives, and to contribute to society and to the progress of national culture.⁵ It also developed systems of social inclusion and exclusion.⁶ The history of Amsterdam's Zoological Society illustrates the responsibility burghers took to create this institution as well as the methods of social inclusion and exclusion practiced at the zoo that opened its gates for members only. This book also explores the role of science in the cultural identity of the Dutch bourgeoisie, and in the cultural expression of civic and national loyalties, a topic that has received little attention from scholars.⁷

Collecting Nature and Its Historiography

Europeans have for centuries maintained a rich tradition of collecting the wonders of nature, and it is in this tradition that we must place *Artis*.⁸ As early as the Renaissance and early modern period, natural objects were collected, classified, examined, described, and admired. Seeds, dried leaves, tree bark, crystals, gemstones, skeletons, colorful shells, and birds' nests were desirable objects, as were the masks, shields, and spears of exotic peoples from faraway places. Cabinets of curiosities were owned by European monarchs, aristocrats, and wealthy citizens who often traveled thousands of miles to view the private collections of others, and to augment their own. By the nineteenth century, a larger population of burghers owned more modest collections. Furthermore, public natural history museums were founded, often through the institutionalization of royal or private collections. Museum collections were enhanced by the spoils of overseas expansion, and exhibited the natural world in a public sphere.

Artis pioneered a new generation of naturalia collections by including *living* animals, an addition that the founders explicitly believed would add a new dimension to the understanding of natural history. Like the older private cabinets and some of the new public national or municipal museums, *Artis* collected plant, animal, mineral, and human – ethnographic – objects from nature and brought them together with a zoological garden. Because of the shared goals and capital resources of so many members, *Artis* could sustain these collections on a scale not seen before and make them accessible for a population of burghers who could not have acquired significant collections privately. Thus *Artis* emerged as a *collective* natural history

collection that mirrored the goals and ambitions of private collectors who for centuries performed studies in their own cabinets and tried to understand the natural world. It also crafted an institutional organization between personal private collections and openly public ones.

Histories of collecting or of natural history seldom describe zoological gardens as the successors to cabinets of curiosity. Literature on the history of zoological gardens often considers as the direct predecessors to zoological gardens the various menageries in ancient times, later decorative royal menageries for aristocratic pleasure, as well as traveling menageries for working-class amusement. This view focuses too narrowly on the human habit of keeping animals captive and not broadly enough on the goals behind the practice. While menageries are relevant to nineteenth-century zoo history (particularly at the royal menageries where research was also performed), zoological gardens such as *Artis* were the inheritors of more traditions than menageries alone.

Despite the impressive number of zoological gardens that opened within decades of *Artis*,⁹ it is only in recent years that professional historians have explored the rise of zoos.¹⁰ General and popular histories of individual zoos have been written, many of them commissioned in celebration of zoo anniversaries.¹¹ The history of *Artis* has also been chronicled.¹² Most of these works recount institutional developments, construction of zoo buildings, and the acquisition of particular animals, for example. They tend to focus on zoos as sites of public entertainment and rarely address significant historical issues.¹³ More recent overviews have appeared and are worthy efforts to investigate more seriously the advent of zoos.¹⁴ Unfortunately, some of these new contributions are – like the literature they draw from – unreliable.¹⁵

In the earliest essay collection, Kohlstedt identifies historiographically significant areas for future research in her call for more critical histories of the rise of zoos.¹⁶ She points out that scientific research objectives, economic and political activities in times of European expansion, and cultural characteristics such as nationalism and urbanization contributed to the enthusiasm for collecting and displaying exotic creatures but have yet to be thoroughly investigated.¹⁷ Analytical historical research linking zoos to their urban environments, local and national governments, and scientific traditions and innovations are rare. She rightly recognizes that zoo founders had “multiple and sometimes conflicting motives.”¹⁸ It is precisely the perspective of zoo founders that is often overlooked in existing histories. However, to explain the motives of zoo founders in the contextual history that Kohlstedt proposes, detailed historical research on individual zoos in their specific historical contexts is necessary. This book is one such study.

Exploratory studies of some nineteenth-century zoos have begun to illuminate a variety of institutional forms, links with science, and multiple intentions of zoo founders. The extraordinary founding of the Paris Zoo in 1793, for example, occurred when wild animals arrived unannounced at the gates of the Jardin des Plantes. The surprised professors working in France's preeminent Muséum d'Histoire Naturelle were expected to keep the creatures safely off the streets, care for them, and create a national public zoo.¹⁹ Needless to say, there was little planning behind this Parisian zoological garden, and the scientific use of the animals evolved only gradually.

In contrast, the London Zoological Society's Regent's Park Zoological Garden was founded with explicit goals to breed and to domesticate animals although these efforts were short-lived.²⁰ Later, it contributed to more academic scientific zoological studies. The origin and first decade of this society were studied in detail by Adrian Desmond, who linked its scientific and institutional changes to the broader political climate in London and Britain but who did not investigate the zoo specifically.²¹ We know that the preeminent anatomist Richard Owen dissected animals that died in the Regent's Park Zoo, and played a role in London similar to that of Willem Vrolik in Amsterdam, who tried, for example, to establish the cause of the animals' deaths.²² Moreover, Thomas Henry Huxley, dissatisfied with the scientific study of zoo animals, was committed to improving zoo science.²³

More similar to *Artis*, German zoos often emerged from private initiatives, and sometimes in cooperation with (academic) naturalists or natural history museums.²⁴ The motivation behind founders of German zoos has been linked to the goals of educating the nation's people (*Volksbildung*) as well as to the cultural initiatives of the German bourgeoisie (*Bürgertum*).²⁵

The histories of natural history museums, collections, collectors, and zoological gardens remain rich and relatively unexplored areas worthy of serious scholarly attention. Historical studies have increased our understanding of the changing relations between humans and animals.²⁶ Animal collecting and its relevance to colonial expansion have not escaped scrutiny.²⁷ Harriet Ritvo detailed a variety of ways in which Victorian Britons dominated domesticated and exotic animals and thereby demonstrated their own power over both nature and empire.²⁸ Michael A. Osborne's study of the Société zoologique d'acclimatation explicates attempts by the French to acclimatize exotic animals and to introduce them into agriculture in France. He also studied the acclimatization society's role in developing colonial agriculture in Algeria.²⁹ This society founded its own zoo in Paris, the Jardin Zoologique d'Acclimatation that opened in 1860.³⁰ These examples demonstrate that historical studies on human-animal

interactions, and their relationships to broader themes, can be a fruitful area of research. More scholarship on the significance of the history of zoos in scientific, economic, national, colonial, and cultural contexts holds much promise.³¹ It will enrich our knowledge not only of these institutions but more importantly of the social factors responsible for their existence in every self-respecting city across the globe.

Cultural Nationalism

In the nineteenth century, the century of nationalism,³² the Dutch defined their new national identity. In this period, the Dutch bourgeoisie took the initiative to found and to finance institutions that would reflect their cultural nationalism. Placed in the broad context of Dutch history, the rise of *Artis* is a case study in the creation of national culture. *Artis* successfully pursued a variety of strategies in this process of national culture building; not only did the zoo directly foster scientific and musical culture, but it also embodied at least one traditional and crucial element of the Dutch national identity – colonial power. At *Artis*, animals and ethnographic objects provided a vision of colonial nature for the burghers at home in the fatherland. While historians have recognized that the arts became the focus for cultural developments, the multi-functional cultural institution *Artis* focused on science in general, and more specifically on proud displays of the colonial world. The colonial connection explains, in large part, why the Dutch bourgeoisie chose to support so strongly their Zoological Society *Natura Artis Magistra* long before Amsterdam sustained a major concert hall or national art museum. However, in the same spirit of cultural nationalism that inspired supporters of the zoo, the Dutch eventually founded institutions more recognizable to us for their cultural value because of their focus on Dutch arts. One of the few historians to study the creation of Dutch national culture, J.T.M. Bank describes the rise of cultural institutions and monuments.³³

Bank attempts to link the economic growth of Amsterdam and its coincident cultural expansion; he dates the emergence of new Dutch cultural institutions around 1870, when the Dutch economy grew dramatically and enabled the bourgeoisie to transform their economic spoils into cultural capital.³⁴ Bank examines the men who took the initiative to found the Paleis voor Volksvlijt, the Rijksmuseum, the Concertgebouw, and the Stedelijk Museum. The supporters of these institutions primarily represent the new wealthy bourgeoisie rather than an old elite. Bank shows clearly that they came from a wide variety of religious and political backgrounds,

that many of them earned their fortunes in commerce and banking, and enjoyed prominent positions in Amsterdam's business world. This new class of Amsterdammers took upon themselves the responsibility of creating the nation's cultural capital embodied in these new public institutions.

Decades earlier, however, the same bourgeoisie had supported a different type of cultural institution: *Artis*. The members of the board of directors of *Artis* (see Appendix), with their professional and commercial affiliations, included many of the same men, and/or their relatives, prominent in Amsterdam's commercial and financial life. The phenomenon Bank describes of the new bourgeoisie using their financial capital to create cultural institutions can be extended back in time to the founding, and successful early decades, of *Artis*. Certainly at *Artis*, the new bourgeoisie actively participated in the development of cultural institutions earlier in the nineteenth-century economic recovery than the period Bank describes. Bank is right when he claims that institutions such as the Rijksmuseum and Concertgebouw began a new phase of cultural and national expansion,³⁵ but economic growth alone does not account for this phenomenon.

Economic factors clearly made possible the development of cultural institutions in the last quarter of the nineteenth century, but one must also look at the possible social motivations that moved these burghers. While the old elite had their own form of exclusive societies where they participated in cultural activities, some members of the new bourgeoisie were excluded from them. Furthermore, many actively fashioned new institutional forms of high culture. In fact, throughout Europe in the nineteenth century, monumental bourgeois cultural institutions arose as expressions of middle-class culture. Social change led to new forms of cultural life. In the middle of the century, Amsterdammers at *Artis* rallied around the shield of Amsterdam and the flag of the nation. Later, they did the same with more public and less exclusive institutions.

A broader view of Dutch nationalism in the nineteenth century illuminates the changing cultural landscape in the Netherlands into which *Artis* fit. The insightful work of N.C.F. van Sas on the shaping of the Dutch nation and nationalism provides a strong foundation for the analysis of many developments in Dutch society in this period.³⁶ In the process of defining and redefining the nation in the nineteenth century, the Dutch were plagued by their position as a small country with a great past – a sense of faded glory – that was not dispelled until the 1880s.³⁷ Van Sas lucidly argues that the specific character of Dutch nationalism lies in its focus on the revolt against the Spanish in the late sixteenth century, and the glorious Golden Age of the seventeenth century.³⁸ These historical events took on

various meanings in the development of Dutch nationalism, and the shaping of the country's identity. In the 1780s, the Dutch harbored hopes to return to the glorious past. By 1800, they realized a return was impossible, and the accomplishments of the Golden Age, particularly those of its political and military heroes, were used to create a myth of the nation.³⁹ From this myth-making, a new historical consciousness arose along with an increasing sense of patriotic pride (*vaderlands gevoel*) that manifested itself in the arts and sciences.⁴⁰ In the last decades of the nineteenth century, when national cultural institutions emerged, the Dutch honored new cultural heroes – most notably Rembrandt – from their seventeenth-century past. Throughout the nineteenth century, historical events were used, and heroes were created, to develop a myth of the nation,⁴¹ and to inspire generations of Dutch burghers to revive Dutch culture from its decline.

The lionization of Dutch heroes took the form of memorial statues in this Protestant nation that had no tradition of similar monuments because statues reeked of Roman Catholic idolatry.⁴² William of Orange, the father of the nation, was the subject of two of the earliest statues made in 1845 and 1848.⁴³ Later, political, military, and royal heroes faded as cultural heroes came to the fore, and ultimately dominated the development of Dutch cultural nationalism. In Amsterdam in 1852, Rembrandt's monument was unveiled and a major celebration surrounded the event that idealized Rembrandt's biography and his character. Rembrandt became an invented symbol of the nation who embodied bourgeois virtues.⁴⁴ Similarly, in 1867, three days of festivities at the unveiling of the statue of the poet Joost van den Vondel in the new Vondelpark celebrated him as a bourgeois hero of the fatherland and the mother tongue.⁴⁵ These monuments and others dedicated to Golden Age artists and writers, taken together with similar expressions of cultural nationalism discussed by Bank, were initiated by and popular among Dutch burghers. Based on the cultural accomplishments of the past, the Dutch bourgeoisie forged a new Dutch national consciousness that united disparate elements – particularly different religions – in Dutch society.⁴⁶

In contrast to Bank, Klaas van Berkel has looked at the relatively unsuccessful attempts to erect monuments honoring seventeenth-century Dutch scientific figures.⁴⁷ Initiated by men of science, rather than prominent businessmen and cultural entrepreneurs, such efforts to link scientific nationalism to the cultural nationalism that flourished in the 1860s, 1870s, and 1880s drew little support. Ironically, the bourgeoisie that supported the monumentalization of Dutch cultural figures in this period did not commemorate past scientific achievements in the form of statues. Rather, they

supported the forward-looking zoological society *Natura Artis Magistra* in its efforts to develop an internationally recognized scientific institution.

The emergence of *Artis* was an expression of Dutch cultural nationalism. The Dutch burghers who supported *Artis* created a scientific and cultural institution that would become a source of national pride. Colonial power took on new meaning as the Dutch developed their national identity. The zoo reflected colonial prowess. At home in Amsterdam, Dutch burghers visited *Artis*'s displays of objects from colonial nature. The Dutch bourgeoisie contemplated visions of nature and of the Dutch nation at the Amsterdam Zoo *Artis*.

Science and Culture Displayed

This case study of Amsterdam's zoo *Artis* begins to fill the gap in our understanding of the historical role of zoos. I have focused on one zoo in order to explain how it functioned simultaneously as a site for zoological science and as a center for cultural life in nineteenth-century Amsterdam. A complete picture of the zoo as a multifunctional institution emerges from the specific details of the zoo's organizational structure, its strategy to develop zoo-based science, and the facilities and activities designed for its members. By placing *Artis* in its local and national contexts, I illuminate the motives of the Amsterdam bourgeoisie that believed this particular scientific cultural institution was worthy of their support. The rise and decline of *Artis* can only be understood in the context of the nineteenth-century society that produced it.

The general Dutch national historical context is thus described in Chapter One. Here I explore the founding and rapid expansion of Amsterdam's zoological society, including its membership policies. Its innovative organizational structure combined amateur and professional activities in a way that contributed greatly to its success. In the period when enlightenment scientific societies entered their decline, *Artis* emerged as a successor, a new generation of learned societies.

In Chapter Two, I discuss the rise and expansion of the zoo in its local political context. For decades, *Artis* faced conflict with Amsterdam's mayors and aldermen, and its city council, because the land it wished to annex was owned by the city. The city council, responsible for acting in the public interest, could not justify selling or leasing public land to this closed society. In the battles waged, *Artis* defended its position as being in the public interest because of the variety of ways it served education. The city council, however, maintained that the public interest could not be served by a soci-

ety that excluded most Amsterdammers. The wars with city hall only ceased when *Artis* and the municipal government formally cooperated in higher education. When the Municipal University of Amsterdam was founded in 1877, *Artis* was permitted to build an aquarium on a piece of city-owned land it coveted; in exchange, *Artis* was required to build teaching facilities for medical school education, and to open its zoological garden and collections to both professors and university students. The debates illustrate that the city council and the *Artis* Board of Directors defined “the public interest” differently.

The strategy *Artis* employed to establish itself as a center of serious scientific research is the subject of Chapter Three. *Artis* supported the work of professional naturalists committed to zoo-based zoological studies and cooperated with the renowned Rijksmuseum of Natural History in Leiden. Furthermore, it financed the publication of the first two Dutch zoological journals that ultimately gained international reputations, and brought attention to the zoo and to Dutch science. *Artis*, legitimated as a scientific institution, lent its prestige to the newly-founded Municipal University of Amsterdam. Upon entering an official alliance with the university, *Artis* helped to legitimate Amsterdam’s academic zoology.

Chapter Four explores the role of *Artis* in Amsterdam’s cultural life. Members visited the zoological gardens, natural history and ethnographic museums, and listened to concerts by leading Amsterdam orchestras. Lectures and publications by the resident experts – professional naturalists involved in zoological research – disseminated natural historical knowledge among Amsterdam’s bourgeoisie. At *Artis*, music and science were cultural activities supported by and for its members, who consciously created cultural capital in nineteenth-century Amsterdam. The cultural role of *Artis* remained strong until the last two decades of the nineteenth century, when new monumental cultural institutions were founded in the Dutch capital.

The concluding chapter discusses art, science, and the formation of national identity. It also addresses the simultaneous development of colonialism, science, and trade, which played a role not only in the rise of *Artis*, and more generally natural history, but also in economic and social change.

The novel in which the character Batavus Droogstoppel appeared hit the Netherlands like a bombshell. In *Max Havelaar*, Eduard Douwes Dekker – publishing under the pseudonym Multatuli – condemned Dutch colonial rule. Dekker’s service as a colonial administrator in the Dutch East Indies left him horrified by the oppression of the indigenous population and the inhumanity of the colonial government. This novel sent a shock wave

through Dutch society that ultimately led to colonial reforms. Droogstoppel, however, was not moved by suggestions of cruelty inflicted on the people forced to cultivate his coffee. Not all of the members of *Artis* shared Droogstoppel's intolerant philistinism. The history of the Zoologisch Genootschap *Natura Artis Magistra* illuminates precisely how many of his contemporaries put into practice their bourgeois ideals of virtue in their commitment not only to the zoo and what it came to symbolize, but also to Dutch middle-class culture in general.

CHAPTER ONE

Structuring a New Generation's Scientific Society

Introduction

In May of 1888, three days of festivities took place to mark the fiftieth anniversary of Amsterdam's zoological garden, the Koninklijk Zoologisch Genootschap *Natura Artis Magistra* (Royal Zoological Society *Nature is the Teacher of Art*).¹ Flowers, flags, and banners decorated the neighborhood during the special events. Inside the zoological garden gates, B.J. Stokvis, physiologist and Professor of Medicine at the Municipal University of Amsterdam, extolled the accomplishments of the society in his keynote address. The new building for the society's Ethnographic Museum opened on this occasion, and a select crowd visited the exhibits that had been augmented by the collections of the Colonial Society (*Koloniale Vereeniging*). An orchestra, choir, and soloists performed the cantata commissioned by the zoo for the celebration. It was written by Daniël de Lange, a leading Dutch composer of the day; J.A. Alberdingk Thijm and W.J. Hofdijk, Amsterdam's literary notables, composed the lyrics sung by distinguished vocalists. The stage was illuminated with gas lights of red, white, and blue – the colors of the Dutch flag. In addition to the zoo's 6,000 members, those present included the Dutch Ministers of Internal Affairs and of Justice, Amsterdam's mayor, representatives of the heads of state of England, France, Germany, and Belgium, the President of the Royal Dutch Academy of Sciences, representatives of foreign zoos, zoological institutions, and animal dealers from England and Germany. This gala – for which the zoo had spared no expense – proved an overwhelming success much like the zoological society that it celebrated. The jubilee represented every facet of the zoo noteworthy for its contemporaries as well as for today's historians. Using zoology, music, and exhibits of colonial nature, *Artis* had emerged as a cultural center that prominently displayed Dutch science and contributed to national pride.



1. The Three Founders of *Artis*

De Drie Oprichters van Artis, J.J. Wijsmuller, G.F. Westerman, and J.W.H. Werleman, made for the 50th anniversary of *Artis*. 1888. E.A. Tilly.

Note the entrance gate in the top left corner. (*Eigen Haard*, 1888)

Founding and Early Expansion

Initiated by three Amsterdam burghers in 1838, the Zoologisch Genootschap *Natura Artis Magistra* was the first modern zoological garden founded in continental Europe (Illustration 1).² As the nineteenth century progressed, *Artis* housed collections of both living animals and traditional natural history specimens. Its animal collections were enhanced by a library and later an ethnographic museum (1861). *Artis*'s collections and zoological publications, and the research it supported, combined to create the zoo's reputation as an important European center for zoology. Furthermore, *Artis* emerged as a major center of Amsterdam's cultural life. Privileged members of *Artis* enjoyed afternoon strolls through the zoological garden and museum, attended instructive lectures on zoology, and listened to

orchestras performing on the zoo's bandstand or in its concert hall. It was granted a royal charter in 1852, after the royal family's annual visit. The history of *Artis* is an episode in the creation of nineteenth-century bourgeois culture in which science played an important role.

The person most important in the founding and later development of the Amsterdam Zoo was Gerardus F. Westerman – book-printer, publisher, and seller, as well as avid bird lover. Stimulated by the zoo in London, Westerman was determined to establish a similar institution in Amsterdam. In 1836, one decade after the founding of the Zoological Society of London, Westerman appealed directly to the royal House of Orange for financial support to establish a zoological garden in Amsterdam.³ King Willem I – respecting the opinion of the mayor of Amsterdam and of the governor of its province – denied his request.⁴ Subsequently, Westerman mobilized two friends and fellow Amsterdammers – the watchmaker J.J. Wijsmuller and the broker J.W.H. Werleman – to purchase cooperatively a small tract of land and to co-found the zoological society in 1838. They drafted a brief prospectus and circulated it among prominent members of Amsterdam society.⁵ They stated their ambition to acquire a “collection of exotic birds and quadrupeds, both living and stuffed.”⁶ Over 100 people attended the first general meeting, and within a week, 400 subscribers agreed to pay the stiff annual membership fee of ten guilders. (In its second year, the annual dues doubled.)⁷

What did *Artis* offer the hundreds of burghers who enthusiastically joined? The original prospectus of the founders, who themselves were amateur practitioners of natural history, stated that the main goal of the newly-formed society was “to advance natural historical knowledge.”⁸ They planned to include living animals in the natural history collections. But their prospectus also explained that “[T]o reach that goal, a well-placed, beautiful location with a large pond, a spacious meeting hall, etc. is already prepared.” Furthermore, refreshments were available at a nominal fee. This new natural history society created a pleasant landscape with exhibits of living animals for members who enjoyed an afternoon walk. In fact, the zoo provided a unique and scenic background for regularly scheduled musical performances and for informal discussion among social equals who were perhaps as likely to discuss the latest trends on the stock exchange as natural history. Acknowledged as *the* cultural center of Amsterdam within a decade of its founding, *Artis* – with a membership that had climbed to 2,500 by 1852 – maintained its identity as an Amsterdam cultural center through most of the nineteenth century. In effect, *Artis* functioned first and foremost as a private social club for the majority of these members who partook in such cultural activities as music and natural history.

With few exceptions, *Artis* remained a closed society. The conditions of membership in the society by-laws document clearly the socially exclusive nature of *Artis* where the most rigid rules applied to Amsterdammers.⁹ While the earliest members simply joined the society, within a year of its founding, potential new members had to be nominated by an existing member. After their names, addresses, and occupations were posted in the meeting hall for at least a week, the general membership voted for (or against) their nomination.¹⁰ In this “ballotage” system, applicants living in Amsterdam also could be blackballed anonymously by members who paid cash to do so.¹¹ Amsterdammers who were not members of the zoo could enter only on Thursday mornings if they had an introduction card from a member and paid the one guilder entrance fee.¹² For those living outside of Amsterdam, a separate membership category existed and these “external” (*buiten*) members were not subject to ballotage. Non-members who did not reside in Amsterdam could also enter the zoological garden for a fee.¹³ This regulation gave many Dutch burghers as well as foreign visitors the opportunity to admire Amsterdam’s zoo. Both the high entrance fees and strict membership rules also ensured that unwelcome (lower-class) non-member Amsterdammers did not appear regularly at the zoo.

In the course of the nineteenth century, the zoo relaxed some of its entrance regulations.¹⁴ As early as 1840, the zoo entered into negotiations with the municipal government about opening the zoological garden to the public.¹⁵ In 1852, *Artis* reached out to the lower middle-class when it instituted the annual “inexpensive month” (*goedkope maand*) of September. In that month, *Artis* was open to anyone able to pay the reduced entrance fee.¹⁶ Thousands of visitors took advantage of this opportunity.¹⁷ While the low fee admitted a class of Amsterdammers not usually seen in the zoo, it was high enough to keep out the poorer working classes.¹⁸ Another unusual occasion led *Artis* to open its gates: the arrival of two hippopotami acquired in 1860. *Artis* was the second European zoo to have these creatures, and they created such a sensation that *Artis* drew up a temporary provision to allow the public to see them.¹⁹ In 1862, in its attempt to improve elementary education, teachers and pupils were given free (but restricted) entrance to the zoo.²⁰ These examples of public admission policies suggest that *Artis* tried to reach a population unable to enjoy membership. However, the policies remained strict enough for the zoo members to feel they belonged to a private society, and for the Amsterdam City Council, as well as other critics, to object to its exclusive organization.

While the income generated by the entrance fees of non-members certainly helped finance the zoological society, the amount of capital support from



2. A View of the Garden with Ferry

De Artis te Amsterdam/Jardin Zoologique à Amsterdam

The canal, then an important thoroughfare for boats approaching the Entrepotdok, cut through *Artis* property. To solve the problem of crossing the water for zoo visitors, H. Angelkot Willink, owner of a shipbuilding yard, had this ferry constructed which he donated to the zoo. Lithograph, 1845. (Collection of the Gemeentelijke Archiefdienst Amsterdam)

its members is striking. In its first four decades, *Artis*'s animal and library collections, real-estate holdings, as well as membership, grew phenomenally. At every opportunity, *Artis* acquired real estate adjacent to the zoological garden. There it constructed buildings for members' use, exhibits, the library, and animal homes. The capital investments, which led to the society's expansion, were made possible by mortgages, rent-free loans granted by society members, member-approved extra (yet obligatory) fees, and direct donations from its members. Donations ranging from individual specimens to large plots of land significantly contributed to the expansion of the Amsterdam Zoo. Members of *Artis*, in general, enthusiastically supported this growth.²¹ A unique example of financial support was provided by the wealthy Amsterdammer Herman Angelkot Willink, owner of a shipyard and zoo board member, who not only donated a ferry to the zoo but also named *Artis* as a beneficiary in his will when he died in 1844 (Illustra-

tion 2).²² Thus, the capital invested in the society came exclusively from the private sector. Ultimately, its vast zoological resources placed the Amsterdam Zoo among the best in Europe for much of the century.²³

A few examples of the costs required to establish the zoo demonstrate the commitment of Amsterdam's bourgeoisie to this institution. A well-paid laborer in the middle decades of the nineteenth century would have earned about seven guilders per week, or 350 guilders per year. *Artis's* first major collection of animals was purchased in 1839 from a traveling menagerie owner at a cost of 34,000 guilders. The collection of animals, in other words, represented 97 laborer-years. In its first three decades, the real estate holdings of the zoo increased approximately 16 times, with the society spending approximately 335,000 guilders on property alone! (see color plate 1).²⁴

The growth of the society's collections also benefited from gifts. In 1869, for example, *Artis* received donations of 275 living animals ranging from leopards and gazelles to turtles, hares, mice, and 16 Javanese apes – an obvious favorite, indigenous to the Dutch East Indies. Its Zoological Museum received 70 gifts including birds' nests, eggs, mammalian horns and skins, and many shell collections. *Artis's* Ethnographic Museum was 100 objects richer after 1869 – the Minister of the Colonies alone donated more than 80 of them. That year, the zoo library received more than 140 gifts, many of them reports and bulletins from scientific societies in 20 different countries but also a copy of Darwin's travel journal on the *Beagle* donated by the author.²⁵

Dutch Historical Context

To fully comprehend the significance of *Artis*, its emergence must be placed in the broader context of Dutch history. In the course of the nineteenth century, colonial expansion and subsequent economic growth contributed to the emergence of new prosperous middle-class elite groups with substantial economic power.²⁶ Dutch society, previously dominated by an established patrician elite, took on a new structure in which a larger population of burghers became increasingly influential in Dutch political and cultural life. These elites ultimately gained political power as one of the consequences of classical liberalism. In Amsterdam, *Artis* was one notable expression of the conscious efforts of middle-class elites to create innovative forms of cultural life. The zoological society became a source of civic and national pride for its supporters who were motivated, in part, by a sense of nationalism.

In the nineteenth century, the Dutch redefined their nation and national culture with nostalgic references to the Golden Age of the Dutch Republic of the Seven United Provinces (1648-1795). During the Republic, the Dutch achieved hegemony in world trade, but by the mid-eighteenth century had begun to experience its decline.²⁷ In the last 15 years of the Republic, civil war broke out between the Patriots, who demanded political reform to restore the greatness of the past, and the Orangists, who continued to remain loyal to the stadholder of the Netherlands, Willem V of Orange.²⁸ No clear resolution to this conflict had emerged before the French army marched over the frozen rivers into the northern Netherlands in January 1795. They met little resistance – and received some welcomes – as they occupied a country already divided after years of turmoil. Furthermore, while the French had annexed Flanders in the southern Netherlands (now part of Belgium), they chose to respect the borders of the Dutch Republic and allow the Patriotic revolution to succeed. The Batavian Republic (1795-1806) was thus born.²⁹ In 1806, however, the Emperor Napoleon appointed his brother Louis Napoleon as King of the Netherlands. Gradually, the French commanded more power; Napoleon ended his brother's reign and annexed the Netherlands in 1810. While the French continued to meet little actual resistance in the Netherlands, the Dutch gradually came to view the French as oppressors rather than the liberators they had seemed in 1795. With the defeat of Napoleon in Leipzig in 1813, French officials fled from the Netherlands, and the son of Willem V returned to be hailed as the symbol of Dutch liberty. Later that year, he was inaugurated as Sovereign Prince Willem, and significantly, he officially declared Amsterdam the capital of the new Dutch nation. Soon after the new constitution had been approved in 1814, the Dutch borders were extended to include Belgium, with Dutch territory doubling as a result. In 1815, Willem proclaimed himself King of the Netherlands.

While unification with the southern Netherlands gave some hope for the revival of the great Dutch nation, it only led to humiliation when a revolt against the Dutch in 1830 resulted in the secession of the southern Netherlands. Later, in the late 1840s, while other European states endured revolutions, the Dutch escaped relatively unscathed with a bloodless constitutional revolution that codified classical liberalism under Willem I's successor (and son) King Willem II. A new constitution and subsequent liberal reforms transformed Dutch social, political, and economic order.

The Dutch economy suffered during the period of French rule. It had already entered a decline in the mid-eighteenth century, and was completely destroyed before the restoration of the monarchy. While the Nether-

lands was occupied by the French, the British controlled previous Dutch overseas territories. Amsterdam lost its position in the European staple market. Growth of most Dutch industries during the French period also halted. However, by the 1830s, economic recovery was visible, and in the following decades Amsterdam reestablished a respectable position in European and colonial trade. The newly stratified bourgeoisie arose in Amsterdam, empowered in part by liberal reforms, and initiated new forms of middle-class culture in nineteenth-century Amsterdam.

In the mid-nineteenth century, the Dutch state and municipalities did not directly foster the growth of cultural institutions. Instead, they excluded science and art from their realms of responsibility, so that the development of cultural and scientific institutions was to emerge primarily from private initiatives. This Dutch policy differed from those in the more powerful neighboring states.³⁰ The French government had long considered it the responsibility of the state to support the arts and science; German states and municipalities contributed to cultural institutions; and Britain had founded and supported them decades before the Dutch government openly refused to do so. It was within this specific national context of the Netherlands that the peculiarly Dutch institution *Artis* was to arise. Dutch burghers, interested in elevating the international cultural reputation of their nation and its new capital city, took the initiative to found, and to fund generously, the Amsterdam Zoological Society.

Innovative Organization: A Successor to Enlightenment Societies

Artis was administered by a board of directors elected by the members. It employed G.F. Westerman as its Director.³¹ The *Artis* board consisted of prominent men who donated their time and expertise.³² Many belonged to notable Amsterdam families and were members of both the new and old moneyed bourgeoisie. These bankers, lawyers, industrialists, and captains of commerce comprised a population of Amsterdammers concerned with improving the image of Amsterdam as the nation's new capital. They contributed to the development of their city by serving not only on the zoo's board, but also on boards of charities, commercial groups, municipal organizations, and national institutions. In Amsterdam, new bourgeois cultural, philanthropic, and commercial institutions developed in the hands of these culture builders.³³

Artis succeeded, in part, because of the new institutional structure it devised. It must be seen as the first of a new generation of Dutch cultural institutions that were less exclusionary than earlier enlightenment societies

but were not yet formally open public institutions. When *Artis* was founded, the Dutch had a rich tradition of learned cultural societies that have been linked to the eighteenth-century ideals of bourgeois culture.³⁴ In the late eighteenth and early nineteenth centuries, many societies inspired by enlightenment ideals flourished in the Netherlands. These are the subject of W.W. Mijnhardt's rich and comprehensive study in which he not only describes the structure, goals, and activities of the most prominent and visible societies but also analyzes their sociocultural role in the broader Dutch as well as European contexts.³⁵ Unfortunately, no comparable scholarship follows the fate of these societies or their successors throughout the nineteenth century as the enlightenment ideals that motivated them faded and the institutional organization of knowledge throughout Europe changed. The organizational structure of societies founded in the nineteenth century – or the changes in organization of the older ones – reflected the new social and intellectual environment. In general, European societies took on new forms and represented new ideals. More specifically, societies in the Netherlands developed a peculiarly Dutch character.

A wide variety of scientific, medical, and literary societies flourished in the small towns and cities of the Netherlands in the first half of the nineteenth century. As Mijnhardt has pointed out, these societies were enormously significant for the expansion of local cultural infrastructures as well as cultural and political socialization.³⁶ The organizational structure and activities of these enlightenment societies and their decline around mid-century have been documented.³⁷ Although not subjected to rigorous analysis, their decline has been attributed to the changing structure of professional science, medicine, and literature. By focusing on the intellectual content of the societies' activities, these authors fail to take into account their social role. No doubt, changes within professional organization did influence the societies' popularity. However, social, political, and economic changes also influenced both the fate of enlightenment societies and, perhaps more importantly, the rise of new institutional forms. Although sometimes cataloged, new nineteenth-century societies have attracted little scholarly scrutiny; historians have not seen them as a continuation of the tradition of private Dutch enlightenment societies. Despite its nineteenth-century reputation among both European zoologists and the cultured bourgeoisie, *Artis* remains conspicuously missing in accounts written by historians of Dutch culture and of Dutch science. H.A.M. Snelders focused on societies devoted to – primarily experimental – physics and chemistry, and from his work we see the general character of early nineteenth-century societies both in their organization and in their activities.³⁸ These small-

town societies were usually founded and populated by local upper- and middle-class men, practitioners of the traditional professions. These were lawyers, clergymen, doctors, and apothecaries usually with little formal training in science.³⁹ Competition between neighboring towns often motivated these pillars of local society whose personal funds supported the purchases and activities of their closed group. Members lectured to each other and performed demonstrations on society-owned instruments; they read and discussed the latest scientific treatises acquired by their libraries. The intellectual content of these enlightenment societies was limited by the knowledge of their members. As one possible explanation for their decline by the mid-nineteenth century, Snelders suggests the growing discontent of members who wanted more expert knowledge but whose access to experts was limited by their distance from the centers of academic science.⁴⁰ He argues that truly successful societies had professors as members and existed in cities with universities and advanced secondary schools. His measure of success, however, is based on the original scientific contributions made by members under the auspices of the society. This measure of success fails to consider the social and cultural meaning of scientific societies for their members. And, as McClelland noted, societies in the Netherlands, in contrast to other European countries, were not centers for the development of new sciences but rather the “outgrowth of non-university provincial culture.”⁴¹ Surely the professionals in numerous Dutch towns never intended to establish research institutions. One must view these societies as the milieu in which local luminaries realized enlightenment ideals in their efforts to improve local cultural life. Snelders was right to describe them as enlightenment societies, but one must analyze them within that tradition rather than judge them against later standards of scientific achievement.

Similarly, M.J. van Lieberg described the founding and reorganization of Dutch medical societies in the first half of the nineteenth century.⁴² In contrast to the lay-membership of scientific societies described by Snelders, Dutch medical societies more obviously played professional and practical roles. As the role of physicians in general scientific societies declined, new medical societies emerged and created forums for discussion of the theory and practice of medicine (although membership was not necessarily limited to medical doctors). The society quarters often housed medical libraries where members read the latest publications and met to discuss them. For society meetings, members prepared reports and lectures, presented pathological anatomical preparations, discussed unusual medical cases, and even gave patient demonstrations.⁴³ Some societies bought microscopes, thereby giving all members access to an instrument few physicians could afford pri-

vately.⁴⁴ Like the members of the scientific societies who felt that every respectable town should have one, physicians founding provincial medical societies also sought recognition, and legitimation, from outside their towns. The mid-century decline of both provincial and metropolitan medical learned societies has been attributed by Van Lieberg to the changing professional roles of both practicing physicians and academic medical professionals whose needs were no longer met within the organizational structure of the medical societies.⁴⁵

Although less learned than the scientific and medical societies, the exclusive society *Felix Meritis* in Amsterdam was the most important cultural club founded by and for cultivated burghers in the eighteenth century.⁴⁶ With the goal to stimulate appreciation of the arts and sciences, *Felix Meritis* staged concerts for its members as well as scientific demonstrations of experimental chemistry and physics. By the mid-nineteenth century, however, its focus had changed to orchestra performances.⁴⁷ By this time, music had become professionalized and *Felix Meritis* members were no longer satisfied with music performed by amateur musicians. The society faced rising costs for contracts with renowned soloists and orchestras who were also performing at competing concert halls that had since emerged in Amsterdam. Hiring professional musicians became unaffordable, particularly as the society's popularity waned.⁴⁸ Originally a very successful society, *Felix Meritis* was facing financial problems by mid-century precisely at the time when *Artis* was flourishing.⁴⁹

The decline of *Felix Meritis* has also been linked to the rising interest in the natural sciences in the nineteenth century – a trend *Felix Meritis* chose to ignore.⁵⁰ For the Amsterdam burgher interested in science, *Artis* was the society to join. At *Artis*, laymen and -women learned about the animal world from their fellow zoo members who were advanced amateur and professional naturalists. They shared their expert knowledge in lectures and publications intended for zoo members. In this time of emerging professionalism, *Artis* drew specialists from its own ranks who could satiate the scientific curiosity of the Amsterdam bourgeoisie. This new institutional structure in which amateurs and experts – social equals – shared the goal to advance natural history and to create a scientific institution of merit is responsible, in part, for its success.

Artis prospered in the period when Dutch enlightenment societies that had maintained their late-eighteenth-century institutional structure began showing signs of decline.⁵¹ The waning societies rarely, if ever, modified their organization to appeal both to professionals seeking a forum for their

academic research and to amateurs interested in intellectual stimulation in a socially comfortable atmosphere. *Artis*, however, did appeal to both of these groups, and succeeded in serving the interests of all members. In fact, the organization of *Artis* appeared so successful in its first year that a group of artists, hoping to advance their own professional interests, founded a private society, *Arti et Amicitiae* (Art and Friendship), and modeled it after *Artis*.⁵²

Arti et Amicitiae was founded in 1839 by professional artists to increase contact among themselves and to advance the visual arts in general. This new society provided professional members with a setting to exhibit and to sell their work, and an acceptable place to which they could take their wives.⁵³ Non-artists paid annual membership fees that approximated those of the zoo.⁵⁴ Although *Arti et Amicitiae* never had as many members as *Artis*, it was popular enough to remain financially viable.⁵⁵ What *Arti et Amicitiae* offered its members reflected *Artis* as the source of inspiration. Professional members exhibited their work at *Arti et Amicitiae* and met their colleagues and social equals in the society building. The lay membership enjoyed art and conversed with its creators in this pleasant atmosphere. Furthermore, professional members lectured on art history or explained their own work on exhibit. *Arti et Amicitiae* became a locus for art instruction by professionals for amateurs. As in the zoological society, *Arti et Amicitiae*'s lay audience had direct access to expert knowledge and the experts had an institutional setting for their work. The professional members of *Arti et Amicitiae* provided the intellectual content for the amateur members who, in turn, provided the financial resources that supported the society.

Conclusion

The innovative institutional organization pioneered by the founders of *Artis* proved attractive to the bourgeois members of both the zoo and *Arti et Amicitiae*.⁵⁶ The combined membership of amateurs and professionals in these societies ultimately promoted social, cultural, and professional interaction and served many interests. This new generation of middle-class cultural societies succeeded the enlightenment societies that failed to adjust their organization to accommodate the interests of both amateurs and professionals; they also preceded large-scale and national cultural institutions that ultimately would contribute to the decline of *Artis*.

When thousands of members joined *Artis* founder G.F. Westerman on the occasion of the zoo's fiftieth anniversary, the society they were celebrat-

ing had entered a decline from which it would never recover. A new generation of specialized cultural institutions devoted to art and music replaced the cultural role *Artis* had played for almost half of the century. Professional science at the zoo, paradoxically successful, moved into the ivory tower of academia and away from zoo visitors. These changing circumstances forced *Artis* to open its garden gates to the public, transforming both its exclusive character and its scientific goals.

CHAPTER TWO

Private Science and the Public Interest

Introduction

In the decades between the founding of *Artis* in 1838 and the founding of the Municipal University of Amsterdam in 1877, conflict plagued relations between *Artis* and the city government. *Artis*'s attempts to expand and construct buildings were thwarted by city policies. Charged with protecting the public interest, the Amsterdam municipal government repeatedly defended its refusal to grant building permits, for example, with the argument that the expansion of the *private* zoological society could not take place at the expense of the public interest. Because the original zoological garden was situated in a non-residential area where the city had previously maintained public pathways and a park-like atmosphere for recreation, municipal authorities argued that the proposed construction of large buildings for the use of zoological society members would result in the public losing this bit of nature in Amsterdam. In turn, the zoo board argued that the expansion of *Artis* as a significant institution for science was, in principle, in the interest of the public. The arguments made about the public interest were inconsistent and took on rhetorical tones. Both their argumentation and decision-making demonstrate contradictions that defy explanation. The city government apparently took seriously their responsibility to protect the public interest and to maintain a distinction between public and private in these decades of classical *laissez-faire* governance. The private sector, rather than the city, was responsible for urban development. While studies have shown that the Amsterdam municipality did at times take initiatives and responsibility for city development that were inconsistent with formal *laissez-faire* policies, this was not the case in its relations with *Artis*.¹

National law regulated the organization of Dutch city governments responsible for protecting the public interest. Each city was run by a mayor and aldermen (*Burgemeester and Wethouders*, or B&W) and a city council (*Gemeenteraad*). Mayors were appointed by the king, and the aldermen

chosen from among the city council members. In the first half of the nineteenth century, the electors of a city had almost no influence on the local government because the patrician city council members themselves elected new councilmen for lifetime memberships.² As a result of the constitutional revolution of 1848, the new Municipal Law (*Gemeentewet*) of 1851 took effect, (semi-)democratizing city governments and allowing for change. The B&W no longer had final decision-making power as the elected city council gained new authority.³ Gradually, the conservative Amsterdam government changed, reflecting broader political and economic changes in the Netherlands. It is striking that, despite the fact that the population in City Hall overlapped greatly with the membership of *Artis*, conflict continued to characterize relations between *Artis* and the municipal government during the zoo's first four decades.

Indifference, Laissez-faire, and the Public Interest

For much of the nineteenth century, the Dutch government took little initiative in stimulating the arts and sciences. While lack of a cultural policy in the first half of the century can be attributed to indifference, after 1848 the state embraced a classical liberal laissez-faire policy for the development of arts and sciences.⁴ The Amsterdam administration followed the national policy and left the task of stimulating cultural life primarily to the private sector. *Artis* was an unusually successful example of an institution born from this indifference, and maintained by the Amsterdam burghers who felt it was their duty to support scientific research and education, and to build an institution that would bring honor to their city and to their nation. While they were prepared to apply their private capital to the advancement of Dutch science, these Amsterdammers were less prepared to accept what they saw as the city's lack of support for their goals.

From the perspective of *Artis*'s Board of Directors, the city was hindering their attempts at expansion. Furthermore, despite the city's claims to support the zoo and its scientific goals, the board felt that the city neither recognized nor encouraged its accomplishments; the city did not appreciate what the zoological society had done for Amsterdam's scientific, educational, and cultural life. During this period, the city never contributed any financial support. More importantly, the city's (rather empty) coffers were enriched, for example, by the significant excise taxes levied on commodities consumed in vast quantities by the zoo animals. From the perspective of the city government, however, because the zoo remained a closed, private society, inaccessible to the general public, the city government would not com-

mit public funds to *Artis*, nor would they favor it politically. However, finances alone cannot account for the disagreement between *Artis* and the city.

The debates between the Amsterdam Zoo and the municipal government suggest that each took a different view of “the public interest.” As long as *Artis* remained a closed, private society, the city would not make concessions to it despite the fact that *Artis* had improved Amsterdam’s scientific and cultural life. Although the zoo chose to disseminate zoological knowledge outside of *Artis* – for example, by working with elementary school teachers – the city often refused to meet the demands of the zoo because its garden gates remained closed to many Amsterdammers. *Artis*, with no funding from the city or the state, expected more support – not necessarily financial – from the city in the creation of a major scientific institution. The zoo board argued that the existence and activities of *Artis* were, by their definition, in the public interest. But the exclusive zoo, responsible for the production of private science, maintained the power to determine who had access to their resources. Therefore, by the local government’s stated criteria, the society’s plans were not made on behalf of all Amsterdammers; the zoo was not acting in the public interest. Because conflicts arose over *Artis*’s ambitions to expand, it is important to situate the zoo’s history within the growth of nineteenth-century Amsterdam, in general, and more specifically, within the development of the zoo’s neighborhood, the Plantage.

***Artis* and Amsterdam’s Expansion Policies**

Prior to the nineteenth century, the city government maintained strict control over Amsterdam’s real estate, construction, and city design in times of expansion. The city government was to relinquish much of this control in the nineteenth century. As a result of its expanding economy, Amsterdam’s population grew from 200,000 in 1830 to over 300,000 in 1880.⁵ By the century’s end, Amsterdam had more than 500,000 inhabitants.⁶ Social and demographic changes transformed the face of Amsterdam dramatically. This transformation took place at the hands of entrepreneurs who enjoyed new freedom to construct whole neighborhoods without strict city regulations. Since few planning regulations existed,⁷ much of the physical expansion of Amsterdam – like the development of the arts and sciences – was left to private initiatives in this era of laissez-faire politics instituted by proponents of classical liberalism after the constitutional revolution of 1848.⁸

Prior to this, in the seventeenth and eighteenth centuries, the city gov-

ernment had controlled all of the real estate within its walls. Much property was owned by the city although rented out in long-term leases. If expansion were deemed necessary, the municipality decided where it would occur, how and where to move the city walls, who would be allowed to construct homes or businesses on the new land, and how these buildings would be constructed. If the unity of the city was represented by the city walls and bulwarks,⁹ then, after 1850, Amsterdam's expansion created disaggregation when the city walls were demolished and the freed land offered for sale, rather than for rent, by the city of Amsterdam.

Several economic factors led the city council to abandon its tradition of strict property control. The increasing demand for – and value of – real estate in Amsterdam's center meant that the sale of publicly-owned property enriched the city's treasury. The notion that the local government need not concern itself with the details or costs of developing that property if the private sector had accepted this burden certainly played a role.¹⁰ The costs of expansion – previously the responsibility of the municipality – were now absorbed by the private sector. For example, owners of land purchased from the city were responsible for planning and constructing the roads, drainage, and bridges in the area – tasks previously the responsibility of the Amsterdam Office of Public Works. The city government realized that this policy saved the city an enormous amount of money while it also generated income from the sale of real estate.¹¹ This profit motive increased in importance in the late 1860s and 1870s when the city government's financial position was weakened by the abolition of excise taxes. Not until the 1890s, after unprecedented growth in the city and remarkable increases in property values, did the municipality cease to sell real estate, issuing long-term leases instead as the city continued to expand.

As G.T.J. Delfgaauw convincingly argued, “In the nineteenth century, unlike in the time of the Republic, the personal interest of landowners had priority over the general interest of the city.”¹² The local authorities, however, argued that they were acting in the public interest when they sold land the municipality had owned for centuries to private individuals and relaxed their zoning and building regulations.¹³ This required a redefinition of the public interest that ultimately limited the city government's formal responsibility for the maintenance of public order, safety, and health, while it ceased to promote actively economic and cultural interests.¹⁴ The B&W and city council chose to limit municipal expenditures, particularly in the last half of the nineteenth century, because the city was suffering financially.

In this period of new property politics and rapid growth, *Artis* and its neighborhood, the Plantage, expanded and changed. The Plantage origi-

nated in the late seventeenth century when the Amsterdam government decided to develop a small area within the city walls that had remained untouched by the rapid growth during the seventeenth century.¹⁵ There it established a botanical garden, the Hortus Medicus (now Hortus Botanicus)¹⁶ as well as a system for private citizens to lease garden retreats away from the busy center of town. The city developed the neighborhood into a recreational park area that became the most important site for bourgeois leisure in eighteenth-century Amsterdam.¹⁷

Located just within the city walls, the relatively undeveloped Plantage emerged as a desirable neighborhood in the second half of the nineteenth century. By mid-century, the Plantage was both a site of industry and picturesque parks with winding paths enjoyed primarily by the well-to-do.¹⁸ Theaters and concert halls provided entertainment for the same class of Amsterdammers as the members of the zoological society. (Interestingly, the zoological society with its own concert hall, meeting place, and café competed successfully with these cultural establishments; none of the other Plantage theaters and concert halls survived nearly as long as *Artis*.) In the early nineteenth century, the original garden lease system was still intact and much of the Plantage was leased to private citizens. The city strictly limited permanent construction on this land, although leaseholders could build simple cottages and provide housing for the caretakers of the properties.

Facing a severe housing shortage, particularly of working-class homes, the local government made a significant policy change when it decided in 1857 to liquidate the Plantage properties. After it did so in 1860, the property developers – unfettered by legal restrictions – did not construct low-income housing but transformed the Plantage into a new genteel, primarily Jewish, residential neighborhood conveniently located near Amsterdam's synagogues yet at some distance from the poor Jewish ghetto.¹⁹ By 1870, *Artis* owned almost half of the property (25 acres or 10 hectares) in the Plantage.²⁰ Furthermore, in the decade after 1860, Amsterdam property values, in general, soared. In particular, those in the Plantage increased eightfold²¹—an increase for which *Artis* later (dubiously) took full credit. Within this context of a changing Amsterdam and an expanding zoo, the city government and the zoological society leaders found little common ground.

Early Discord

In his earliest attempts to found a zoological garden in Amsterdam, G.F. Westerman encountered resistance from the B&W. The mayor refused to support or approve Westerman's initial plans, arguing that the city had "more important, necessary, and less risky concerns" to attend to than a zoological garden.²² King Willem's refusal of Westerman's request to found a zoological garden in 1836 came after the King sought the opinions of the city's mayor and the Governor of the Province of North Holland. The king respected the wishes of the mayor and withheld any official support for the zoo. Despite the disappointment and discouragement received from the House of Orange, Westerman persevered and in 1838 launched the zoological society onto its remarkably successful path, despite the many conflicts with local government.

The B&W and the city council became familiar opponents to the plans for expansion proposed by Westerman and the *Artis* Board of Directors. In the period discussed here, the zoological society developed into a popular and scientific success supported handsomely by continuous financial contributions by the Amsterdam bourgeoisie. Despite the fact that almost every member of the B&W and city council also held zoological society memberships,²³ these ties provided no political clout for *Artis*; the two branches of the city government created some of the only obstacles the society encountered in its expansion period. The recurring and most significant sources of friction revolved around two issues: building permits that were repeatedly denied to the zoo, and a piece of land the zoo desperately wanted to buy from the city.

The first major crisis between the city government and *Artis* occurred in 1839. The B&W expressed fears for the safety of Amsterdammers when animals – particularly the elephant – purchased by the zoo from Cornelis van Aken's traveling menagerie arrived at the city gates. The animals were denied entry into the city.²⁴ (Interestingly, this very same menagerie entered Amsterdam every year for its carnival season, apparently with no restrictions.)²⁵ *Artis* suffered quite a blow because the Van Aken collection was the first major acquisition of exotic living animals for the zoological garden.²⁶ This complex problem required both an immediate solution for housing the animals that had arrived at the city gates just as winter was setting in, and an agreement about appropriate quarters for the animals to be built on the zoo's premises. A relatively easy solution to the first problem arose when the city granted permission for the animals to stay in the Barracks of Oranje Nassau.²⁷ Fortunately, the barracks were empty at the time, and the city deemed them secure enough to house the wild and

dangerous animals. The second problem required far more negotiations.

When Van Aken arrived in Amsterdam, *Artis* had obtained permission to construct only “a stone building, without door or windows, with an iron roof” to house the animals and, although it was a building permit, they were not pleased.²⁸ A new proposal was eventually approved when three members of the zoo’s board purchased the lease for a garden adjacent to the zoo’s property conveniently bordered by a stone wall.²⁹ In May 1840, the city granted a building permit to *Artis* for a wooden shed along the stone wall to house the animals still lodged in the barracks.³⁰ In August, the Gallery of Living Animals opened.³¹ However, despite *Artis*’s ability to assuage local government fears concerning wild animals, new conflicts emerged.

After the menagerie animals had settled into their new homes, the zoo board might have expected a period of relaxed relations with the B&W and city council. On the contrary, a clear pattern emerges from their correspondence: the zoological society continuously requested building permits that were denied by the B&W.³² In 1851, the denial of a permit to build a natural history museum was the final straw in relations between the city and the zoo.³³ The zoological society’s secretary, F.C. Zillesen, wrote a lengthy missive in reaction to this denial in which he articulated the zoo board’s frustration with the local government; he circulated this angry piece widely.³⁴ The predominant accusations leveled at the B&W and city council clearly illustrate the board’s perspective: 1) the city discriminated against the zoo when it employed inconsistent policies to control development in the neighborhood, and with hostility, it denied the zoo building permits for structures – such as cages, fences, and a museum – absolutely necessary for a zoological garden and for natural history collections; 2) the B&W consciously used the zoological society for its own financial gain and never intended to cooperate on any issues of interest to the zoological society; and 3) despite its claims that it would support the zoo’s scientific endeavors, and the fact that *Artis* – by fostering science – served the general good of Amsterdam, the B&W and city council never supported or encouraged the scientific society but impeded its development. This was not the first and certainly would not be the last opportunity for *Artis* to express its fury at the city’s enmity toward the development of the zoological society. In addition to venting the anger felt by the *Artis* Board of Directors and many members of the zoological society, Zillesen reiterated the request for a permit to build a museum and he requested a change in their rental agreement.

Artis wanted the city to delete a clause in their contract concerning the municipal policy of restricting construction in the Plantage. While this

clause originally alarmed the zoo board when they signed the lease, city officials assured them that it was only a formality. Furthermore, *Artis* expected no resistance to their expansion plans because the contract also explicitly stated that the society would be allowed to erect buildings (and cultivate plants) necessary for its development. However, when the B&W later denied building permits, they cited this very clause, which was supposedly intended to protect the Plantage from over-development. (In 1851, the city had not yet embarked on its plan to liquidate property and encourage development in the Plantage.) The city council reminded the zoo that the clause clearly stated that no construction would be allowed on major thoroughfares. They maintained the general policy that buildings were not to interfere with the Plantage landscape and that the view from major streets had to remain unobstructed for the strolling public. Using this argument, the city regularly forbade the zoo from filling in ditches or building high railings, fences, cages, and stables. Such constructions, the zoo spokesman emphasized, could surely be recognized as a priority for any zoological garden. By enforcing this clause, the B&W and city council established themselves as enemies to “...the spirit of the times [that] require continuing progress and development in all directions. For the society – perhaps more than for any other institution – it is a question of life and death whether or not they respond to the demands of the times.”³⁵ And the obstacles faced by the zoo suggested that the city “would sooner thwart a useful establishment than encourage and advance it.”

In this 1851 missive, *Artis* maintained that the municipality financially benefited from, and took advantage of, the society’s comfortable financial position. The B&W and city council were accused of deceitfully leasing property to the society with the purpose of securing rental income while never intending to allow the society to expand.³⁶ In addition, Zillesen contended that the zoo provided another significant income for the city through the excise taxes levied on commodities and supplies. *Artis*, after all, purchased massive quantities of taxed food to feed its animals. Taken together, the rental fees and taxes bolstered Zillesen’s argument that the city reaped direct financial benefits from the zoological society. Zillesen continued by outlining a variety of zoo developments that served the general interest of Amsterdammers.

The zoo’s board argued that their institution provided a number of advantages to the city of Amsterdam and its citizens. Shamelessly, *Artis* took credit for the general improvement of the Plantage since the zoo’s founding. The Plantage had developed as a site for cultural and recreational life, they claimed, *because* the zoo attracted attention to it. They asserted

that values of Plantage property – most of which was still city-owned – had doubled *because of Artis*. Improvements on the city-owned property financed by the zoo included removing old rotting constructions and replacing them with tasteful ones. Furthermore, the general public, i.e., non-members, who strolled through the parks in the Plantage, enjoyed other improvements made on property leased by the zoo. For example, by removing one particular old building and replacing it with a fence, they actually exposed much of their private zoological garden to the curious eyes of the public. The board presented these improvements to the property rented by *Artis* as improvements to Amsterdam in general.

To a certain extent their assertions were accurate. The city benefited directly from the improvements on – and increase in value of – its Plantage property, but the zoo's experiences – and frustrations – were not unique. For example, Amsterdam property values in general were rising in this period, and one can hardly attribute all change on the Plantage – which for a long time had been a popular site for Amsterdam bourgeois cultural and leisure life – to the existence of the zoo. Furthermore, a standard city policy required renters of city-owned land not only to maintain their properties but also to finance improvements deemed necessary by the city. However, the board felt the zoo had done more than its share of improving the property and the neighborhood. Frustrations felt by the ambitious zoo board intensified when the subject turned to the zoo's prominence as a scientific institution – something they felt the B&W and city council never recognized.

This conflict over building permits led the zoo board to express its resentment of the city government for its lack of interest in the contributions made by *Artis* to both science and the spread of scientific knowledge. *Artis* had taken as its goal to “advance natural historical knowledge” seriously as stated in the original prospectus in 1838, and by 1851, they believed they had accomplished a great deal. Even without local government help, *Artis* had achieved prominence among European institutions. To continue to serve its members – more than 2000 Amsterdammers – *Artis* depended on the city to support its expansion. By refusing to permit construction of a natural history museum for the renowned collections of the zoological society, the city undermined *Artis*'s attempts to educate not only its privileged members but also the less-fortunate citizens who could have been reached through the zoo's programs, one of which was to make collections accessible to school teachers. They pointed out that the situation in Amsterdam contrasted dramatically with several other European cities where local governments even offered financial support to their zoology and natural history institutions.³⁷

Zillesen's missive emphasized the benefits the zoological society bestowed on Amsterdam and articulated a general development in nineteenth-century European cultural life. Institutions such as zoological gardens, natural history museums, and other museums served as symbols of a city's intellectual and cultural status and should not be absent from any European city of note. The cultural status of a (capital) city also reflected on the nation. Local and national interests went hand in hand as institutions throughout Europe were founded and funded by various combinations of private burghers, local governments, and the administrations of nation-states. Zillesen maintained that, despite the fact that *Artis* was a private society, it served the people and city of Amsterdam as well as the Dutch nation as a whole. With the final argument defending the scientific and educational roles of the zoological society and the opinion that a government should also treasure and encourage institutions that attracted international attention, *Artis* rested its case. The zoo board reiterated its request for a permit to build a museum and closed with a statement asking the city to end its hostile policies: "There may not yet have been found any reasons to offer a little protection through official channels to an institution that promotes the interests of science and is regarded by many as a jewel for the city and country, and as a resource of local advantage, however, one should at least neither harass nor attempt to make impossible its peaceful existence and further development."³⁸

After much deliberation, and consideration of the advice offered by the B&W, the city council members voted against granting special privileges to the zoo.³⁹ Suggesting that other renters of public land in the Plantage were also bound by the same terms, the city council refused to grant permission for the construction of an obstructive building on city property.⁴⁰ Citing the clause in the contract that stated that nothing could be built on the main streets, the city council simply reiterated its rejection of the building requests.⁴¹ The council also responded coolly to the accusations and vaguely disagreed with the self-congratulatory tone of the zoo board.⁴² Despite this disappointment, *Artis* persisted and responded by submitting yet another request in 1851 to build a museum while expressing their deep regret concerning the previous rejection.⁴³ This conflict was finally resolved when the city council did in fact grant permission for the construction of a museum in 1851; yet, the peculiar conditions of the building permit illustrate the municipality's continuing attempts to demonstrate that they were acting in the public interest.

To allow *Artis* to build its museum, the compromise devised by the city required that people on the street would be able to see inside the museum

within the zoological garden gates. This solved the dilemma caused by a clause in the rental contract that prohibited the construction of buildings on major thoroughfares. While the zoo rented the land in order to expand the zoological garden and to exhibit its collections, the inability to build on that land rendered the rental pointless. Although the city enjoyed a variety of economic advantages from the rental, it also felt obliged to prevent the private society from dominating the Plantage and from interfering with the public enjoyment of the park-like area. Under what conditions would the city government break the clause in the contract and allow the zoological society to build its museum without compromising the public interest? The mayor devised specifications approved by the city council that satisfied both parties. The building permit for the zoological society's cabinet of comparative anatomy, bird gallery, and auditorium stipulated that the building have very large windows on the street side that exposed the building's exhibits so that the public could clearly view the collections displayed inside. The interior of the building had to remain visible from outside the society's fences. Under no conditions could the society, for example, plant hedges blocking the view from the street.⁴⁴ In this way, the city government protected the interest of the public and appeased the zoo board by allowing *Artis* to use the land for its original intention. Although the city council finally granted the society permission to build, it emphasized that this was a deviation from the rental agreement.⁴⁵

But this was only a temporary end to the conflict; a few months later the zoo asked for a building permit for yet another major construction. This time the city not only refused the request but also informed the zoo that they were strictly forbidden to request new building permits. The zoo, predictably, accused the city of limiting the growth of *Artis* and questioned the strange rule that they could no longer submit requests.⁴⁶ *Artis* continued to submit building requests and were actually granted some. Perhaps Zillesen's explosive missive of 1851 produced some results in the chambers of the city council. However, it did not mark the end of conflict. The society's discontent with local government, as expressed eloquently in this particular battle, continued for the next two and a half decades.

While the unique missive and conflict described here at length provides a detailed discussion of the zoo board's perspective regarding the zoological society's interest and importance, there are other examples of the zoo's discontent with the city council. In 1853, the Amsterdam Zoo found a new outlet to reiterate its frustrations regularly. A new city law required Amsterdam's education, arts, and science societies to submit annual reports that described their activities and acquisitions.⁴⁷ These reports seemed to be, on

the one hand, an annoying burden to the society's director. On the other hand, they offered a convenient invitation to express his frustrations and to extol *Artis's* virtues. What information did the zoological society include in these reports? The society described its goals to increase its scientific collections, and to foster the production and dissemination of zoological knowledge. It could attain these goals, it reminded local officials, because of the generosity of its members.⁴⁸ These reports documented the impressive and continuous growth of the collections and of the membership.⁴⁹ The increases in membership demonstrated that Amsterdammers, by joining *Artis*, supported and shared the zoo's commitment to scientific research and education. *Artis* promoted higher education with its ties to the medical professoriate of Amsterdam's academy, the Atheneum Illustre.⁵⁰ It also contributed to elementary and secondary education with programs to instruct teachers of all grade levels.⁵¹ *Artis* shared its collections with both school teachers and atheneum professors. Research performed by the latter on *Artis* specimens brought increased international visibility and prominence to the zoo.⁵² In contrast to the financial support from members, the reports state, local government only contributed to the zoological society's financial burden with its high assessment of city taxes. The zoological society regularly emphasized their need to acquire land on which to display their collections.⁵³ Despite all of these complaints, the zoo did not suffer from lack of capital, although they would gratefully have accepted government funding. Obstacles to their expansion were physical rather than financial. They lacked the necessary adjacent land on which to build because the city government refused to sell them more public property.

Because *Artis* had the resources to expand physically, it despaired over its inability to acquire the property on which to do so. Real estate acquisition is a recurring theme that deserves closer attention because the zoo board, particularly director Westerman, consistently and successfully devised new schemes to acquire new property. By the time *Artis* entered into negotiations with the B&W in the 1870s for a coveted lot where they planned to build an aquarium, the city government knew the zoo desperately wanted the tract and may have used this knowledge in negotiating the final agreement.

Westerman's proposals to acquire land provide insight into the financial security of *Artis* as well as the extent to which he would go to procure property. In 1857, the municipal government decided it was in the interest of the city to sell the Plantage land because Amsterdam was suffering from a housing shortage.⁵⁴ While these sales were intended to stimulate residential development, particularly of working-class homes, the local government

enforced no formal requirements for developers, and so the new Plantage neighborhood constructed in the 1860s became a comfortable, middle-class one. At the same time, the zoo also wanted to expand its genteel society while Plantage real estate went up for sale and development in the area seemed unlimited. Because the city's plans for property liquidation gave purchase priority to current leaseholders, Westerman proposed to offer these leaseholders significant sums of money in his effort to secure real estate adjacent to *Artis*.⁵⁵ It is not clear if these offers were actually made. However, Westerman's plan clearly demonstrates that under his leadership, *Artis* had both the will and the resources to expand its real-estate holdings.

Another more complex example illustrates not only *Artis*'s creative attempts to acquire land but also its efforts to urge the city to improve the area. A metal foundry adjacent to the zoo caused a local uproar that lasted for over two years and ended only when the foundry was totally destroyed by fire. *Artis*, along with other Plantage landowners and businessmen, repeatedly voiced their concerns to the B&W regarding the foundry.⁵⁶ First, the metal works posed a risk both to health – including that of the zoo's animals – and to property as a result of the soot- and smoke-spewing smoke stacks. Second, they believed the foundry posed a fire hazard to the entire Plantage area, and that further damage could include losses to the valuable zoo collections. *Artis* regularly complained to the B&W and city council regarding this foundry; the neighborhood itself had survived two foundry fires. While this foundry probably did pose a threat, one must also recognize that the soot that reportedly fell on the zoo – and on the zoo's visitors – combined with the levels of smoke from a mid-nineteenth-century factory probably did not do much to enhance the allure of the zoo or the emerging genteel neighborhood. Interestingly, the B&W chose not to act in the interest of the zoo or the local residents, choosing instead to side with industrial development.

After the foundry burned to the ground in 1865, Westerman barely let the smoldering remains cool before he began to calculate the value of the factory's property to make a reasonable offer to its owner. He then met with the society's board, which approved a motion to purchase the land – provided the owner chose to sell rather than rebuild.⁵⁷ Shortly thereafter, Westerman began yet another letter campaign begging the city and later the provincial authorities (*Gedeputeerde Staten*) not to give the foundry owner a new permit to build another dangerous factory which – given the devastation caused by the recent fire – clearly posed a threat to both Plantage life and property.⁵⁸ It is not clear if Westerman successfully disguised his desires to annex the land while employing such arguments in his correspondence to the unresponsive local government.⁵⁹

The Quest for an *Artis* Aquarium

Despite obstacles posed by the municipality, by 1868 *Artis* had actually annexed quite a bit of land. In the same year, it asked the city council to allow the zoo to purchase the last available lot adjacent to the zoological gardens. Here is where it longed to construct its aquarium. *Artis* hoped the city council would help the society “answer the increasing demands of science.”⁶⁰ Unpersuaded, however, the city refused to sell the land.⁶¹ In this period when municipal authorities were selling enormous plots of city land to, for example, developers with no clear plans, it appears peculiar that they refused to sell this property to the Amsterdam Zoo. This decision by the city council and the B&W seems to have been yet another action taken in the public interest; as they had argued already so often, the city could not justify selling public property to a private zoological society. Although plenty of property across the city had been sold to both private individuals and developers, these new owners took the responsibility of developing new areas of the city and building much-needed housing – for both working-class rentals and privately-owned middle-class homes. The public interest, as it was oddly argued, was served because the new homes were constructed during a severe housing shortage. However, by selling land to the zoo, they would be relinquishing public property to an exclusive society.

For decades, *Artis* used a variety of arguments in their attempts to convince the local government that the zoo provided the Dutch capital with numerous scientific, educational, and cultural advantages. But regardless of whether or not the B&W and city council members appreciated the cultural and scientific contributions of the Amsterdam Zoo, one fact remained: it was for members only. Thus, while the society probably felt it was treated harshly by the city government, local officials refused to favor a private institution that rarely admitted the public, and when it did, charged high fees. When denying the zoological society’s requests, the municipality explicitly used the public interest argument. Two decisions regarding land rental, for example, neatly illustrate the city’s working definition of the public interest in its negotiations with *Artis*. In 1850, when the zoo wanted to rent more city-owned land on which to expand,⁶² their request was denied by the B&W explicitly because it was not in the public interest to relinquish public space to a private society.⁶³ Furthermore, the city emphasized the necessity of maintaining pleasant areas within the city’s limits where all Amsterdammers could spend both their leisure time and their disposable incomes – in the hope of increasing Amsterdam’s excise tax income.⁶⁴ They stated that ceding control of the land to a private society was considered disadvantageous to the city and its residents.

A few months later, the B&W considered a land rental request from the orchestra conductor J.E. Stumpff, who owned a private club called the Park. Like the zoo, the Park was situated in the Plantage, and provided a meeting place, as well as musical and dramatic performances, for privileged members of Dutch society. Unlike the zoo, however, one day per week it was open free to everyone. This dissimilarity between *Artis* and the Park was actually described in the B&W's recommendation to the city council to rent the land Stumpff had requested for his private society.⁶⁵ The arguments by the city council in favor of Stumpff's request oddly contradict those made against *Artis*. For example, the city council defended the loss of a public recreational area that would result from the construction of the Park because Stumpff's society would be improving the property. In the zoo's case, the city council argued that even if *Artis* improved municipal property, it would not compensate for the loss to the Amsterdammers who were not admitted. The municipality also expressed the hope that, with its decision, the attraction of the expanded Park would keep Amsterdammers in the city and help the city's excise tax revenues recover. While the B&W admitted that the Park primarily served the moneyed classes, the fact that it opened its gates to all Amsterdammers once a week led the B&W to vote in favor of Stumpff's request.

Clearly, the city government's concerns for the public interest were inconsistent. For Stumpff, opening the Park once a week to the public offered enough reason for the city council to permit him to expand his semi-private club. And, on occasion, *Artis* received equally lenient treatment. When, for example, the city council granted the building permit for the museum described above, its proviso that the exhibits be visible to the public outside the zoo gates can be seen as a feeble defense of the public interest, as non-members would theoretically have access to the museum through the windows. Nevertheless, the fact that the zoological society was never open to the public free of charge continued to be cited as problematic by the city government.

The Aquarium and the Founding of the Municipal University of Amsterdam

After the first attempt to buy property for an aquarium failed in 1868, almost a decade passed before Westerman devised a successful strategy to gain access to the land. Building an aquarium remained a priority for *Artis* because it feared losing its leading edge among European zoos, many of which boasted aquariums in the 1860s. In 1872, *Artis* commissioned a survey of northern European zoos and aquariums. The anonymous author of the report expressed his fear that *Artis* would no longer be able to compete with other European zoos if it did not build an aquarium. The situation was a familiar one. *Artis* lacked only the land on which to expand, and, from the author's perspective, it was only the hardheadedness of the Amsterdam city government that prevented *Artis* from reaching its goal.⁶⁶ The author recommended that *Artis* seize every opportunity to expand before other zoos surpassed it; if such growth were prevented, it would lead to "deadly consequences" for the zoo.⁶⁷ The frustrated voice of this *Artis* advocate compared the Amsterdam city council with the board of directors of the zoo in Dresden, noting that they were both "concerned with the trivial while important issues go completely unrecognized."⁶⁸ Neither group understood that zoo improvements were in the interest of their respective cities. And the final warning: *Artis*'s Board of Directors must exploit every opportunity to expand to include an aquarium. "What now can be achieved with willpower and sacrifice" must "not be permitted to become impossible."⁶⁹

Westerman took these suggestions seriously, or simply found that they confirmed his own convictions. In 1874, Westerman drafted a proposal for a general meeting of members where he intended to emphasize the urgency of an aquarium and to gain their approval.⁷⁰ With their backing, he could devise an exchange that might prove attractive to the city authorities. Yet two years passed before he actually addressed the founding of an aquarium in a general meeting.⁷¹ He asked the members four questions:

1) Was it "desirable to establish an aquarium in the nation's capital which met the demands of good taste, and of science, thereby remaining a continuing attraction for the public, and an invaluable resource for higher, secondary, and elementary education?"

2) Should the society try to cooperate with a private individual or other society in this project?

3) Should the society offer the city a laboratory and a lecture room for higher, secondary, and elementary education in the proposed aquarium in exchange for the land? (This would include the stipulation that once the

mortgage was paid off, the land would become the property of the society.)

4) Could the society collect the 250,000 guilders [!] necessary to build an aquarium at a reasonable interest rate? Or should the society decide not to give the city an aquarium and therefore “leave that task up to another [?]”⁷²

In another speech in support of the plan, Westerman assured his fellow members that an aquarium would open a new world for the researcher, and that Dutch professors would no longer be dependent on foreign aquariums for their subject matter. Furthermore, cooperation with educators would stimulate the curious youth.⁷³ The society’s members agreed to take on this task, and Westerman went forward with an offer to the city council that he apparently expected to allay their concerns about devoting public resources to *Artis*.

University Reform

Shortly before Westerman approached the city council with his proposal in 1876, the city had learned that its atheneum would be granted a university charter from the state – a result of nationwide university reform. The new Municipal University of Amsterdam, though mandated by the state, would be funded by the city treasury. The city council, therefore, faced the responsibility of reorganizing the atheneum into a modern university with larger medical and science faculties that required major investments in facilities such as laboratories.⁷⁴

At this point, the city council seemed to recognize the value of the scientific resources at the Zoological Society *Natura Artis Magistra*. The alliance between *Artis* and the city marked the coincident births of the Municipal University of Amsterdam and of the *Artis* aquarium. It also officially linked *Artis* with the academy. Because these changes were an indirect consequence of national university reform, before detailing the terms of the agreement and of *Artis*’s role in the new university, it is useful to turn briefly to Dutch university reform in general, and more specifically, to the efforts of the atheneum trustees to secure a better position for their institution within Dutch higher education.⁷⁵

The Amsterdam Atheneum Illustre had been the city’s institution of higher education since 1632, but because it was not an official university, it did not have the right to grant degrees to its graduates. For example, although medical students who completed their studies at the atheneum could be licensed to practice medicine, they were obliged to take state-

administered exams. Their counterparts at universities fulfilled the exam requirements simply by successfully completing their course work.⁷⁶ In the nineteenth century, the atheneum trustees and some faculty members – particularly the medical faculty – found it increasingly important for the atheneum to compete with the three state universities in Groningen, Utrecht, and Leiden. As early as 1858, trustees of the Amsterdam Atheneum proposed a reorganization to the city council in an effort to attract more students after a dramatic decrease in student enrollment. (Enrollment in an official university held practical advantages over the atheneum; university tuition was much lower, students received academic degrees, and, in the case of medical students, they were spared the burden of state exams.)⁷⁷ The atheneum trustees understood that without the authority to grant degrees, their higher education institution remained unattractive to students and lacked prestige. The nation's capital needed an official university, and the atheneum trustees appealed to the city to found, and fund, a municipal university. In 1860, plans to reorganize the atheneum into a university were submitted to the B&W and city council.⁷⁸ The B&W reacted favorably when they realized the proposed reorganization would not be terribly expensive, although it was less well received by the city council. In 1861, the plan encountered more opposition, and it was finally rejected when the real costs involved were calculated to be much higher than original estimates. Further initiatives for reorganization met similar fates.⁷⁹ Occasionally, the municipality voiced support for the reorganization of the atheneum, but it chose not to increase its capital investment in the institution. In general, it agreed to proposals by the trustees only in cases when no cost to the city was involved.⁸⁰ The strained relations between the atheneum trustees and the city government in the 1860s are reminiscent of those between *Artis* and the municipal authorities.⁸¹

Reorganization plans of the atheneum in the middle decades of the century paralleled national discussions of university reform in general, and those of medical and natural science education more specifically. Particularly after 1868, when the state military medical school in Utrecht closed (as a result of new medical education laws) and its students transferred to the Atheneum Illustre, Amsterdam's medical student numbers soared. Amsterdam boasted not only many medical students and professors but also the largest hospital in the country, in which students received clinical training. In this period of general medical education reform and the institutionalization of clinical medicine, Amsterdam emerged as the center for Dutch medical education. This proved to be a crucial factor in the founding of the university. Opponents to establishing a university in Amsterdam – for

example, medical professors in state universities who feared competition, and the B&W and city council who feared the costs – would soon lose. The state resolved this decades-old discussion when it granted a university charter to the Amsterdam Atheneum Illustre and presented the city with the bill. In 1876, with the Higher Education Act that reformed Dutch universities, the Amsterdam Atheneum was raised to the status of a degree-granting university. Unlike the other state universities, the new Municipal University of Amsterdam remained – like the atheneum – a municipal institution financed from city rather than state coffers.

Confronted with the responsibility of having to finance university facilities for modern medical sciences, clinical training, and an expanded natural sciences curriculum, the B&W welcomed Westerman's proposal to develop the same tract of land the society had attempted to buy in 1868. In exchange for the land, *Artis* offered to provide facilities for university instruction in the proposed aquarium. In the negotiations that followed, the zoological society conceded to every B&W request, while the B&W compromised on nothing. When the aquarium was finally completed in early 1881, on land the society would never own, most medical instruction in anatomy and zoology education in the new natural sciences faculty took place on the premises of, and at the expense of, the zoo.

Westerman offered the city government teaching facilities within the proposed aquarium, limited access to the zoological society's collections for teaching purposes, and limited access for the general public. The provisions spelled out by the city council, however, proved surprisingly more complex. The demands of the municipal authorities were met by strong objections from the desperate zoo, but *Artis* lost on every point. Two of the city's conditions created the most serious disagreements: first, that the land would remain the property of the municipality, and second, that the society's collections be more accessible than the zoo ever imagined.

The *Artis* Board of Directors reacted with disbelief to the provisional agreement proposed by the municipality. While the city would never relinquish ownership of the land, *Artis* would have the right to occupy it under the following conditions: 1) that it be used only for building an aquarium equipped with teaching facilities for university instruction; 2) that the land and any buildings on it would be returned to the city at no cost if the zoological society used the land for other purposes; and 3) that the city would demolish any structure other than an aquarium constructed on it.⁸² *Artis* raised its objections to these terms, chiefly the second. It was anxious to own the property, particularly if it was going to build a 250,000-guilder aquarium on it. However, the city had no intention of changing this stipu-

lation, and the zoo board finally capitulated and grudgingly accepted it. Clearly, decades of struggle between the local government and the zoological society had bred mutual mistrust and suspicion. The issues at stake had changed little between the time of the zoo's inception and these final negotiations for an aquarium.

The zoological society defended the interests of its members with its reaction to the city's stipulation that all of its collections be accessible to university faculty and students. Although the zoo had cooperated actively with atheneum professors from its inception, the suggestion that students also be granted privileges previously enjoyed only by members shocked the society's director. Westerman responded to this requirement from city hall by saying: "...you can't possibly mean that the student population would have the same rights as members but for free!"⁸³ He explained that the consequence of opening all of the society's collections, the garden, and meeting halls to non-members would be that "the important provisions [of the society membership] would lose their meaning."⁸⁴ Westerman offered a slight compromise that, perhaps under special circumstances and under the supervision of a professor, a student could use the collections. The city administrators, however, meant exactly what they said, and the society reluctantly conceded.

Westerman found his last recourse in his *Rules for Use of the Collections* with which the university faculty and students had to comply. Here Westerman outlined the specific services the zoo would provide for university education.⁸⁵ For instruction in zoology and anatomy, the new aquarium would include an experimental aquarium, a microscopy room, and a lecture hall. The collections would be available only under the supervision of the zoological society board, only in the teaching rooms provided, and only on days when classes were in session. Animals that perished in the zoo could be studied only if their skins or skeletons, or preferably both, were returned to the zoological society undamaged. Professors and students of zoology could visit the society on weekdays until noon; students in related fields needed a note from a professor explaining their relevant work. Moving museum objects, or opening cabinets for specimens or books could only be done by or under the supervision of a zoo staff member. And finally, the city remained responsible for any damage caused by professors or students. (Amusingly, the first draft of these rules also stated that live animals were not to be removed from their display areas.) These rules were hardly restrictive, but they demonstrate the attempt by *Artis* to maintain control over its institution.

When the city council was given the financial responsibility for the uni-

versity, it capitalized on the well-known desperation of *Artis* to expand and build an aquarium.⁸⁶ Taken together, the teaching facilities the zoological society would provide, the access to the complete zoological cabinet, library, zoological garden, and aquarium, and the opportunity to dissect deceased specimens from the living collections meant that the zoo, rather than the city, paid the bill for most of the zoological and comparative anatomical education in the new university.⁸⁷ The zoo board met all of the city's demands because it was their only hope for an aquarium. Westerman and the zoo board resented the compromise but felt compelled to accept it. After the agreement was signed, for example, Westerman began to search for legal loopholes. In the margin of the society's copy of the notarized agreement, next to the objectionable clause concerning the restricted use of the land for an aquarium where "classrooms would be made available to the city for university teaching," Westerman wrote "it doesn't say free of charge."⁸⁸

The link between the university and the zoo must also be seen for its legitimating value. However, *Artis* had already developed into an important center for zoological research long before the Municipal University of Amsterdam was founded. In the first three quarters of the nineteenth century, when Dutch universities did not receive generous support from the government, few university sciences had attracted international recognition comparable to that of zoology at *Artis*. In this period when zoology emerged as a field separate from medicine, the fledgling university actually borrowed the prestige of the Amsterdam Zoo for its new zoology faculty.

With the expansion and reorganization of the atheneum into a university, anatomy would no longer be strictly a medical school topic. The atheneum (medical) Professor of Anatomy and Zoology, Willem Berlin, requested that his tasks in the new university be limited to zoology.⁸⁹ As a result, he was appointed Professor of Zoology, Comparative Anatomy, and Physiology in the new Faculty of Mathematics and Natural Sciences. Anatomy, as a separate field, remained in the Medical Faculty, and Max Fürbringer, apparently attracted to *Artis*'s collections, was appointed to the post.⁹⁰ As odd as it sounds to us in the twenty-first century, this nineteenth-century case suggests that Amsterdam's university zoology was actually legitimated by its alliance with the Amsterdam Zoo.⁹¹ Thanks to its cooperation with *Artis*, the university was assured a prominent role in European zoology.

Conclusion

Despite *Artis*'s sincere efforts to disseminate zoological knowledge, it wanted to serve the general public on its own terms and not the city's. As building an aquarium became increasingly important for *Artis* to maintain its stature among European zoological gardens, it compromised its private status in the final agreement with the municipality. *Artis* was forced to make its private facilities (semi-)public and to serve university educational needs on the municipal government's terms. By doing so, however, *Artis* gained the opportunity to build an aquarium and also gained academic status as its role in higher education became official. The success of private science at *Artis* demonstrates that in mid-nineteenth century Netherlands, scientific research and education were not the exclusive domain of academia. In the last decades of the century, however, as Dutch science professionalized, *Artis* changed its policies in its new efforts to contribute to zoology. Private science at *Artis* could no longer be sustained.

This story also illuminates the changing boundaries between public and private in the nineteenth century. *Artis*'s transformation into a public institution was gradual, beginning in 1851 with the few inexpensive days when non-members could visit the zoo.⁹² In the eyes of its founder G.F. Westerman, the ultimate compromise of the exclusive character of *Artis* membership came when university professors and students – though an elite population – gained access to all zoo facilities without formal membership.

After Westerman's death, more concessions were made to admit the general public. Only in the early twentieth century did *Artis* open to the general public and come to resemble a zoo we might recognize today.⁹³ This case is not unique; as signaled by Blackbourn, many forms of cultural life in Europe went through similar transformations.⁹⁴ As local and state governments took on new roles in supporting scientific and artistic cultural life, zoos, music performances, and museums became increasingly more public, catering to ever broader audiences. The case of *Artis* specifically shows how this gradual shift of cultural life from the private to the public sector occurred. This general change in European cultural life as played out in Amsterdam ultimately had major consequences for *Artis*.

A second boundary blurred by this story of Dutch university reform is the one between the city and the state. In a country where all universities required state charters, the university reform that modernized *Dutch* research and higher education was a national endeavor. The new university in Amsterdam, however, would be funded completely – and not by choice – by the municipality. The university in Amsterdam – like other cultural institutions, including *Artis* – was expected to confer status on both the

capital and the nation. It thereby satisfied both local and national (public) interests. We will see that as *Artis* promoted zoological studies, it, too, strove to bring renown to both the city and the nation through science.

CHAPTER THREE

Internationalizing Nationalist Science¹

Introduction

Without reaping any obvious benefits, the Amsterdam bourgeoisie financed the development of the professional scientific identity of *Artis*. Its members, content with their access to the zoological garden and museum, also supported the scientific endeavors of their zoological society to build the institution that was to become “the most beautiful pearl in the crown of the city of Amsterdam.”² During the second decade of *Artis*, the Board of Directors – with some prodding from Westerman – consciously expanded the serious scientific commitment of the zoo. The natural history activities of *Artis* had to extend from displays aimed at amateurs, to professional zoological studies so that *Artis* could compete with rival institutions in neighboring countries. Only after Dutch science was recognized by scientists abroad would the zoological society become a source of national pride. To achieve these scientific and patriotic goals, the Board of Directors employed a successful strategy in which scientific investigations supported by *Artis* placed the zoo on the European map of respectable, serious zoological institutions. How would this new and unique type of institution integrate itself within the mainstream of international science? In its early decades, *Artis* developed the requisite facilities for scientific investigation: it acquired research collections; it founded specialist journals that were widely read and well-reviewed; and its library became an important resource for researchers. Without having direct ties to academic science, *Artis* appealed to professional naturalists whose involvement with the zoo helped *Artis* become a center for zoological research. The ultimate legitimation of its scientific achievements came in 1877, when the Amsterdam Atheneum Illustre was elevated by the state to the status of a degree-granting university and the zoo collaborated with the new university. After 1877, Amsterdam medical school students at the new municipal university received their anatomy lessons on the premises of the Amsterdam Zoo. Furthermore, a chair in

zoology was created, and the first professors of zoology in Amsterdam also held official posts at *Artis* where scientific work continued to revolve around both the living and preserved natural history collections.

While the Amsterdam Zoo was founded “to advance natural historical knowledge in a pleasant and illustrative manner,” the precise meaning of this phrase remained unarticulated throughout the zoo’s first decade.³ Early activities ranged from lectures for the lay membership to systematic anatomical research on deceased zoo animals. These sporadic and unfocused scientific activities led critics to question the alleged scientific character of the zoo.⁴ In reaction to such criticism, the Board of Directors consciously strove to legitimate *Artis* as a reputable zoological institution during the zoo’s second decade. Most importantly, the zoo established a zoological committee comprised of luminaries in Dutch zoological studies. This committee and the increasing support it enjoyed from the zoo demonstrate the board’s choice to foster advanced professional zoology and to minimize amateur natural history. Furthermore, its success suggests that the general membership, although excluded from many zoological activities, supported the policy.

The choice to support a Zoological Committee proved an efficient means to develop an institution of international repute. Most of the members had already established themselves within European natural history circles; they were, in effect, an old guard of naturalists who loaned their scientific reputations to the zoo when they agreed to serve as members of the committee.⁵ In return, they enjoyed privileges that served their own career interests. Most importantly, the zoological committee received full responsibility for the first Dutch journal of zoology, *Bijdragen tot de Dierkunde* (*Contributions to Zoology*), founded in 1848, coincident with the founding of the committee.⁶ This publication, along with the second Dutch zoology journal, *Nederlandsch Tijdschrift voor de Dierkunde* (*Dutch Journal of Zoology*) and a few monographs, proved to be not only important new outlets for the naturalists to publish their work but also crucial for the development of *Artis*’s scientific reputation. Although it took the *Artis* Board of Directors ten years before agreeing to promote professional science at the zoo, once they began, their commitment to zoology continued to grow.

Three people figure prominently in the development of science at the zoo: Gerardus F. Westerman, the zoo’s primary founder and decades-long director (Illustration 3); Hermann Schlegel, vertebrate systematist, and later Director of the Rijksmuseum of Natural History (RMNH) in Leiden (see color plate 2); and the medical professor Willem Vrolik, who taught and did research in pathological and comparative anatomy at the Amsterdam



3. Gerardus F. Westerman
Portrait of Dr. G.F. Westerman, 1869.

Atheneum Illustre (see color plate 3).⁷ All three held prominent positions in European scientific circles. Teamed together in the Zoological Committee and as the Editorial Board of *Bijdragen*, their efforts to establish science at the zoo, and to gain recognition for the institution, could hardly fail.

When Westerman founded *Artis*, he wanted to create a serious zoological society that fostered knowledge. In fact, his own collection of living birds comprised the first animals displayed at the zoo. While not academically trained, he did ornithological research that was on a par with professional naturalists throughout Europe. Ultimately, he enjoyed a reputation for his vast knowledge not only of ornithology, but also – and more uniquely – about zoological gardens.⁸ Westerman's lifelong commitment to the Amsterdam Zoo, and to the science of zoology, did not go unrewarded.⁹ The

most significant honor bestowed upon him was an honorary doctorate from the University of Giessen in 1851, perhaps instigated by his friend, Professor of Anatomy and Physiology Theodor W. Bisschoff. This citation, signed by Justus Liebig, describes the two outstanding contributions Westerman made to science: he founded both *Artis* and, more importantly, the journal *Bijdragen*.¹⁰ The honorary degree from an important university of the period clearly demonstrates that Westerman, the zoo, and *Bijdragen* indeed served the honor of their fatherland.

Hermann Schlegel (1804-1884) wrote prolifically for lay as well as professional audiences, illustrated natural history works with unusual skill, and was well known in European scientific circles primarily for work in ornithology.¹¹ Although he lacked academic training, his accomplishments were recognized in 1832 when, at the age of 28, he received an honorary doctorate from the University of Jena. Schlegel's involvement with the Amsterdam Zoo began as early as 1839, when he offered to organize the amphibian collection of the zoo's cabinet.¹² A few months later, Westerman proposed that the board award Schlegel an honorary membership.¹³ Ultimately, Schlegel's major contribution to *Artis*'s institutional development rested with his writings and illustrations that appeared in zoo publications. As an active member of the zoological committee, he also served on the editorial board of *Bijdragen* and wrote many articles for both *Bijdragen* and the *Tijdschrift voor de Dierkunde*.

Willem Vrolik (1801-1863), enjoyed renown for his work in both pathological and comparative anatomy.¹⁴ As Nicolaas Rupke has pointed out, "Vrolik's international reputation as an expert in simians was reflected in the invitation to contribute the major entry on 'Quadruman' in Todd's *Cyclopedia of Anatomy and Physiology*..."¹⁵ Vrolik also contributed the "Teratology" entry in Todd's *Cyclopedia*, attesting to his prominent position in European pathological anatomy as well. For his book, *De Vrucht van den Mensch en van de Zoogdieren, Afgebeeld en Beschreven in Hare Regelmatige en Onregelmatige Ontwikkeling / Tabulae ad Illustrandum Embryogenesis hominis et mammalium, tam Naturalem Quam Abnormem*,¹⁶ he was awarded the Legate of the Baron de Montyon from the French Academy of Sciences in 1850.¹⁷ While Vrolik based much of his own research in embryological development on his and his father's pathological anatomy collection, there is no doubt that access to zoo collections stimulated his research.¹⁸ Most significantly, his access to apes that died in the zoo advanced his scientific standing at a time when few anatomists had the opportunity to dissect such a wide variety of exotic creatures. Attesting to the importance of Vrolik's simian work – some performed with J.L.C.

Schroeder van der Kolk, medical doctor, anatomist, and Professor at the University of Utrecht – is the fact that his findings played a role in the debate on the hippocampus staged between Richard Owen and Thomas Henry Huxley. In this debate, Owen and Huxley both considered Vrolik's work definitive and focused their disagreement on each other's translations of his work, which was originally published in French.¹⁹ Unfortunately, Vrolik's death in 1863 brought an end to this successful career and his contributions to the scientific zoo. His colleagues, Westerman and Schlegel, both lived on into the 1880s and were able to witness more of the results of their efforts than Vrolik could in his own lifetime.

Willem Vrolik was among the first medical professors of the Amsterdam Atheneum Illustre who was offered an honorary zoo membership, which he accepted with gratitude.²⁰ Soon thereafter, he gave a 14-part lecture series for zoo members at the Anatomical Theater where he also taught medical students. In these well-attended lectures on mammals, he exhibited and focused on animals from *Artis*; he drew his theoretical framework from both Cuvier, whose lectures he had followed in Paris, and the Leiden Cuvierian and Professor of Zoology Jan van der Hoeven.²¹ At the first lecture of this series, and every series for the following twelve years, Vrolik explained the importance of the city's zoological institution for science.²² Anatomical studies of zoo animals would bridge many gaps in scientific knowledge. He also emphasized: "Do not believe that I appreciate the animals only after their deaths. They [while alive] will also give rise to much research..."²³ Habits, sexual behavior ('morals'), and eating patterns could be observed, all of which would answer questions about these animals. One example he gave illustrates the importance of a living, particularly exotic, collection: referring to the zoo's female kangaroo, Vrolik explained that observations of living specimens would clarify the obscure reproductive habits of this peculiar marsupial, once, of course, a male kangaroo was added to the collection.²⁴ Despite Vrolik's claim, living animals received little serious attention. Instead, Vrolik focused on dissecting zoo specimens after they had died.

Vrolik and the Scientific Association for the Advancement of Natural Historical Knowledge

In the zoo's first years, when Vrolik envisioned his potential contribution to zoo-based science, the Board of Directors gave priority to solving the practical problems of the zoo's physical setting. Although the core of a natural history cabinet was more or less in place at the founding of the zoo, the liv-

ing animals had not yet been collected. Furthermore, as living animals were added to the zoo, their lodgings also needed to be built. The board, reasonably enough, devoted most of their attention and capital resources to opening the zoological garden. As soon as it was clear that the garden gates would open in 1840, Westerman presented a proposal by Willem Vrolik to the zoo board to organize a scientific committee comprised of a few zoo members. The board was not yet ready to make a capital commitment to science, and it rejected Vrolik's proposal for lack of resources.²⁵

After the board refused to support this scientific committee, Westerman proposed that the zoo confer a special title on Willem Vrolik in recognition of his services.²⁶ With the support of two board members, both active in natural history, he suggested Willem Vrolik be named the *Artis* Commissioner of Anatomy.²⁷ This suggestion provoked a debate among the board's seven members regarding the policy for appointing advisors. As a result, Vrolik was eventually named an Honorary Advisor, a title that did not recognize his special scientific contributions.²⁸ Neither Westerman nor Willem Vrolik were happy with the unwillingness of some members of the zoo board to recognize formally Vrolik's scientific services to the society.²⁹ Taken together, these two rebuffs may have led to Vrolik's annoyance and subsequent reluctance to conduct another lecture series when the board asked him later that year.³⁰

After their first attempts to develop zoological science at *Artis* were thwarted, Westerman and Vrolik established an independent society, the *Wetenschappelijke Vereeniging ter Bevordering der Kennis van de Natuurlijke Historie* (Scientific Association for the Advancement of Natural Historical Knowledge); they took this association's name literally from the goals stated in the original zoo prospectus. All three of the zoo's founders, who also served on the zoo board, were members of this association, which began meeting monthly in 1841. The prime mover of the association and its chairman, Willem Vrolik, expressed his conviction that the association, should develop formal ties with the zoo.³¹ Eventually, this happened. However, for seven years, the independent association was a forum where professional and amateur naturalists shared their research or reflections on matters of natural history. In general, zoological talks dominated the meetings. During this time, although *Artis* did not support the group directly, it officially granted permission for the association members to use specimens from the zoo collections – both living and dead.³² As a result, zoo animals made regular appearances at the association's meetings in the Amsterdam Atheneum Anatomical Theater. A few examples will illustrate the kind of science that was discussed in these meetings and the role zoo animals played. When

Vrolik proudly exhibited the skeleton of a rattlesnake that he had prepared for the zoo's natural history museum, he also speculated about its poison glands.³³ This sparked lively discussions on the nature of snake poison among his association colleagues, some of whom initiated further studies on the physiology of snake poison as well as on snake skull anatomy.³⁴ On another occasion, Vrolik borrowed from the zoo both a mounted specimen of a lemur and a living one to illustrate his discussion of the genus.³⁵ As the curator of the zoo's living collection, Westerman reported on new acquisitions, including observations of the behavior of the eleven capybaras residing at the zoo.³⁶

While some of these examples suggest that members studied living animals, with a focus on their physiology, anatomical structure, and behavior, they are the exceptions rather than the rule. It was not until after the animals' deaths that the most serious, traditional scientific research commenced. Willem Vrolik, as the only accomplished anatomist among them, may not have been granted the title of Commissioner of Anatomy of *Artis*, but he did dissect zoo animals more often than anyone else. Such valuable research material helped him earn a local and international reputation in comparative anatomy. It also provided rich material for his presentations at association meetings. Upon the death of one young elephant, Vrolik dissected it at the anatomical theater and prepared various organs and its skeleton for the zoo's natural history museum. At a meeting of the association, this animal took a prominent place both literally and figuratively. Its skeleton was contemplated and discussed. Vrolik exhibited his anatomical preparations and remarked upon its intestines – remarkably large in proportion to its stomach. Another association member presented his observations of elephant teeth and tusks, presumably the results of his study of the same animal.³⁷ This elephant, and the chimpanzees, lemurs, crocodiles, and many other animals that faced similar fates must have been fascinating material for the members of the association to observe and review. While the availability of such specimens created rare opportunities for an anatomist such as Vrolik, his dissections provided invaluable information for the zoo.

Vrolik's access to animals, therefore, served not only his curiosity and professional interests but also the interests of *Artis*. In the cases of the rattlesnake and elephant, Vrolik returned the anatomical preparations to *Artis* for its museum; Vrolik performed this service on many of the zoo animals he dissected. He also acted as the zoo coroner because he regularly attempted to establish the cause of death of zoo animals and to report his findings to the board.³⁸ In the scandal surrounding *Artis*'s first director

Reinward Draak, Vrolik made it clear to the board that he was willing to report officially that a tiger had died of starvation in order to establish Draak's negligence.³⁹

Willem Vrolik remained committed to a zoo-based zoology despite the board's rejection of his original proposal for a scientific group in 1840. At the first meeting of the association, he urged the group to convince the zoo board that the association should be officially affiliated with the zoo. And, while *Artis* seemed to encourage the development of the association indirectly, the association wanted *Artis* to know that they hoped for closer ties.⁴⁰ However, it would take more than one attempt, and over six years would pass before the zoo and the association would reach an agreement.⁴¹ In 1844, the zoo did offer their meeting room to the association, but the offer was turned down, and animosity was generated.⁴² Three years later, Westerman suggested to the association that they initiate discussion with the zoo: "... in the interest of science [rather than his personal interests], I continue to regret that a union with the Society *Natura Artis Magistra* in the past, for a variety of reasons, failed to happen. Still, the hope continues to be cherished that this vision will be realized at some point."⁴³ He offered to talk with his colleagues on the *Artis* board, and the association named a committee to investigate how such an agreement might be worked out.⁴⁴ This time, Westerman was successful in helping to forge the union between the association, of which he was a member, and *Artis*, where he acted as both Director (after Draak was dismissed) and board member.

In 1847, science moved from the anatomy theater to the Amsterdam Zoo when the association, reached an agreement to become *Artis's Commissie voor Bijdragen tot de Dierkunde* (Committee for Contributions to Zoology).⁴⁵ While in principle, the association was moved part and parcel to the zoo, some original members were barred from the new committee because they were not – and could not become – zoo members due, it is suggested, to the society's by-laws.⁴⁶ Ironically, in 1844 the fact that some association members could not be *Artis* members had been one of the vague reasons given when the association decided *not* to accept the zoo's offer to meet in *Artis*, but the same issue held new meaning in 1847.⁴⁷ New participants of a more professional caliber were added to the committee, as the agreement reached between the association and *Artis* explained that "[T]he committee shall concern itself exclusively with pure scientific work regarding zoology."⁴⁸ And they would do this by meeting monthly at the zoo to present their original research. Furthermore, this new committee would be responsible for the publication of the first Dutch zoology journal, *Bijdragen tot de Dierkunde*, that would be published under the auspices of the zoo and at

the zoo's expense. In time, the move from the anatomy theater proved to be more than a mere change in venue. It also mirrored a change in character, as the new committee devoted itself to professional zoological concerns and distanced itself from both non-zoological and less learned natural history.

Zoological Committee Founded

The new zoological committee brought together prominent naturalists from universities and from Leiden's Rijksmuseum of Natural History (RMNH). In the invitation extended to prospective new members (at Westerman's and Vrolik's suggestion), the board articulated its new scientific goals for *Artis*. *Artis*, they explained, wanted to make itself useful for the practice of zoology in its "entire scope." They wanted the committee to serve the interests of science and to contribute to the flourishing of the zoological society. Furthermore, they promised:

If this new attempt at progress is crowned with the desired consequences after taking the direction chosen, and the scientific labor of the committee yields rich fruit under your willing cooperation, this, too, would be an extra incentive for the board to continue to give their serious attention and to apply uninterrupted diligence to achieve the maintenance and expansion of an institution that can yield so much good and beauty for the national culture.⁴⁹

Thus, the board members, united in their commitment to developing the national culture, believed that an investment in the zoological committee would not only demonstrate the zoo's commitment to science but also contribute to Dutch culture in general.

At the first zoological committee meeting, elections of its editorial and administrative boards took place. It comes as no surprise that Vrolik and Westerman were elected to both the governing body and the editorial board;⁵⁰ significantly, Hermann Schlegel became the third member of the editorial board. Vrolik and Westerman, after issuing further invitations for membership, later assured the *Artis* Board of Directors that "[the board's] praiseworthy efforts have already met with positive responses from men famous in the field of zoology."⁵¹ These newly-appointed members supported the zoo's goals by agreeing to participate in the committee meetings and in the production of the journal. Monthly meetings commenced, in which members presented their research to their peers and discussed a plethora of administrative and financial details for the journal, as plans for *Bijdragen tot de Dierkunde* materialized.

The meetings of the new committee differed dramatically from those of the natural history association described above. Some presentations that association members had heard, such as “Reflections of the Night Watchman of the Zoo in Verse,”⁵² would have been out of character in the zoo’s new committee. Instead, descriptions and taxonomies of new species and the comparative anatomy of animals not previously studied proved more appropriate topics in this new forum. Natural history collections held by both the zoo and the RMNH were shared, and as a result, studies presented at zoological committee meetings and published in *Bijdragen* often described specimens from both museums, or recently dead animals from the zoo. Noticeably missing were studies of living animals. Physiological interest among the committee members was nonexistent; just as in the previous association, the pleas of the young progressive medical doctor Jan van Geuns for physiological studies to complement traditional comparative anatomy garnered little support.⁵³ The scientific benefits Vrolik claimed would arise from the study of living animals never materialized and animal behavior was not systematically studied at *Artis* until the twentieth century. This group, although working within a new kind of zoological institution, marshalled the forces of an established, aging generation of naturalists.⁵⁴ Although not revolutionary, the work presented by the most active and advanced naturalists in the committee – namely Schlegel, Westerman, and Vrolik – appeared in the new journal *Bijdragen tot de Dierkunde* and indeed communicated new scientific knowledge. Furthermore, we will see that similar reasons motivated *Artis* both to support the new committee and to found a scientific journal.

The Journal *Bijdragen tot de Dierkunde* (Contributions to Zoology)

The first issue of *Bijdragen* appeared in September 1848, within one year of the founding of the zoological committee. In it were two contributions by Schlegel and one each by Willem Vrolik and J.L.C. Schroeder van der Kolk. That this was an *Artis* publication could not be missed. The title page presented the title of the journal in a font just slightly larger than the name of the zoological society. Furthermore, the issue’s foreword presented a version of the history of *Artis* that attributed the society’s commitment to pure science to the initial plans of the founders. It notes that when the zoo was founded, the institution’s “real goal was understood by few, perhaps only by the founders and a few practitioners of science.”⁵⁵ Since the founding of *Artis*, the goal to acquire collections had been achieved and much interest in zoology stimulated.

Despite the fact that the collections provided rich material for [scientific] practice and research, stimulated the desire for knowledge of the animal world for many, and provided motivation for spreading light over the dark points [*duistere punten*] in the broad area of science, the goal of the founders could not be reached as long as no *pure scientific* fruits were produced from the field they had sown. (Italics added.)⁵⁶

The purpose of the institution, therefore, was to contribute to pure scientific pursuits.

The board of directors of the society, completely convinced by the conviction, believed the best way to attain this goal was to appoint a committee from the ranks of their honorary members, commissioned with the publication of a work titled *Contributions to Zoology*. Their call to duty was heard, and a circle of the learned practitioners and lovers of Natural History united with the board, with the industry, unanimity, and the characteristic features of one who loves *science for the sake of science*... (Italics added.)⁵⁷

With the founding of this journal in 1848, the editors described some of *Artis*'s scientific goals that had never before been articulated – or acted upon – in the zoo's first decade. In fact, the board had clearly refused to support scientific endeavors before 1848, and the founders – all amateurs – initially did not state what kind of scientific future they envisioned for this zoological institution that flourished only because of the wide *popular* support it commanded. One might expect that the zoo had intended to “spread natural historical knowledge” among its thousands of members at their lay level, and that this had remained a possibility throughout the first decade. However, the board ultimately chose to support advanced research most actively and to publish a learned journal in its strategy to legitimate *Artis* in the world of science in Europe.

Not only did the foreword to the first issue of *Bijdragen* imply that science for the sake of science had always been a goal of *Artis*, but it also attributed to science the potential to contribute to national pride. The board of the zoo and the editors of the journal hoped the scientific labors presented in this initial issue would come to the attention of those who appreciated “the spread of useful knowledge,”⁵⁸ and that the society would, therefore help “maintain the honor of our fatherland in a worthy manner,” reiterating verbatim the creed of the royal Dutch House of Orange and Nassau.⁵⁹

By presenting the scientific contributions of the zoological committee,

Bijdragen became a vehicle for carrying Dutch science into the international scientific world, thereby legitimating Dutch science and the identity of *Artis* as a national cultural institution. Such aspirations should come as no surprise in the stormy year of 1848, during which some European countries endured revolutions, and the Dutch narrowly escaped bloodshed with their own constitutional revolution. During *Artis*'s first decades, Dutch nationalist sentiments increased, and supporters of this cultural institution wanted to contribute to the accomplishments of their nation. In this context, the nationalist ambitions of the *Artis* Board of Directors found expression in their support for professional scientific inquiry.⁶⁰

With the cooperation of the Dutch natural history community, and the compliance of the zoological society's members, *Bijdragen* – financed by the zoo – became a reputable specialized natural history journal. Some members of the committee took advantage of their access to the zoo's collections of living and dead animals as well as the library. They presented their research first in the committee's meetings, and then submitted their work immediately for publication, a practice seen in local scientific societies in German states as well.⁶¹ Members of the zoological committee then served as reviewers for the manuscripts, as each manuscript was assigned two referees – a practice uncommon in the day.⁶² Despite the fact that the zoological committee was composed of close associates and colleagues, submitting text did not guarantee its acceptance. While most submissions were accepted for publication, there were cases of rejections.⁶³ In general, however, the articles that appeared in the pages of *Bijdragen* were written by zoological committee members who studied and described animals from *Artis*'s collections (sometimes compared with specimens from the RMNH), reported their findings at meetings, and submitted them for publication. These naturalists welcomed this new opportunity to publish their work in a specialized Dutch journal.

A handful of contributors published most of the articles in the first nine volumes that appeared sporadically between 1848 and 1869.⁶⁴ In this period, 29 articles were written by 11 authors. Hermann Schlegel alone published eight, or 27.5 percent of the total, followed by Westerman's six (20 percent), while H.S. Pel (b. 1819), a civil servant in Ghana (Gold Coast) responsible for the extensive West African collection in the RMNH, wrote four (14 percent). Willem Vrolik contributed three articles, two of which were co-authored by Schroeder van der Kolk, and Jan Adrianus Herklots (1820-1872), the academically-trained curator of invertebrates at the RMNH, also contributed three articles. The remaining five articles, each a lone publication by a single author, included contributions by Professor Gerardus Vro-

lik (the father of Willem and Professor of Medicine at the Amsterdam Atheneum); C.J. Temminck, director of the RMNH; A.J. d'Ailly (1793-1851), a wealthy advanced amateur entomologist who had volunteered his time at the RMNH; and A.H. Verster van Wulverhorst, an accomplished hunter, and a friend of Schlegel's, with whom he wrote a book on falconry. Together these authors and most of the committee members represented an established group of Dutch naturalists specializing in taxonomy and comparative anatomy.⁶⁵ Despite their age, or perhaps as a result of their career accomplishments, these academic and museum naturalists were responsible for the success of the early scientific endeavors of *Artis*.

Language and the Nation

Artis publicized its existence and its contribution to the national scientific culture via *Bijdragen*, which communicated new scientific knowledge discovered by Dutch naturalists who worked on the zoo's unique collections as well as those of the RMNH. While *Artis*'s Board of Directors consciously sought to elevate the nation's scientific reputation, and to compete with London and Paris, the developing sense of national identity also brought with it a sense of pride in the Dutch language. In this period, language took on new meaning as national boundaries and new national governments became distinguished, in part, by language.⁶⁶

Nineteenth-century European scholars were trained in many languages, and could read the literature of fellow scholars in neighboring countries. After Latin ceased to be the language of science, journals and books in major countries usually appeared exclusively in the native language. Scholarly journals regularly translated foreign articles into their national language to report important publications from abroad. By the mid-nineteenth century, Dutch scholars were making their work accessible to foreign audiences by writing in French or in Latin, and occasionally in German or English. This was not simply a matter of choice, but one of necessity when writing for journals published in other countries. In 1838, when the first issue of the Dutch journal *Bulletin des Sciences Physiques et Naturelles en Néerlande* appeared in French, its reviewer in the *De Gids* explained that this new journal was published in French to bring attention to Dutch science because, in the previous 25 years, Dutch science had fallen into obscurity.⁶⁷ During this period Dutch was not commonly recognized as a language in which to communicate scholarly findings. However, during the mid-nineteenth century, as national pride increased, so too did the feeling that one's native language must (and could) be used among fellow countrymen in academic circles.

Seeing the cultivation of one's native language as a sign of patriotism was not new during this period.⁶⁸ In the case of the Netherlands, discussions about the importance of the Dutch language took place as early as the late eighteenth century among representatives of the emerging academic discipline of Dutch linguistics. They identified the need to raise the status of Dutch, and drew links between the Dutch language and both the Dutch people and the Dutch nation.⁶⁹ These scholars were not alone in promoting Dutch as a national interest; they followed a general trend. At precisely the same time that language was being seen as an element of national consciousness and patriotism, and efforts were made to compile the first Dutch language dictionary around 1800,⁷⁰ natural scientists and, later, board members at *Artis* deliberated over the language in which to publish their scientific findings.

In the planning stages of *Bijdragen*, the question of language arose regularly in discussions between the editorial board and the zoo board. The board favored a Dutch publication consistent with the trend described above. Adopting the native language with pride, however, could have rendered the journal useless in gaining an international audience. While it would be in the interest of the authors for their work to appear in a language more common in scientific discourse, one could also expect that, for the institution that had founded the first Dutch zoology journal as a symbol of patriotism, the language of choice would be Dutch. When Westerman, W. Vrolik, and Schlegel were elected as the Editorial Board of *Bijdragen*, they encouraged the *Artis* Board of Directors to allow authors to choose the language.⁷¹ While the decision to make *Bijdragen* an exclusively Dutch-language journal rested with the *Artis* Board of Directors, the editorial board strongly recommended that submissions be accepted in Latin, French, or Dutch. Ultimately, this became the official policy. Articles in Latin, however, never appeared.⁷² French articles did. Of the 29 articles published in *Bijdragen* between 1848 and 1869, 20 appeared in Dutch and 9 in French. Some authors wrote comfortably in both languages,⁷³ while one Dutch author wrote all three of his articles in French.⁷⁴ Despite the fact that about two-thirds of the articles in *Bijdragen* were published in Dutch, the journal, and hence the zoological society, gained an international audience and reputation for the zoological research at *Artis*.⁷⁵ *Artis*'s Board of Directors wanted the zoological committee and *Bijdragen* to establish the zoo as one of Europe's visible natural history institutions, and this strategy proved successful. Westerman's honorary doctorate, discussed above, was, in part, for founding *Bijdragen*. Westerman also promoted readership of the journal by initiating journal exchanges with many scientific societies and

academies – a practice common at that time. As a result, readers in institutional libraries from Saint Petersburg to Philadelphia found *Bijdragen* on the shelves. Interestingly, the first volume of *Bijdragen* received one rave review in Germany that, when translated into Dutch, had repercussions at *Artis*.⁷⁶ The appearance of this translation, and the translator's comments, demonstrate that those closer to Amsterdam saw *Bijdragen* as an indication that the zoo was finally attempting to advance natural historical knowledge. The translator offended the zoo board with remarks that both welcomed *Bijdragen* and regretted that "... the society existed so long before a voice called out to proclaim to the world how and in which ways it was scientifically active."⁷⁷ Affronted by the suggestion that *Artis* had not previously fostered science, the board did not feel reassured by the following words: "We gladly applaud this first attempt of the enlightened board, and we rejoice at the assessment this work of our fellow countrymen has enjoyed abroad..."⁷⁸ In reaction to this, the board congratulated the zoological committee, but also expressed its belief that the brief piece, however positive, had misrepresented – by underestimating – the zoo's commitment to science. They called an emergency meeting with the zoological committee and significantly increased the budget for the journal's publication.⁷⁹ This funding decision makes clear that the board saw the zoological committee as an investment in the scientific identity of *Artis*.

Nederlandsch Tijdschrift voor de Dierkunde (Dutch Journal of Zoology)

Bijdragen was not the only periodical published by the Zoological Society *Natura Artis Magistra* in the nineteenth century. In 1861, thirteen years after *Bijdragen* was founded, *Artis* agreed to publish the second Dutch zoology journal, *Nederlandsch Tijdschrift voor de Dierkunde* (Dutch Journal of Zoology). This journal was conceived by Pieter Bleeker (1819-1878), an unusual character in this story.⁸⁰ He had just returned to the Netherlands in 1861 after eighteen years as a medical officer in the Netherlands East Indies, where he played an active role in establishing colonial scientific and intellectual culture. The Dutch government granted him a special leave to return to the Netherlands to complete his ichthyological studies on the unique collection of fish he had amassed during his years in the tropics. Upon returning to his native country, he moved to Leiden, where he expected fruitful cooperation with the RMNH. Without formal ties to the RMNH, Bleeker had maintained close contact with his colleagues there. Once settled, he also consulted his friends Westerman and Schlegel, and

later formally proposed to *Artis's* Board of Directors that the society publish a second zoology journal.⁸¹ The arguments Bleeker used in his successful proposal deserve detailed discussion because they articulate a position consistent with the board's.

Bleeker first flattered *Artis's* Board of Directors when he said that they had understood "from the first hours" that *Artis* was a *scientific* society and not simply an ornamental one – a statement similar to the depiction in the foreword of *Bijdragen*. Bleeker supported their position that the zoological society could and should promote science, and he believed that they could do even more than they had. Their collection of living animals, the cabinet, and the library had expanded so dramatically, he pointed out, that the zoological society contributed even more to science than the founding of *Bijdragen* in 1848.

Other countries, he told the board, where the level of zoological science was less advanced than in the Netherlands, were publishing even more zoological journals.⁸² This situation did not improve the image of the Netherlands. Furthermore, Dutch nationals needed an opportunity to spread their knowledge without having to face the difficulties of covering publication costs themselves. But, he continued, covering costs need not be a problem because the country boasted the Royal Zoological Society *Artis*, which focused on the promotion of zoological science for the benefit of society and of the learned world. Specifically, he proposed that the society take on the task of a publication, one comparable to the *Zoological Transactions* of London, a type of publication he claimed "should not be missing in any scientific country." Thus, using nationalist arguments, Bleeker appealed to the zoo to provide opportunities for Dutch scientists to publish their work in order to bring international recognition to research performed in the Netherlands.

In this proposal, Bleeker specifically suggested how the journal would be organized, and what its contents would be. *Tijdschrift* was intended for a broader audience than *Bijdragen*, and would, therefore, communicate more general information. It would accept original scientific contributions; discuss newsworthy zoological literature that appeared both in the Netherlands and in foreign countries; report news of the society such as new acquisitions, new members, and announcements from the board; announce information from other Dutch scientific institutions and zoological collections; and finally, it would appear in slender monthly issues. When the board agreed to support the *Tijdschrift*, a prospectus of the journal that repeated much of Bleeker's original proposal was circulated among prospective subscribers nationwide.⁸³ This prospectus explained that, while *Bijdra-*

gen served science, the *Tijdschrift* would serve as a source of communication between *Artis*'s Board of Directors and the society's members. The presumed audience for this second zoology journal, therefore, was *Artis*'s membership.

In time, *Tijdschrift* became anything but a journal for *Artis* members. Under the editorial supervision of Bleeker, Schlegel, and Westerman, the *Tijdschrift* first appeared in 1863. Its first four volumes came out somewhat regularly until 1873, and then, after more than a decade-long lapse in publication, a last fifth volume appeared in 1884 and bore little resemblance to the first four.⁸⁴ The majority of contributions can hardly be considered as written for the lay audience addressed in the proposal. Most of the journal's space was taken up by brief original contributions to the *Tijdschrift* that were almost exclusively taxonomic descriptions of new species. Aside from the section announcing news from various zoos, it was not written as a popular journal or a journal to which thousands of *Artis* members would subscribe. Furthermore, the news of the society and that of other zoos gradually diminished, and had completely disappeared by the fourth volume.⁸⁵ Despite the claim that the *Tijdschrift* would be both an organ of communication between the board and *Artis* members and a necessary symbol of scientific competitiveness, its technical level suggests that it became only the latter. Subscription numbers prove that it did not reach even a small percentage of the zoo's membership.⁸⁶

That it aimed at an international audience can also be surmised from the fact that few articles appeared in Dutch. One would expect that a lay journal for zoo members would be written in Dutch.⁸⁷ While the board accepted Bleeker's proposal that articles be written in Dutch, French, German, English, or Latin, ultimately most of the articles appeared in French. Furthermore, Bleeker and Schlegel wrote the majority of the original scientific articles. Together they contributed 81 percent of the articles in these first four volumes. Bleeker figures as the most published researcher in the *Tijdschrift*. Of a total of 145 original contributions, he wrote 94, or 65 percent! He wrote 87 pieces in French, six in Latin, and only one in his native Dutch. His industriousness was followed by Schlegel, who wrote 23 pieces, or 16 percent, 19 of them in French and four in Dutch. He did not often write in German, his native language, even though German science by this time had achieved hegemony.⁸⁸ In addition to Bleeker and Schlegel, other authors contributed occasional pieces, usually in French.⁸⁹ (Interestingly, by 1884 when the peculiar fifth and last volume of *Tijdschrift* appeared, its three lengthiest articles were in German.) This journal provided a second and different kind of publication for Dutch naturalists specializing in zool-

ogy who preferred to submit their work to Dutch publications while writing in foreign languages to reach their foreign colleagues.

Clearly, Bleeker was the primary force behind the *Tijdschrift*, as he proposed it and functioned as its main editor and foremost author. The *Tijdschrift* gave him both a professional mission and a publishing outlet upon his return to the Netherlands.⁹⁰ Although the board of *Artis* agreed to publish the *Tijdschrift*, Bleeker felt they supported it halfheartedly.⁹¹ Furthermore, as editor, he had expected to receive contributions from a wider variety of Dutchmen active in natural history. When too few submissions were received, Bleeker claimed he felt obliged to fill the journal with his own research because there was not enough work by other authors.⁹² Given his commitment to scientific life, it is easy to believe that Bleeker wished to make the journal more than a testament to his own productivity. But one must also bear in mind that, as a prolific writer, Bleeker needed to publish his taxonomic studies of the hundreds of new species of fish he brought back from the East Indies. In fact, he published so many pieces in the *Archives Néerlandaises*, the journal of the *Hollandsche Maatschappij der Wetenschappen*, that the editor attempted to limit the number of his fish species descriptions that the journal would publish.⁹³ The *Tijdschrift* conveniently served his own professional interests, as well as those of his RMNH colleagues in Leiden.

Another prominent and significant feature of *Tijdschrift* is that almost every scientific contribution was written by a naturalist at the RMNH. At a time when the RMNH itself did not have the means to publish its own journal⁹⁴ – and would not until 1879 – *Artis* could fund such an initiative. Schlegel, of course, was the Director of the RMNH in this period. Both Schlegel and Bleeker were productive researchers and writers: along with their less productive but active colleagues, they were involved in collecting, organizing, and doing research on national collections. There were few alternative publications to which they could submit their work. When the *Tijdschrift* took shape under Bleeker's editorship, it – rather than *Bijdragen* – was the most appropriate outlet for the brief taxonomic pieces written by museum naturalists. (One can safely assume that this was no coincidence.) Later, when Bleeker held *Artis* responsible for the demise of *Tijdschrift*, he blamed it on the stinginess of the zoo board.⁹⁵ However, one look at the account books shows that *Artis* spent a small fortune publishing *Tijdschrift*, a journal with very few subscribers and thus a limited readership.⁹⁶ As will be seen, given the structure of scientific publishing in the nineteenth century, *Artis* supported science and scientists generously by publishing *Bijdragen* and *Tijdschrift*.

Scientific Societies and Publications in the Nineteenth Century

In the nineteenth century, scientific societies devoted to the advancement of specialties in natural history commonly included among their tasks the dissemination of knowledge through their own journals. In some cases, societies were founded *in order to* establish journals.⁹⁷ For many French and British societies, their journals were conceived coincident with the society's establishment. The Société Géologique de France in 1830, the Société Entomologique de France in 1832, the Entomological Society of London in 1832, the Botanical Society of Edinburgh in 1836, and the Société Botanique de France in 1854 are examples of societies founded in the second third of the nineteenth century that considered the publication of their own journals – often in the genre of Transactions or Annales – a primary goal.⁹⁸ Many specialized societies launched journals soon after they were founded.⁹⁹ The Zoological Society of London, Westerman's model for *Artis*, first published its *Transactions* four years after the zoo's founding and, like *Artis*, not until after its popular zoological garden had opened. In this period, European scientific societies and their publications varied greatly in character depending on their memberships and on the structure of science and publishing in their respective countries.

In this period when publication was an immensely expensive affair, society journals required not only the commitment to disseminate scientific knowledge – whether advanced or popular – but also financial solvency. Throughout much of the nineteenth century, researchers wishing to publish their studies were often obliged to take on the costs themselves. For many, this was impossible, and for the wealthy few, it was usually undesirable. As David Allen has pointed out, one valuable service of learned societies was to publish work that authors might not otherwise put into print.¹⁰⁰ The membership provided sufficient and stable subscription numbers for efficient printing runs. This efficiency, combined with the lack of a profit motive, allowed many society journals to remain financially viable.¹⁰¹ Commercial publishers considering similar journals perceived them as financial risks if they were not guaranteed by subscriptions. Brock argues that, in the British case, the commercial spirit – more than the scientific spirit – was responsible for the growth factor of nineteenth-century scientific journals.¹⁰² However, he also points out that society journals were ultimately more viable. Many of the commercial journals and magazines he describes had short lives, abandoned by their publishers when deemed unprofitable.¹⁰³ Scientific societies, therefore, played a crucial role in the proliferation of many scientific periodicals because their subscriptions provided the financial means for the dissemination of knowledge. Given the

financial structure of publication in the nineteenth century, *Artis's* publication of *Bijdragen* and *Tijdschrift* provided significant support for the Dutch natural history community despite Bleeker's complaint that they were not generous enough with the funding for *Tijdschrift*.

A wide variety of funding arrangements existed for nineteenth-century European scientific journals. In her survey on the rise of nineteenth-century and early-twentieth-century European science journals, Jean Shaw argues that in countries with little government support for science, other funding sources developed for scientific activities, including scientific publishing.¹⁰⁴ In Britain, for example, independent scientific societies that published journals were common; they proved crucial to the development of British science. Not until the 1870s, with the reform of the British university system, was national funding directed toward professional science, thereby removing the burden from individuals and their scientific societies. Similarly, in the Netherlands, the Dutch state funded scientific research and university education meagerly. *Artis* remained a privately-funded scientific institution for decades, where scientific content was produced by the professional but financed by the amateur – a pattern recognized in Britain as well.¹⁰⁵ In France, the centralized state supported a lively scientific culture in universities and scientific institutions as well as in prestigious scholarly journals. In Germany, individual states sustained their universities and scientific life on a scale unsurpassed in Europe. New German journals were often established and managed by individual professors within the university system. In the Netherlands, unlike the German states and Britain, the private society *Artis* independently pursued science financed by Dutch burghers who were excluded – perhaps by choice – from professional zoological pursuits. In the German cases, professors often used their journals to put forward their particular theoretical viewpoint¹⁰⁶ or to unite a community of scientists around a specialist journal.¹⁰⁷ In Britain, journals, appealed to the large active population of amateur naturalists.

The *Artis* journals legitimated the commitment to professional science of the institution that published them. They also aimed to improve the image of Dutch science abroad, and the Dutch bourgeoisie financed this goal. For the development of Dutch science, therefore, the significance of *Artis* shouldering the financial responsibility to publish two professional zoology journals at great expense must not be underestimated. Financial solvency depended on the wealthy zoo rather than on sales of the journals. Therefore, the problems in sales and marketing faced by commercial publishers were not an issue for the *Bijdragen* or for the *Tijdschrift*.¹⁰⁸ *Artis* willingly bore the financial burden of journal publications. Sales were in the hands of

a commercial publisher who also marketed the journals. In Britain and France, we see that some natural history societies were founded as a means to communicate knowledge via journals. The first priority of the Amsterdam zoological society, however, was its zoological gardens that displayed the natural world to the Dutch bourgeoisie. The indirect path taken toward the dissemination of professional knowledge ultimately excluded amateur natural history. Along this path, however, the advanced Amsterdam naturalists joined their colleagues from the RMNH in Leiden.

The Rijksmuseum of Natural History

In the early decades of their existence, *Artis* and the RMNH created mutually beneficial ties. Both institutions were committed to augmenting zoological natural history collections, and they helped each other in this goal. Cooperation, rather than competition, prevailed. While the RMNH both enjoyed the benefits and endured the restrictions of the state, *Artis* – with its independent financial position – benefited from the flexibility and independence to choose its own course. Compared to *Artis*, the RMNH was in a more privileged position to increase its collections. While *Artis* did acquire remarkable collections with no state aid, it promoted more activities that directly contributed to scientific knowledge than the RMNH. Most importantly, *Artis* was willing and able to publish original zoological research, while the RMNH – despite its internationally renowned collections – had no financial support for an institutional publication. *Artis* and the RMNH cooperated in two ways to promote their institutions and the development of Dutch zoology. First, they shared and exchanged animal specimens to the advantage of both collections; second, the *Artis* zoological committee included RMNH naturalists who contributed to the committee's success as well as supporting the work of museum researchers. Before discussing the cooperation between these two institutions, I will turn to the history of the RMNH and describe its institutional organization.

The RMNH was officially founded in 1820 as part of a broader policy of King Willem I to promote science in the Netherlands after years of French rule.¹⁰⁹ Its original collection combined preexisting natural history cabinets from the University of Leiden, which included the collection of the late Professor of Natural History S.J. Brugmans, *'s Lands Kabinet van Natuurlijke Historie* (The Country's Natural History Cabinet), and the collection of the first director, the ornithologist C.J. Temminck. Temminck had reached an agreement with the state to donate his massive natural history

cabinet to the new national museum in exchange for the position of director. Temminck argued that a national natural history museum would put the Netherlands “on equal footing with other countries.”¹¹⁰ Adopting this argument, the Minister of the Interior formally petitioned the King to found the RMNH to “add to the glory of both the King and his people, because the study of natural history should be stimulated in the interest of the nation.”¹¹¹ These appeals succeeded, and Temminck remained the director until his death in 1858. Under his administration, the collections increased in this institution devoted to research. The RMNH became the recipient of the natural history collections of the government’s *Natuurkundige Commissie* (Scientific Committee, NC). This committee, founded by royal decree in 1820, was responsible for the scientific exploration of the Dutch colonies.¹¹² Among their tasks was shipping to Leiden as many animal and plant specimens as possible. This explains, in large part, the incredible growth of the unique and exotic collections in the RMNH (and the Rijksherbarium) in the first half of the nineteenth century. Many of the specimens collected by the NC, as well as by other collectors from whom the RMNH purchased specimens, had never been seen in Europe before.¹¹³ In fact, a visit to Leiden led the British stratigrapher, W.H. Fitton, to remark to Richard Owen, “...that the use the Dutch have made of their colonies, for the benefit of Natural History, puts England to shame.”¹¹⁴ The RMNH housed, for example, Europe’s largest collection of birds until 1872, when it was surpassed by the British Museum of Natural History.¹¹⁵ The RMNH’s unique and exotic collection made it one of the most important natural history institutions in Europe, and its collections were consulted by leading naturalists of the day.¹¹⁶

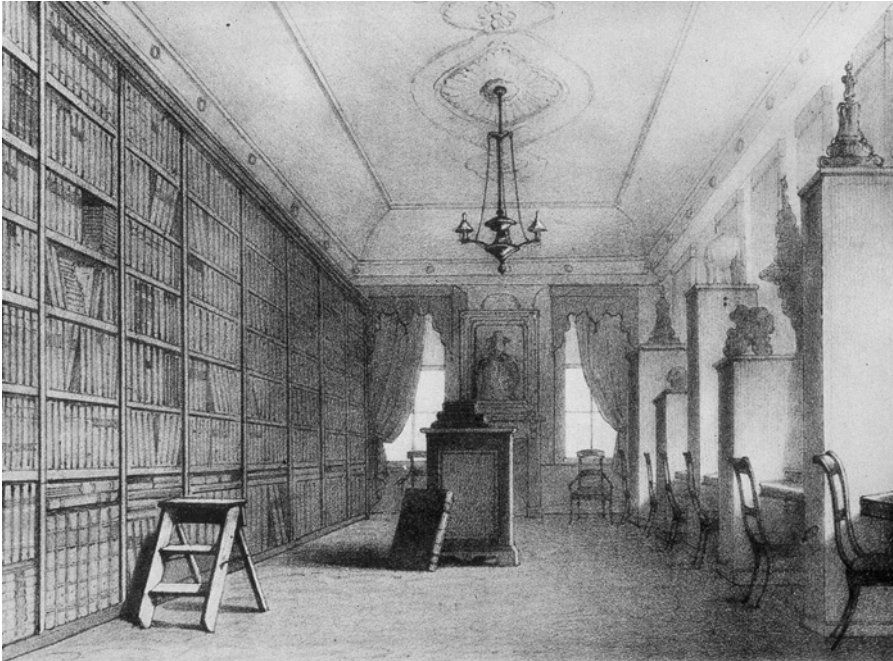
The success of *Artis* also depended on the growth of its collections – both living and dead. Unlike the RMNH, this newly-founded private institution had no preexisting collection; therefore, building up its collections required much work and capital. When the zoo was founded, Westerman’s birds comprised the original living exhibit lining the impressive main path, the Parrot Lane (*Papegaaienlaan*) (Illustration 4). Reinward Draak offered the use of his extensive natural history cabinet to *Artis* in exchange for a salary and the position of director. In 1840, Draak lost his appointment as director in a scandal surrounding alcohol abuse, misappropriation of funds, and neglect of the living animals.¹¹⁷ (He apparently failed to feed the animals, for example. One wonders if he failed to see their value when alive, and preferred them in the form of mounted specimens.) The financial arrangement made when he was dismissed included the stipulation that his collection would become the property of the zoo.



4. The Parrot Lane

H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra, Amsterdam*, 1856.

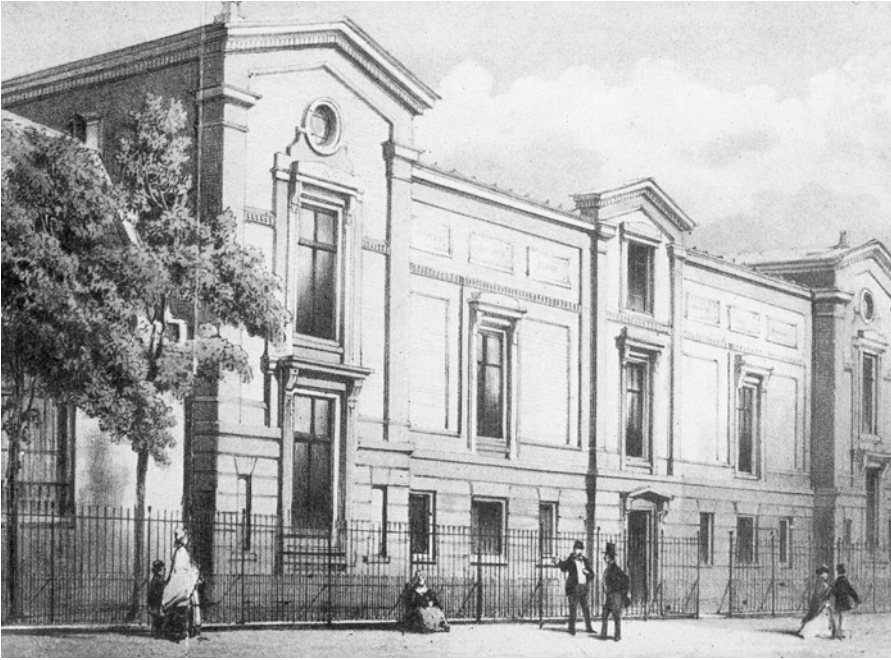
Establishing the living collection was trickier. *Artis* invested the significant sum of 34,000 guilders to secure the traveling menagerie of Cornelis van Aken that would form the foundation of its living collection of large and exotic animals.¹¹⁸ In addition to transactions with animal dealers, *Artis* actively sought donations and the cooperation of collectors who traveled to exotic parts of the world. Dutch nationals – merchants, colonial civil servants, naturalists – living in the colonies sent donations to the zoo in their homeland’s capital, and as a result, many of them enjoyed the privileges of honorary membership. Similarly, luminaries of foreign governments donated zoological specimens to *Artis*. Furthermore, the willingness of ship captains to care for and transport animals to Amsterdam – preferably still alive upon arrival – formed a crucial link between the zoo and the colonies. Animals that died en route were not rejected, as the zoo’s natural history cabinet benefited from them as well. Furthermore, the ship captains often became important donors and honorary members. While *Artis* benefited neither directly from the NC nor from national funding, Dutch colonial relations enabled it to secure important collections to display to citizens at home in the fatherland, and the animals provided a glimpse of nature in overseas territories. If the lay members comprised the primary audience for the displays at *Artis*, behind the scenes, advanced naturalists admired and



5. First Library Interior

Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1860.

studied the collections of the Amsterdam Zoo. Similarly, the library grew into a unique collection useful to scientists. At a time when many scholars depended on their own personal libraries, Westerman sought to insure that the zoo, in its role as a scientific institution, acquired a good natural history, and particularly zoological, library. The journal exchanges that put *Bijdragen* on library shelves also brought institutional publications from other scientific societies and academies to the *Artis* library. The library grew, in part, because Westerman encouraged book donations. Furthermore, he donated his own extensive private library to the society in 1856 (Illustrations 5 and 6).¹¹⁹ By 1862, the library held at least 5,000 volumes.¹²⁰ Few nineteenth-century institutional libraries maintained collections larger than this.¹²¹ Only much later would the Zoological Society of London, for example, attend to its library acquisitions. Although founded more than a decade before *Artis*, this London library owned only 1,550 titles when its first catalog was compiled in 1864.¹²² In Amsterdam, Westerman saw a library as a valuable resource for his scientific institution. Aside from doing scientific



6. New Library Exterior

Built in 1867. *Jaarboekje van het Koninklijke Zoologisch Genootschap Natura Artis Magistra*, 1868.

research, Westerman developed organizational skills crucial to the zoo's development.

Artis's organizational structure, financing, and primary audience were different from those of the RMNH, but the institutions had similar scientific aims and assisted each other in the creation of two natural history collections of international repute. Both institutions shared their collections when they loaned and donated rare specimens to each other, and they graciously offered and accepted gifts.¹²³ The RMNH generously donated many specimens to *Artis*, particularly in the zoo's early years. In 1842 alone, the RMNH donated 113 specimens to the fledgling zoo's natural history cabinet.¹²⁴ In the years that followed, their occasional gifts were important acquisitions for *Artis*.¹²⁵ (This might also be seen as Temminck disposing of unnecessary specimens. He was an "old-fashioned" collector who saw no value in duplicates.)¹²⁶ However, as the zoo collection matured, *Artis* was in a position to donate to, and trade specimens with, the RMNH. Some of these donations can be seen as acts of good will that illustrate the coopera-

tive spirit between the RMNH and *Artis*. In 1855, for example, Westerman offered the RMNH a bird that had died in the zoo. He believed that no such specimen existed in any natural history collection, not even in *Artis*'s.¹²⁷ Similarly, in 1866, Schlegel donated a rare New Guinea bird of paradise to *Artis* that he himself had mounted. He requested the honor of giving the gift "as a small token of gratitude for the interest your society continues to show in our museum."¹²⁸ In this time when birds of paradise were extremely desirable, valuable, and exotic specimens, such a gift can only modestly be called a "small token."¹²⁹ It was such a generous gift that the indebtedness was expressed by the *Artis* Board of Directors themselves who further expressed their surprise and appreciation for this beautiful addition to the zoological society's museum. They saw the bird of paradise gift as a symbol of "the continuing friendly terms which have been maintained for years between the Rijksmuseum of Natural History and the society."¹³⁰ In some cases, when the RMNH received living animals as (inappropriate) gifts, they loaned them to *Artis* with the stipulation that the zoo accept responsibility for housing and caring for them until their deaths, whereupon the zoo would be obliged to return the cadavers to Leiden.¹³¹ With this mutually beneficial arrangement, the zoo enjoyed temporary and inexpensive additions to its zoological garden, and it relieved the RMNH of the burden of caring for living animals.¹³² By joining forces, the collections of both institutions expanded and improved, and this led to further cooperation in the production of formal zoological knowledge.

Access to collections for natural historical research must not be underestimated. One could easily base a career in the nineteenth century on taxonomic studies of new organisms. Temminck was not the only naturalist who, despite no formal academic training, enjoyed international fame due, in part, to the wealth of both his own collection and the collections to which he had access. Both Temminck's successor, Hermann Schlegel, and Pieter Bleeker owed their expertise to collections they personally helped to organize and catalog.¹³³ Unique collections proved crucial to the performance of original zoological research, but other factors such as access to published literature and the ability to publish one's own work also figured prominently in the development of scientific careers and institutions. Although the RMNH held a privileged position as one of the few national museums and the repository of state-sponsored collecting expeditions, it had, for example, no institutional library to speak of. Curators consulted their own limited libraries or went to the university library.¹³⁴ Furthermore, in the second half of the nineteenth century, not only did funding for the RMNH diminish, but a new government also disbanded the *Natuurkunde*

Commissie.¹³⁵ Salaries for scientific staff, for example, were so low that curators usually stayed only until they found better positions elsewhere. Holthuis has attributed the lack of scientific contributions made by RMNH staff in comparison to similar institutions in other countries to the lack of funding during Schlegel's directorate (1858-1884).¹³⁶ Money was not available for an institutional publication until 1878.¹³⁷ Thus, King Willem I's attempt to stimulate Dutch science via the RMNH succeeded in building remarkable national collections, but the lack of other requisites of a scientific institution handicapped its staff in this period when science was being professionalized, disciplines were developing, and when knowledge of and contributions to the scientific literature was becoming increasingly important to the development of scientific careers. Despite the failure of the state to support fully scientific endeavors at the RMNH, some RMNH members advanced both their careers and the reputation of *Artis* by participating in scientific activities at the Amsterdam Zoo.

Unlike the RMNH, the financial independence of *Artis* allowed it to determine and to pursue its own goals. When the zoo board decided to develop a professional scientific side of *Artis*, it made capital resources available to its zoological committee. The committee had sufficient finances from zoo membership fees and donations to publish *Bijdragen tot de Dierkunde* – three decades before the RMNH could boast its *Notes*. However, to create a committee of professional naturalists, the zoo looked particularly to Leiden, to both the RMNH and to the university. Temminck, though seventy years old when the zoological committee was founded, attended meetings, agreed to review papers, and published an article in the *Bijdragen* before he died in 1858. Jan van der Hoeven, renowned Professor of Zoology at the University of Leiden, was also a member of the zoo's committee despite his well-known public feud with Schlegel.¹³⁸ Other prominent naturalists cooperated with the Amsterdam Zoo in their scientific endeavors. A close look at the journals published by *Artis* shows that naturalists who worked at, or were affiliated with, the RMNH contributed a majority of the articles. These scientific journals financed by *Artis* clearly provided important publishing opportunities for Dutch naturalists specializing in zoology during a time when only foreign alternatives existed.

Further scientific cooperation among the Leidenaars and Amsterdammers, much like the cooperation between the RMNH and *Artis* that improved both collections, proved mutually beneficial not only for the institutions but also, and perhaps more significantly, for the individuals involved. The expertise and work of various RMNH staff members, collectors, and affiliates made the publication of *Artis* journals possible. In the

first nine volumes of *Bijdragen*, five researchers from the RMNH wrote approximately sixty percent of the articles. Five Amsterdammers and one Utrecht professor wrote the remaining forty percent of the papers.¹³⁹ In the *Tijdschrift*, one is hard pressed to find the name of an author *not* affiliated with the RMNH. Of the twelve authors who wrote the 145 scientific pieces in the first four volumes, eight either worked in the RMNH or collected for it, while a ninth, H.J. Halbertsma (1820-1865) was Professor of Anatomy and Physiology in Leiden.¹⁴⁰ Another, J.P. Wickevoort van Crommelin (1830-1891), was a well-known private collector who maintained a correspondence with the RMNH for forty years, suggesting a close relationship.¹⁴¹ Only *Tijdschrift* author M.J. de Bont worked directly with *Artis*; he was responsible for the experimental cultivation of salmon and trout at the zoo. The remaining author, Claas Mulder, Professor at the University of Groningen, does not appear to have had close associations with the RMNH or with *Artis*. There is no doubt that the *Artis* journal *Tijdschrift* functioned primarily as a publishing outlet for naturalists affiliated with the RMNH. Extensive non-scientific sections of the *Tijdschrift* that announced zoo news appeared only in the first volume; in the fourth volume ten years later, only original scientific contributions were published. As noted above, the form the *Tijdschrift* took after its first volume was very different from that proposed by Bleeker in 1861, when the zoo board envisioned the *Tijdschrift* as a lay journal in which the board would communicate important society news and zoology news, in general, to its lay members. Why the *Tijdschrift* assumed this form, and whether this affected its demise, remains unclear. One can, however, easily imagine that the zoo board failed to see any advantage for their zoological society in continuing to support for a journal that, at great expense, publicized primarily scientific work being done at the RMNH, and more specifically, the work of its editor Bleeker.¹⁴²

Two points are clear. First, cooperation with the zoo gave researchers the opportunity to publish scientific work and thereby served their career interests. Secondly, and more generally, *Artis* needed the cooperation of naturalists from outside the zoo, and outside of Amsterdam, to give shape to its scientific ambitions.

Conclusion

Historians looking at nineteenth-century scientific communities have noted that in Germany, journals served local interests rather than disciplinary ones. Thomas Broman, working on German physiology, and Karl Hufbauer, working on German chemistry, have both found self-conscious

scholarly communities grouped around specialist publications used by researchers to communicate among themselves.¹⁴³ Lynn Nyhart has shown that in the German zoological community, two key organs existed in the mid-nineteenth century. Founded in 1848 – the same year as *Bijdragen* – the *Zeitschrift für Wissenschaftliche Zoologie* became the professional zoology journal whose founders wanted to distance their periodical from the more amateurish *Archiv für Naturgeschichte*. The latter was the organ of a scientific society, and Nyhart claims that less-specialized scientific societies and their journals “served mainly to foster local ties rather than disciplinary ones.”¹⁴⁴ In the Netherlands, this was not the case. The zoology specialists in the small, self-conscious Dutch natural history community came together, were formally appointed to the *Artis* Zoological Committee, and were responsible for the production of the zoological society’s professional journals. These publications, particularly *Bijdragen*, were not written for the small Dutch community, nor for the lay members of the zoological society. Rather, the founders intended for Dutch specialists to address an audience of scholars outside the Netherlands to secure the position of Dutch science in the international scientific community. Thus, while Nyhart saw that in Germany, academic zoologists distinguished themselves from less-focused naturalists in scientific societies, in the Netherlands, the lay members of Amsterdam’s zoological society strolled through the garden and visited the museum, while privileged scientists engaged in professional practices behind the scenes. This scientific society, in fact, was so successful at building its professional facet that it became an asset to the new Municipal University of Amsterdam upon its founding in 1877. Thus, within forty years of the founding of the popular private zoo, it had secured a position in European zoology and natural history, and had built scientific facilities more advanced than those in many European centers as well as Dutch institutions of higher education.

Artis, by allying itself with established researchers in zoology, borrowed their scientific reputations in order to create a reputation of its own. As a private society run primarily by amateur naturalists and funded by the Amsterdam bourgeoisie, *Artis* had to look outside its zoological garden to foster zoological knowledge – its professed goal. By turning to university professors and RMNH naturalists, *Artis* successfully found people who produced undeniably scientific work and who, in turn, benefited from their free reign over the zoological publications, and their access to zoo animals, the natural history cabinet, and the zoo’s book collection. The amiable relationships *Artis* forged with the RMNH in Leiden and the professional Dutch natural history community insured its success as a serious

scientific center. The zoo members, most of whom remained uninvolved with professional zoological studies, insured the financial support of this endeavor.

When *Artis* was founded by and for the members of the Dutch bourgeoisie, its founders and members had not yet envisioned the directions the institution would take “to advance natural historical knowledge.” That the intention was for *Artis* to develop into an institution of civic and national pride was clear. To achieve this, the zoo board chose to foster professional scientific activities that would not only create a unique institution situated in the nation’s capital, but also demonstrate their commitment to science and to launch Dutch science into the international realm. This is a story about the legitimation of the society itself, of Amsterdam as the indisputable capital of the Netherlands, and of the Netherlands as a country defining its own national identity after years of French rule.

While the zoo board led *Artis* to international scientific repute, not all of the analysts who observed the development of *Artis* believed that professional science was the appropriate level for the advancement of scientific knowledge at the zoo. In an anonymously written and commercially published satire, some zoo members – men of science themselves, they claimed – believed that the zoo’s responsibility included the enlightenment of its lay members.¹⁴⁵ They doubted that the 2600 (in 1853) members visited the zoo because of their passion for science; if the board thought this, they were kidding themselves. Given the lack of a scientific spirit among zoo members, these analysts accused the board of negligence because the zoological society made no effort to spread knowledge or to encourage curiosity among its lay members. Even an interested member had little access to zoological knowledge. While the expert Willem Vrolik, for example, gave rather technical and successful lecture series, they were his only attempts to address the members. And others, such as Westerman, they complained, made no attempt to share his expertise. Quite clearly, they thought the scientific goal was placed too far in the background. These critics illustrated this absence of scientific spirit by describing the fate of two busts of Cuvier and Linnaeus, which, commissioned by the zoo, were proudly displayed at the entrance gate, but only for a few days before being replaced by flower pots. The reason was clear: while the busts of these renowned naturalists looked fine as one entered the garden gate and saw their faces, from inside the gate the zoo members saw only the backs of their heads (Illustration 7). Petty aesthetic concerns overshadowed any vague notion of science. These critics believed that *Artis*, in addition to supporting professional inquiry, should also stimulate and instruct the general membership. It is unclear how many members would have shared their views.



7. Original Entrance Gate with Two Busts

This watercolor was presented to Westerman in a book honoring the 25th anniversary of *Artis*. It is unclear how this area actually appeared in 1863. W. Hekking, Jr. Watercolor, 1863. (Collection of the Gemeentelijke Archiefdienst Amsterdam)

In the following chapter, the activities and publications *Artis* sponsored for its thousands of members will illuminate this satirical picture of the Amsterdam Zoo in the mid-nineteenth century.

CHAPTER FOUR

Science Joins Cultural Life ¹

Here we see the attributes of Science and Art displayed.
On one side the animals, the living works of God almighty.
Thanks to art and science, from which shipbuilding arose,
Almost every kind of animal towards Amsterdam flows.
The rising sun conveys happiness, warmth and light:
It is harmony pure, that radiates peace, so bright.
On the left, Neptune's trident, depicting travel over the seas;
Near it, the symbol of commerce from the Greeks' Hermes.
The anchor of hope gives strength to our stride;
So, in our favorite garden we forget troubled times.
The city's patroness views her institution with a proud gaze,
Bringing to the mighty Amsterdam, both honor and praise.
Opened at her foot is the book of our zoological garden;
Because she worships nature, praising without pardon
Its *Artistic* value, she offers the laurel crown to our Society.
And the future? Grow in splendor on the IJ!²

(T.J. Kerkhoven, *Artis Jaarboekje* 1852)³

Introduction

This explicit poetic description of *Artis* by a board member leaves little to the imagination. Science, art, animals, shipbuilding, navigation, and commerce join together at the zoological garden that honors, and is honored by, the patroness of Amsterdam (Illustration 8). The poem, in essence, pays tribute to the enterprising Dutch who shared their personal wealth when supporting the Amsterdam zoological institution. *Artis*, in turn, became a cultural center for the city, and a source of civic pride.

The Dutch defined a new national cultural identity after years of French rule that ended in 1813 and the economic recovery that was a result of the reconstructed colonial trade.⁴ In the first half of the nineteenth century, the new elite that earned fortunes in commerce also developed a sense of civic responsibility and felt compelled to breathe vitality into Dutch culture that, during this period, had been characterized as “lifeless.”⁵ Like their counterparts across Europe, the Amsterdam burghers aspired to create new significant cultural institutions and to reshape Amsterdam's cultural life. *Artis* is the foremost example of their success in the middle decades of the nine-

teenth century. It generated more enthusiasm and capital than, for example, the modest national art museum, the Rijksmuseum, that housed numerous Dutch Masters. This chapter discusses the rise and decline of the zoological society in the context of Amsterdam's cultural life. It sheds light on the initiatives taken by *Artis* to serve the thousands of Amsterdammers who chose to support *Artis* as their primary cultural institution, thereby choosing science rather than, for example, the visual or performing arts, as deserving of their generous support. Not until the emergence of a new generation of more specialized cultural institutions late in the century did its popularity begin to wane.

With *Artis*, the Dutch middle classes created a new type of cultural institution. Many of the zoo's members, who did not have access to older private societies dominated by Dutch patricians, participated in a new form of cultural life. Although exclusive, *Artis* was open to a broader cross-section of the population than its predecessors. The equally notable cultural institution, *Felix Meritis*, presented science to its members and held concerts in its famous concert hall. However, it charged significantly higher membership fees and excluded, for example, Jews from membership. In a country where members of the Dutch Reformed Church enjoyed political and social privilege, where social structure and social mobility were determined, in large part, by religion, *Artis* emerged as an unusually liberal, albeit closed, cultural society.⁶ At *Artis*, Jews, Catholics, Anabaptists, and Calvinists came together and sat on the Board of Directors, and shared equal privileges. The innovative organization of *Artis* permitted participation from a heterogeneous though elite stratum of society. When *Artis* reigned as the leading cultural institution in Amsterdam, its members enjoyed access to a wide variety of activities. At the zoo, they could stroll through the gardens to view the living displays of animals and hear prominent researchers lecture on zoology. The members saw not only the displays of mounted and preserved animals in the museums, but also exotic ethnological exhibits. *Artis* produced publications intended for the members in their Visitors, Guides (*Gids voor de Bezoekers*) and almanacs (*Jaarboekjes*). For these publications, *Artis* enlisted the aid of leading scientists to instruct members about animals, and literary luminaries to share their poetic spirits. Moreover, the serious musical programs at the zoo were of the highest quality, and leading Amsterdam orchestras performed pieces by notable Dutch composers that the zoo had commissioned. *Artis* fostered professional music as seriously as zoological research, as it developed into a multifunctional cultural institution serving the various interests of its thousands of enthusiastic members. While *Artis* was primarily a zoological society that

promoted, first and foremost, zoological knowledge, it defined its cultural role broadly in this period before the Dutch began establishing more specialized high-brow institutions.

In addition to these tangible benefits, membership gave entry to society's higher ranks and conferred social status. Thus, the authors of the satire discussed at the end of Chapter 3 expressed their skepticism regarding the scientific interest of *Artis's* members, and criticized the social distinction conferred upon its members. But the members took part in an institution that not only stimulated interest in science and serious music, but also contributed to the general cultural life of Amsterdam and the Netherlands. By participating in *Artis*, the members created a cultural institution, to complement renewed Dutch commercial successes, and to establish Amsterdam as a leading European capital. Both the lay members and specialists involved in the creation of *Artis* were concerned not simply with the success of the zoo, but with the prestige of both their city and nation.

Art, Science, and the Nation

For much of the century during which *Artis* enjoyed continued support, Amsterdammers reacted less enthusiastically toward art institutions, for example, than toward their zoological society. The Rijksmuseum was long neglected and the Royal Academy of Visual Arts (*Koninklijke Akademie van Beeldende Kunsten*) struggled for its existence while *Artis* expanded due to impressive financial backing. Fuelled by their civic and national pride, the men responsible for the rise of *Artis* strove to promote Dutch art through these two national establishments, albeit less successfully. Their histories demonstrate, on the one hand, that some culture builders such as Willem Vrolik and the distinguished writer Jacob van Lennep strove to improve the status of Dutch culture in general, through the encouragement of both the arts and the sciences. On the other hand, their relative lack of success in garnering support from Amsterdammers for art institutions suggests that science at *Artis* proved more attractive and important than the visual arts to the moneyed participants in Amsterdam's cultural life. In her excellent study of the Royal Academy of Visual Arts in Amsterdam, Jenny Reynaerts investigated the rise and decline of this national institution that was founded in 1817 by royal charter with the goal to revive the faded glory of Dutch art.⁷ The academy was given the responsibility to develop a new national school of art in a hierarchic structure imposed by the government, thereby ending the period when art education was organized regionally. Between 1820 and 1840, the academy's directors (professors) and Board of

Managers struggled to agree on a definition of *the* Dutch national style of art that they could foster in their efforts to bring renown to Dutch art once again. Debates about the national style contrasted landscape and genre subjects with history paintings in which heroes of past ages and triumphant scenes from the fatherland's history would be depicted.⁸ The Royal Academy's directors ultimately determined that they would advance history painting as *the* style of Dutch national art. This choice reflected the increasing popularity of history painting as a reaction to nation-building throughout post-Napoleonic Europe.⁹ Reynaerts convincingly describes the motivations of the King and the historical actors in the academy regarding their concern to develop not only a unified national art culture in the new United Kingdom of the Netherlands but also a style of art that would glorify the nation's past. While history painting appealed to the academy directors and their nationalist goals, it did not inspire the painting students, because landscape and genre paintings were the best-selling styles on the Dutch market. The political ideological underpinnings of the academy did not find a corresponding resonance in the art marketplace. Despite their efforts, the academy directors failed to reach their goals, and the academy lost all state funding in 1870.¹⁰

The plight of the two national art collections, then housed in the Trippenhuys in Amsterdam and the Koninklijk Kabinet van Schilderijen (now the *Mauritshuis*) in The Hague, provides another perspective on the low status of art that the Royal Academy directors had been commissioned to improve. The museums suffered from inadequate state funding as well as a lack of interest by both the state and the Dutch population. For example, the Rijksmuseum received approximately 4,000 guilders in acquisition funds between 1841 and 1873, and purchased only 21 paintings – for an average of 190 guilders apiece.¹¹ Similarly, the Mauritshuis in The Hague, augmented its collection by only four paintings between the years 1831-1874, all of them donations.¹² In this same period, The Hague's art museum was run on an annual budget of 700-800 guilders and the Rijksmuseum in Amsterdam worked with an annual budget of 2,000-3,000 guilders.¹³

When it opened in the Trippenhuys in 1817, the Rijksmuseum was housed in cramped quarters next to a fuel storage area, in the same building as the Royal Institute of the Sciences, Literature, and Fine Arts (Koninklijk Instituut, later the Royal Dutch Academy of Sciences).¹⁴ In 1834, the first complaints about the storage and exhibition conditions were voiced.¹⁵ One decade later, E.J. Potgieter, the founder and editor of the influential liberal literary journal *De Gids*, called for the nation to treasure and protect this collection of Dutch art.¹⁶ However, little had changed by the late 1850s

when the conservative Jacob van Lennep anonymously expressed his concern about the national artistic suicide being committed in the Trippenhuis.¹⁷ Only a small coterie of the cultural elite in Amsterdam took up the cause for a new Rijksmuseum; as Bergvelt concluded, “the museum had no support from the Dutch bourgeoisie.”¹⁸ Only decades later would the national art collection in Amsterdam attract enough attention, interest, and capital for a major change. Clearly, the magnificent building and the collections of today’s Rijksmuseum belie its modest origins.

The Promotion of Art, Science, and Culture

While these two art institutions met with little success, *Artis* flourished thanks, in part, to the efforts of some of the same supporters. The Amsterdammers Westerman and Vrolik were committed not only to the success of *Artis* and to science, but to the general development of culture in Amsterdam. Leaders of *Artis*’s professional activities, G.F. Westerman, Willem Vrolik, and Hermann Schlegel, also served as the most important contributors to amateur instruction at *Artis*. Their commitment to the advance of natural historical knowledge went beyond professional science and their own career interests.

Gerardus Frederik Westerman

Marten Westerman and his son Gerardus Frederik shared similar commitments to Dutch cultural life. Marten was a well-known writer and actor who served for several years as the Director of the Amsterdam theater, the *Stadsschouwburg*. He also owned a printing and publishing company important primarily for the Dutch literature it produced.¹⁹ Gerardus started in his father’s publishing business in 1830, but eventually left the firm in the hands of his brother, Franciscus Casparus Westerman, in the 1850s to devote his full attention to *Artis*. Gerardus received much recognition for his leadership of the zoo from its inception in 1838 until his death 52 years later in 1890, though he has been relatively ignored by historians. Gerardus Westerman, known as “the most popular burgher of Amsterdam,”²⁰ received full credit from his contemporaries for the success of *Artis*. While he devoted his long life to this one institution, his other initiatives reflect his dedication to the development of the city of Amsterdam.

In addition to his daily duties at *Artis*, G.F. Westerman initiated three companies of note.²¹ In 1871, with four partners he founded the Amsterdam Omnibus Company (*Amsterdamsche Omnibus Maatschappij*). In 1872, it

began coach service between the Dam – Amsterdam’s main square in the heart of the city – and the Plantage, which had by this time become a neighborhood with many small theaters and concert halls, not to mention the zoo.²² Coach services increased in the following decades, and by 1900, when the city took over the company and transformed it into the public transportation service, it had expanded to 15 different lines and owned 242 coaches and 758 horses.²³ It was the precursor of the current Municipal Transportation Company (*Gemeente Vervoer Bedrijf*). His other two companies focused on art and antiquities exhibitions. The Panorama Company (*Panorama Maatschappij*) was founded in 1878. It built an impressive building, described as the “apotheosis of nineteenth-century spectacle (*kijkspul*),” across the street from the zoo.²⁴ Exhibited in this building were huge panoramas painted by notable Dutch artists depicting heroic Dutch historical episodes. It opened in 1880 and was very popular for about twenty years.²⁵ Westerman’s Exhibit Company “The Broekerhuis” (*Tentoonstelling Maatschappij Het Broekerhuis*) opened a museum in 1881 that exhibited local antiquities. This museum, near the new Vondelpark and the new Rijksmuseum, attracted little attention, and the company was liquidated in 1887.²⁶ In addition to these efforts, Westerman stipulated in his will that the land on which his home stood should be used to build a theater.²⁷ In 1892, the Hollandsche Schouwburg opened there, as a legacy to his lifelong commitment to Amsterdam’s cultural life.

Willem Vrolik

Willem Vrolik’s family background placed him among the educated elite. His father Gerardus was a prominent medical professor in Amsterdam who also participated with his son in scientific activities related to the zoological society. Willem’s step-grandfather was the influential Jan Hendrik van Swinden (1746-1823), Professor of Mathematics, Astronomy, and Physics at the Amsterdam Atheneum.²⁸ Van Swinden was famous, in part, for the more than one hundred experimental physics demonstrations he performed for the privileged members of the private society *Felix Meritis* in Amsterdam. At *Felix Meritis*, Van Swinden explicitly promoted both his scientific contributions and other cultural activities as important means of self-improvement for the members.²⁹ Sharing Van Swinden’s vision, Vrolik would demonstrate his field of expertise, comparative anatomy, for amateur audiences comprised of *Artis* members. In addition to his professional publications, Vrolik wrote for other *Artis* publications which are discussed below. He also published material on natural history topics addressed to a

lay audience in the *Album der Natuur*,³⁰ and he wrote a three-volume popular work, *The Life and Structure of Animals*.³¹ Vrolik made efforts to disseminate zoological knowledge not only among his colleagues and atheneum students, but also among interested amateurs.

Vrolik's commitment to the development of Dutch culture went beyond science. Like other leading Amsterdammers, he actively promoted the fine arts. At the Royal Academy of Visual Arts discussed above, Vrolik served as a member of the Board from 1837 to 1849, participated in the debates on the national style of art, and supported training in history painting as the academy's goal. He also taught human anatomy to art students at the academy where, at times, even surgeons registered for the courses.³² (Interestingly, these same art students enjoyed limited access to *Artis*, where they could study animal anatomy; see color plate 4). Ultimately Vrolik resigned from the board, disappointed and frustrated that the academy had been unsuccessful in reaching its goal of fostering history painting as the national art style.³³ Later, he headed another group of Amsterdammers who wanted to restore pride in seventeenth-century Dutch art, and to change the abhorrent conditions under which the Rijksmuseum collection – symbol of past glory – was housed and exhibited in the Trippenhuis. In 1862, the year before his death, Vrolik chaired the Committee for the Preparation for the Foundation of an Art Museum (*Commissie ter Voorbereiding der Stichting van een Kunstmuseum*), later renamed the Committee for the Preparation for the Foundation of the King Willem I Museum (*Commissie ter Voorbereiding der Stichting van het Museum Koning Willem I*).³⁴ Members of the committee included leaders of Dutch cultural life.³⁵ In 1863, they appealed to their fellow countrymen for donations to fund the proposed national art museum and raised more than 75,000 guilders.³⁶ Vrolik died at the end of 1863 and the committee was forced to continue its campaign for the new Rijksmuseum without him. Over the course of several decades, Amsterdammers concerned with the treasures of Dutch art would strive for an appropriate manner in which to store it safely and display it prominently.³⁷ Their efforts would ultimately lead to the founding of the new Rijksmuseum.³⁸

Hermann Schlegel

Hermann Schlegel's contribution to Dutch scientific culture focused on zoology. As the Director of the Rijksmuseum of Natural History (RMNH) in Leiden, he was responsible for one of the most important national scientific institutions. As a prolific writer, Schlegel addressed not only profes-

sional or advanced amateur audiences, but also lay audiences for whom he wrote and illustrated many books and articles.³⁹ An avid hunter, Schlegel wrote, together with his friend Abraham Verster van Wulverhorst, a monumental book on falconry, illustrated by Joseph Wolf.⁴⁰ Schlegel's *De Diergaarde en het Museum van het Genootschap Natura Artis Magistra te Amsterdam* (*The Zoo and the Museum of the Society Natura Artis Magistra in Amsterdam*) was written at the request of the publisher, the Westerman family company.⁴¹ In it, he described animals in the collections of *Artis* in a manner "to make the whole treatment as popular as possible, as far as this... is allowed by the subject of scientific discourse."⁴² *Artis* also commissioned Schlegel's work, the most significant result of which was *De Toerakos*.⁴³ In this folio volume, Schlegel described all of the known species of the *Musophaga*, with his own color lithographs adorning the text. Schlegel drew the life-sized illustrations from living bird specimens in the zoo.⁴⁴ Published at a cost of close to 3,400 guilders,⁴⁵ the book was not sold but presented as a reward for unusual service to *Artis*. In this remarkable publication, dedicated to the King, Schlegel depicts one species, the regal *Musophaga gigantea*, in the foreground, and in the background we clearly see the Dutch flag flying proudly in front of a colonial fort.⁴⁶ In this scientific masterpiece, for which he received generous support from *Artis*, Schlegel reflected the grandeur of nature, of *Artis*, and of the colonial possessions from which these animals were taken. *De Toerakos* was a testimony to Dutch exploits abroad, displayed in Amsterdam.⁴⁷ These examples illustrate his serious efforts to disseminate the knowledge of natural history to a wide public.

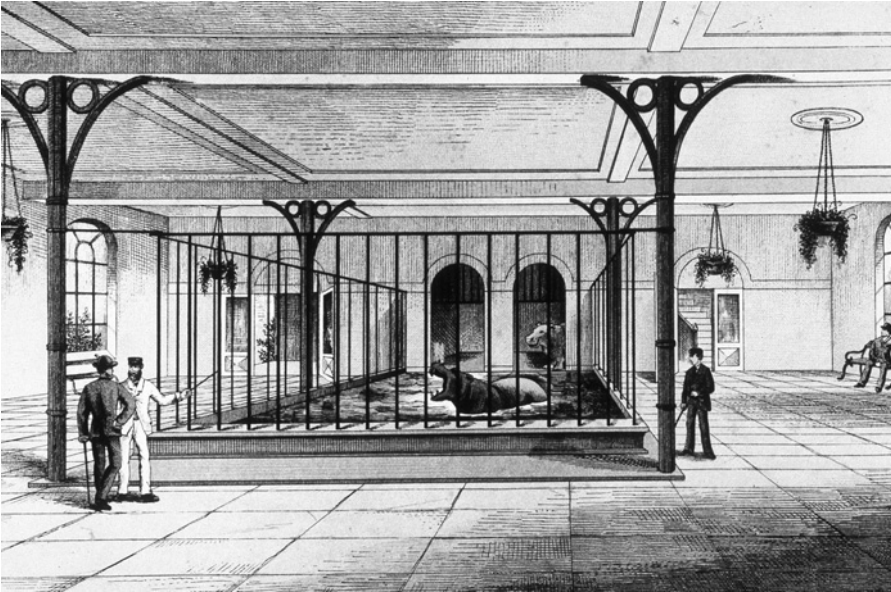
Artis Activities

While *Artis* actively fostered the production and dissemination of professional zoological knowledge in order to establish the institution's scientific identity, the zoo also made zoological knowledge accessible to its members. Many of the men involved in the Zoological Committee who published in *Bijdragen tot de Dierkunde* and in the *Tijdschrift tot de Dierkunde* also addressed the lay members of *Artis*. Experts shared their knowledge and valuable time giving lectures to these people. Others wrote about zoology in *Artis* publications such as the *Visitors' Guides* and *Yearbooks* (*Jaarboekjes* or almanacs). These publications testify to the ways in which *Artis* advanced natural historical knowledge not only as printed information but also as displays of nature.

Willem Vrolik is a unique example of a professor committed to instruct-

ing *Artis* members on zoological topics. In 1839, at the opening ceremony of the new members' hall that was attended by hundreds of people, Vrolik gave a lecture "On the General Principles, which Exist in Nature that Maintain the Different Animal Species."⁴⁸ Furthermore, he gave well-received lecture series annually for at least twelve years; each year, he gave the same opening lecture praising *Artis* and explicating its admirable scientific goals.⁴⁹ The first 12-part series took place within the initial year of the zoo's existence. In 1840, he gave a 14-part series on the structure (*maaksel*) of mammals.⁵⁰ Topics covered by Vrolik in this series included four lectures on classification based on Cuvier's system, and drawn from the work of the Cuvierian, Jan van der Hoeven. Other lectures covered individual groups of mammals, for example, carnivores, marsupials, rodents, pachyderms, and cetaceans. Vrolik performed dissections for the zoo members, and used live and mounted specimens from the zoo's collections as visual aids. He did not lecture exclusively on animals. His third lecture series in 1841, titled "Anthropology, that is, the Description of the Human Body compared to that of Animals," included human anatomy as well. This series was reportedly successful and popular among the members, and demonstrated to contemporaries that the "scientific appetite of our fellow-countrymen, particularly of the distinguished bourgeoisie (*deftige burgerklasse*), is not as bad (*slecht gesteld*) as some people believe."⁵¹ Apparently, *Artis* had already faced criticism that the zoo members were interested not in science but in the social benefits of an exclusive society. However, Vrolik lectured on a high technical level to a receptive and large audience. In later years, *Artis* invited other experts to give lectures, which ultimately disseminated scientific knowledge to the *Artis* membership.⁵²

Artis had built a handsome zoological garden when its impressive collection of exotic animals was described in the first Visitors' Guide (*Gids voor de Bezoekers*) in 1843.⁵³ Subsequent editions varied little from the original although they did describe the changing population of zoo animals and additions to the zoo's property and facilities.⁵⁴ The earliest guides included an introduction written by J.J. Wijsmuller – one of the zoo's founders and a board member – about the history of the society. Wijsmuller's laudatory review of the events in the society's first years reminds readers that the way in which *Artis* wanted to reach its goal to advance natural history was "to provide splendor and adornment to the city and the country."⁵⁵ And he responded to the criticism by skeptics:



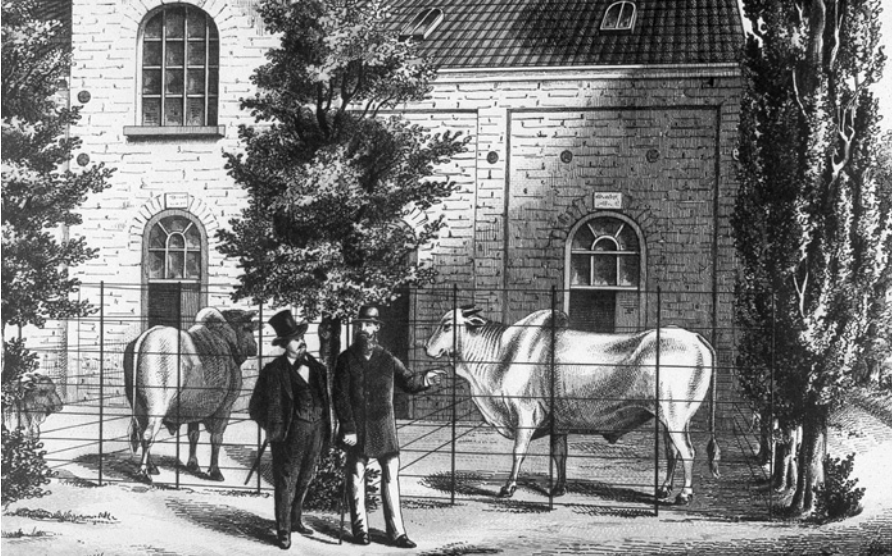
9. Hippopotamus Building

N. van der Waals, in *Natura Artis Magistra in Schetsen* by P.H. Witkamp, 1875.

To one who questions if knowledge of glorious nature and of the animals on earth can be fostered, we say: “Come and See”; to one who questions if the knowledge influences the development of the mind, we call to the great men [of science] as witnesses; to one who questions if such a costly organization is necessary to reach those goals, we declare frankly: it was founded with that objective, and the men who united so much perseverance with fortitude, and managed to add a beautiful pearl to the crown of Amsterdam (*Amstel’s stedekroon*) ... will certainly be remembered.⁵⁶

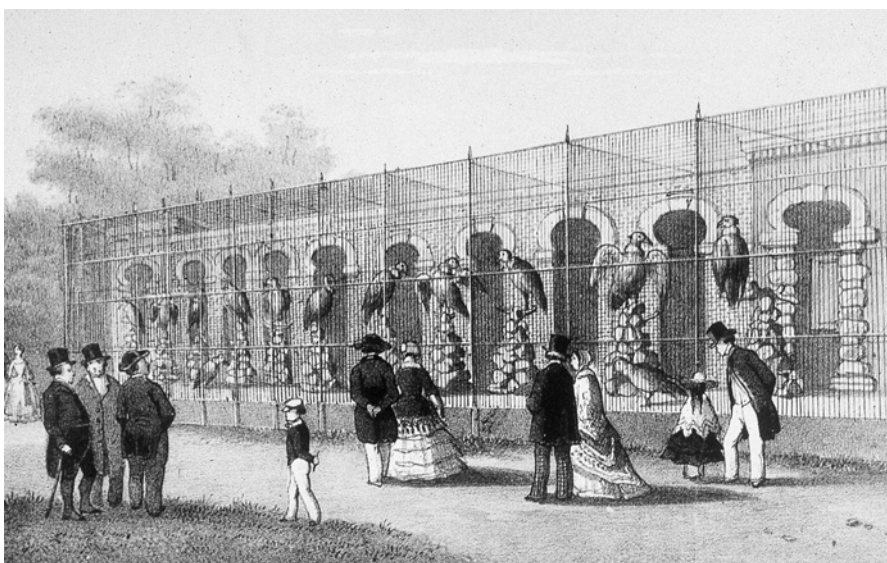
While Wijsmuller sang the praises of *Artis*, the rest of the guide, written by G.F. Westerman, instructed zoo members about the natural world in general, and more specifically, about the animals at the Amsterdam Zoo.

While artists regularly depicted scenes from *Artis*, the visitors’ guides give us the best descriptions of what a visit to the zoo in nineteenth-century Amsterdam entailed (Illustrations 9-14). Reading the guide and following its directions, visitors were taken past every animal and into the museum buildings as well as into the meeting rooms. The minimum amount of information Westerman provided about each animal in the zoo was its Latin name, popular name, country of origin, and the naturalist who first described it. (This information was also placed on signs near some of the



10. Brahmin Cattle with Gentlemen
N. van der Waals in *Natura Artis Magistra in Schetsen* by P.H. Witkamp, 1875.

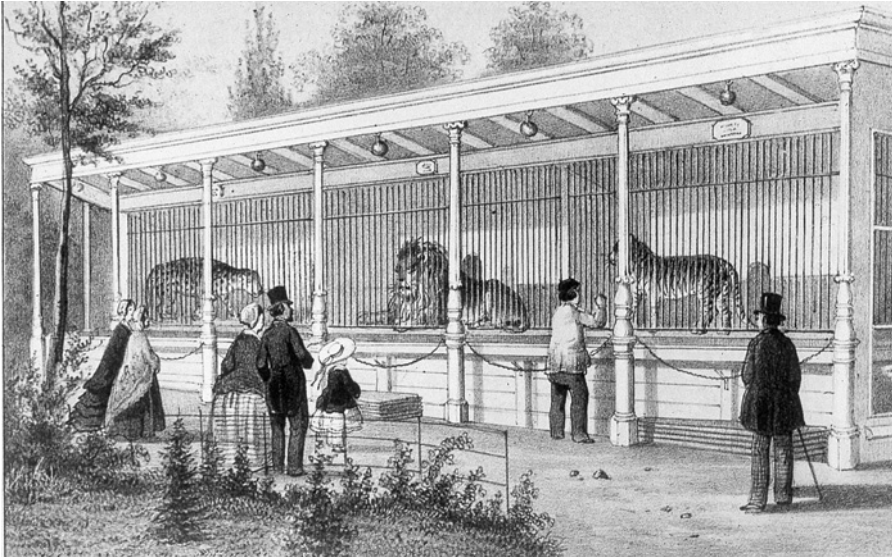
cages and enclosures.)⁵⁷ Westerman also noted information about the acquisition of the animals, and thereby recognized and encouraged the members who had donated animals to the zoo. The entries Westerman wrote for most animals included descriptions of varying lengths that could include a physical description, natural habitat, diet, or aspects of behavior. In some cases, he described the animals' reactions to attempts by humans to tame them. Some animals, particularly the apes, Westerman described as possessing anthropomorphic character traits. In the zoo guides, he gave much technical information about some animals, for example, when he explained that Professor Willem Vrolik had dissected specimens that had died in the zoo, leading to the publication of scientific papers. In such cases, he gave the full reference to the scientific publication. Westerman also explained current scientific debates occasionally. Finally, at the back of the guides, Westerman compiled complete lists of all of the living animals found in the zoo. While it is hard to know how the zoo visitors read the guides, one can assume that a visitor who paid 25 cents for one was interested in learning more than could be gleaned from the signs posted near the animals, and that the *Artis* members, many of whom attended Vrolik's lecture series, were well informed about the natural history of animals as a result.



11. Birds of Prey
 H.W. Last. Lithograph by E. Spanier, in
Souvenir Natura Artis Magistra, Amsterdam, 1856.

In these printed guided tours, Westerman described not only the zoological garden, but also the zoo buildings and facilities that made a trip to the zoo enjoyable and social. In the right wing of the new Members' Building (*Ledenlokaal*), visitors enjoyed refreshments and a good view of a square in the zoological garden decorated with the coats of arms of every European city that boasted a zoological garden, thereby situating Amsterdam among the major continental capitals. Under each of these shields, appeared the founding date of the city zoos. The left wing of this building was used by the Board of Directors.⁵⁸ In the Main Building (*Hoofdgebouw*) (Illustration 15), two halls were equipped to receive visitors and their guests.⁵⁹ In the large hall, where smoking was permitted, one could order refreshments. It was "decorated with a painting of the King, patron of the Society, painted by Nicolaas Pieneman, and presented to the Society [*vereerd*] by His Majesty" (Illustration 16).⁶⁰ In a second hall, warm meals were served.⁶¹ Visitors could go directly from these restaurants in the Main Building upstairs to the Natural History Museum.

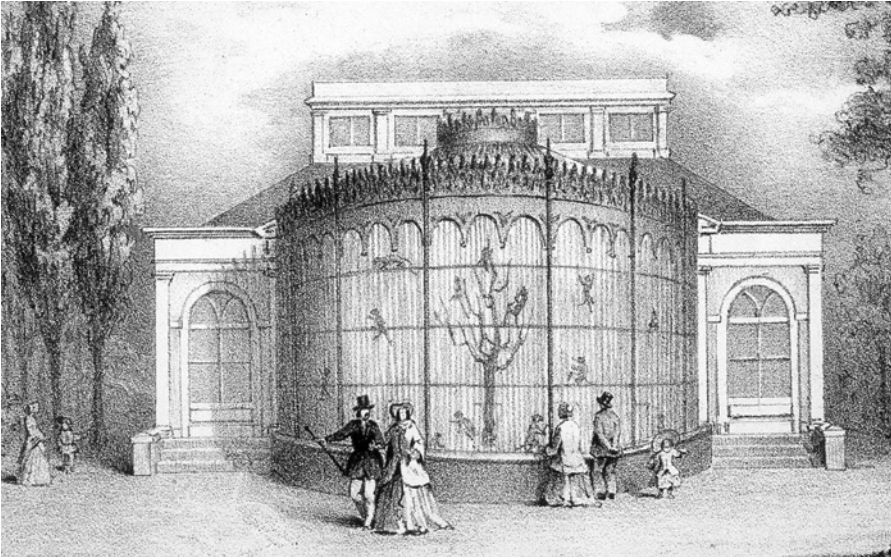
The zoo guides provide a glimpse into the Natural History and Ethnographic Museums.⁶² Of the former, located on the second floor of the Main Building, above the restaurants, few descriptions or documents exist. In the



12. Animals of Prey
H.W. Last. Lithograph by E. Spanier, in
Souvenir Natura Artis Magistra, Amsterdam, 1856.

Visitors' Guide, Westerman did describe it as one would expect a natural history cabinet or museum to be: “a collection of skeletons of mammals, birds, and amphibians, recently substantially increased by a number of remarkable preparations from the famous museum of the late Professor W. Vrolik. Furthermore, the collection consisted of mounted mammals and birds, crabs and lobsters, sea urchins and starfish, a beautiful collection of horns, shells, polyps and sponges, while the collection of fossils, due to lack of space, is only partially exhibited” (Illustration 17).⁶³

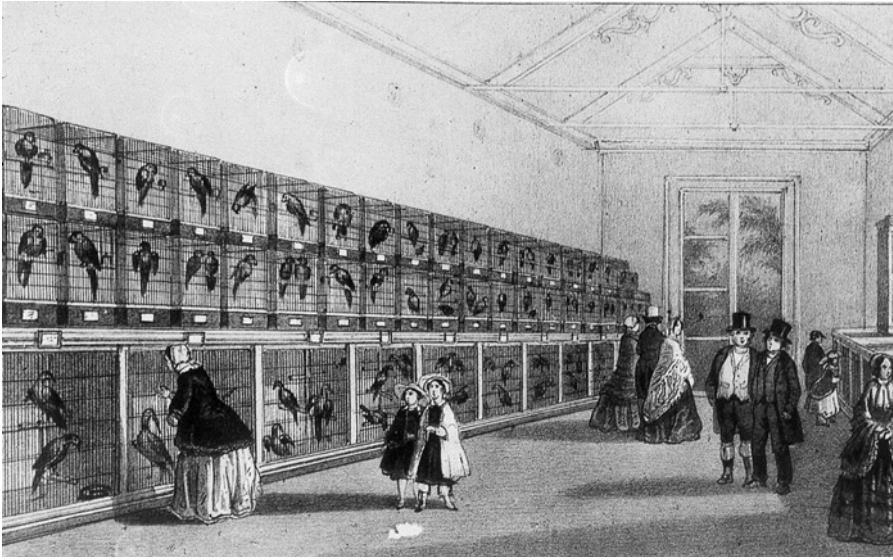
More detailed descriptions of the Ethnographic Museum have survived. Like the zoological collections, this museum was made possible by member donations and loans, and its collections also grew rapidly. Judging from the descriptions, contemporaries perceived the Ethnographic Museum as a new type of museum that exhibited objects less familiar to visitors than the natural history specimens (Illustrations 18 and 19). In this time, before strict disciplinary divisions, anthropological studies and collections comprised one area in natural history, and fit in well at the zoo. Displayed were models of factories, homes, and boats as used in the Dutch East Indies. Furthermore, the collection included traditional costumes, weapons, and household and other objects “from our [East] Indian Archipelago as well as from Japan, China, South and West Africa, and the New World.”⁶⁴ The exhibits of



13. Monkey House
Jaarboekje van het Zoologisch Genootschap *Natura Artis Magistra*, 1852.

precious silk gowns, weapons decorated with precious metals, unbelievably precise filigree from Padang give you an impression of the craftsmanship created by the wealth of the Orient. The magic horns and rain wands indicate the pitiful state of the mind in those rich areas of the world, and the hunted heads of Borneo make you shiver. You will be surprised by the copper crafts of the Battas, about the craftsmanship of people who are still cannibals, and you will be even more surprised if they unroll a Battas manuscript more than 30 feet long, written on bark and richly illustrated with figures.⁶⁵

This entry pointed out a paradox the Dutch perceived in the natives in their colonies: the peoples possessed remarkable skills for producing objects of great beauty while they remained culturally primitive. The *Artis* Ethnographic Museum displayed both the wonders and horrors of exotic beings. While the zoological garden and museum displayed animal nature from various colonized countries, the ethnographic museum displayed human – albeit “primitive” – nature. Together, the displays at *Artis* and their descriptions in the visitors’ guides gave the Dutch bourgeoisie at home a vision of nature in the colonies from which many of them extracted their wealth and a part of their national identity. In short, *Artis*, with its various restaurants, gardens, and museums, also provided pleasant



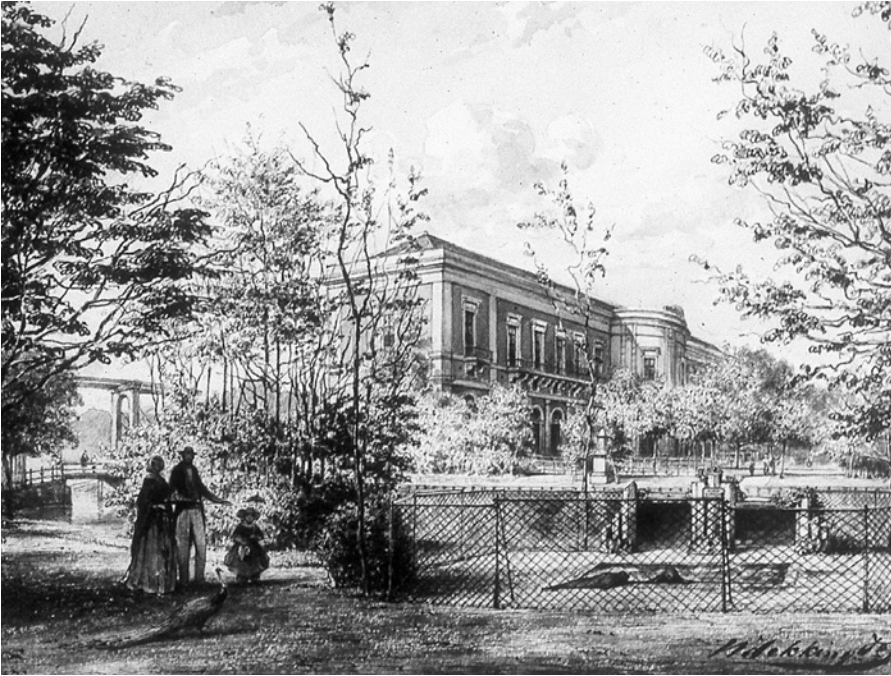
14. Bird Gallery

H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra, Amsterdam*, 1856.

surroundings and facilities for members to meet with their social equals.

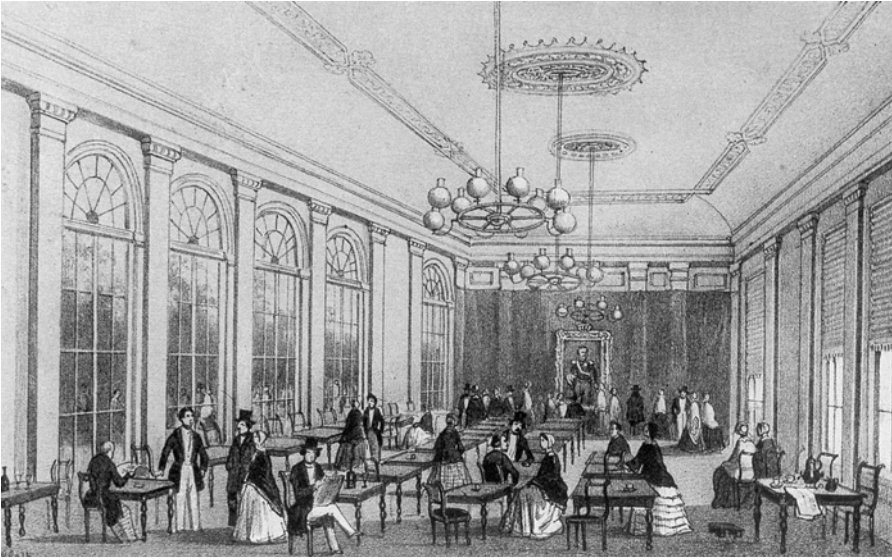
Artis also followed a contemporary trend when it chose to address its members in almanacs. Between 1852 and 1875, *Artis* published its “year-books” in the form of almanacs – a genre popular in the first half of the nineteenth century. In the 1830s alone, more than 200 series of almanacs were published in the Netherlands.⁶⁶ They varied in price and content, depending on the intended audience.⁶⁷ *Artis* consciously differentiated its own almanac from the more common ones by using high-quality paper, and producing a well-made publication.⁶⁸ Information in the zoo’s almanac – typical for this genre – included train and mail schedules, both Christian and Jewish religious holidays, birthdays of the royal family members, and solar and lunar eclipse schedules.

More specific to the zoo, these almanacs listed the founders, and the board members for every year of the zoo’s existence, as well as the current members broken down into all classes of membership. Gifts to the various collections of the zoo appeared with the donor’s name and often his or her residence. While these lists took up much of the space, the remaining pages were filled with brief descriptions of the zoological society’s collections and museums, of particular animals, and of the zoo’s activities. Poetry was published in most of the issues on topics as diverse as “Homage for the Living...



15. View of Main Building and Natural History Museum from the Garden. *In den Tuin van Artis omstreeks 1850*, W. Hekking, Jr., pen and brush, 1850. (Collection of the Gemeentelijke Archiefdienst Amsterdam, Collection Dreesman)

Officers of the Dutch Fleet on the 34th Anniversary of the Bombardment of Algiers,”⁶⁹ “At the Inauguration of the Building for the Mounted Specimens in the Society *Natura Artis Magistra*,”⁷⁰ and “Request to Respected Co-members of *Natura Artis Magistra* who are Present in the East Indies,” from whom donations were tactfully requested,⁷¹ and “A Riddle,” in which an animal is portrayed.⁷² Readers also enjoyed prose pieces about animals, which were often the work of Schlegel or other naturalists from Leiden, and illustrated with color lithographs, such as “The Aardvark,” and “The Capybara” (see color plate 5).⁷³ The almanacs also gave the Board of Directors the opportunity to address their members on zoo issues such as reminders of the library’s opening times, and the “Regulations for the Library.”⁷⁴ On another occasion, the editors commissioned a piece “On the Death of Animals in Zoos” in which the author addressed members who criticized the zoo’s management because expensive and interesting zoo animals were dying regularly. He explained in detail the difficulties faced by a zoo trying to keep animals alive.⁷⁵ And finally, there was one unusually long piece



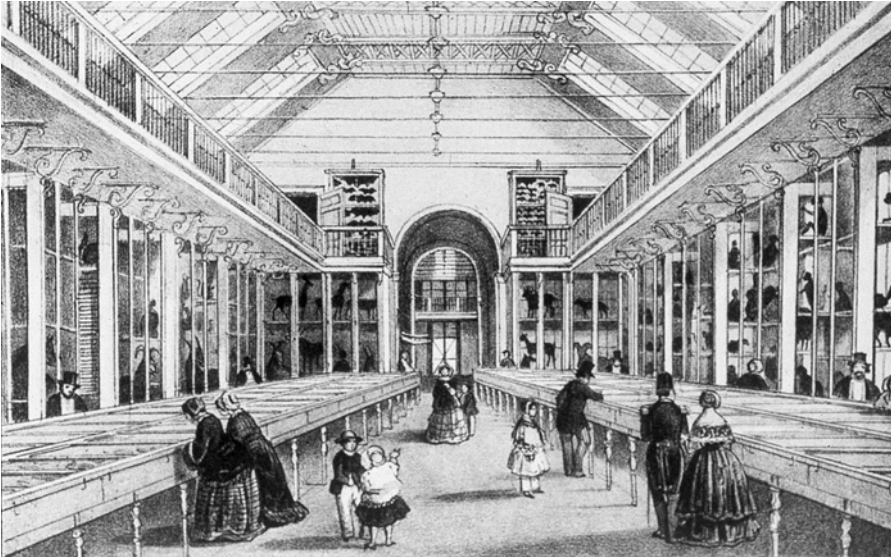
16. Restaurant with Portrait of King Willem III
 H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra, Amsterdam*, 1856. King Willem III presented the painting by Nicolaas Pieneman, here visible in the background, to *Artis*.

which detailed the celebrations surrounding the 25th anniversary of the zoo.⁷⁶ Thus, the contents of the almanacs offered zoo members a variety of information about their society, and about zoology written by learned experts, as well as a chance to see their own names in print in the membership and donor lists.

Artis Almanac

T.J. Kerkhoven, as a member of the board, proposed that *Artis* publish an almanac:

in order to have the cultivated public in our Fatherland and in the Colonies pay increasingly more attention to our Society *Natura Artis Magistra* and, further...to give to its numerous members a general overview of the said institution and its current situation (*toestand*), something that probably will exert a very good influence on the continued existence and expansion of this – especially for Amsterdam – very useful Society.⁷⁷



17. Natural History Museum Interior
H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra, Amsterdam*, 1856.

Thus, Kerkhoven, along with the other board members who approved the proposal, saw the almanac as a public relations project. By publishing a popular book annually, they hoped to attract readers and to boost the image of the zoo. Their expectation that a popular almanac would allow the zoo to expand suggests that they saw it as an instrument to bring in new (paying) members and donations.

The almanac's editorial board took their task of creating its high-quality *Yearbook* seriously.⁷⁸ They approached (honorary) members of the zoological committee to contribute pieces of general interest, and they invited other members and leaders in Dutch literary life to write poetry for the almanacs.⁷⁹ As a result, the almanac contained pieces written by prominent figures in Dutch literary and scientific circles. Hermann Schlegel wrote regularly for the *Yearbook* and illustrated his pieces with his own lithographs. Scientists who published in the almanac include Willem Vrolik, Westerman, J.A. Herklots, Claas Mulder, T.C. Winkler, and others.⁸⁰ Most of these men were involved in the development of the zoo's scientific identity, men who also published in *Bijdragen tot de Dierkunde* and/or in the *Tijdschrift voor Dierkunde*. While I have argued that the creation of the zoo's



18. First Ethnographic Museum Exterior

This housed the museum from the early 1860s until 1888 when the new ethnographic museum opened as part of the 50th anniversary celebrations.

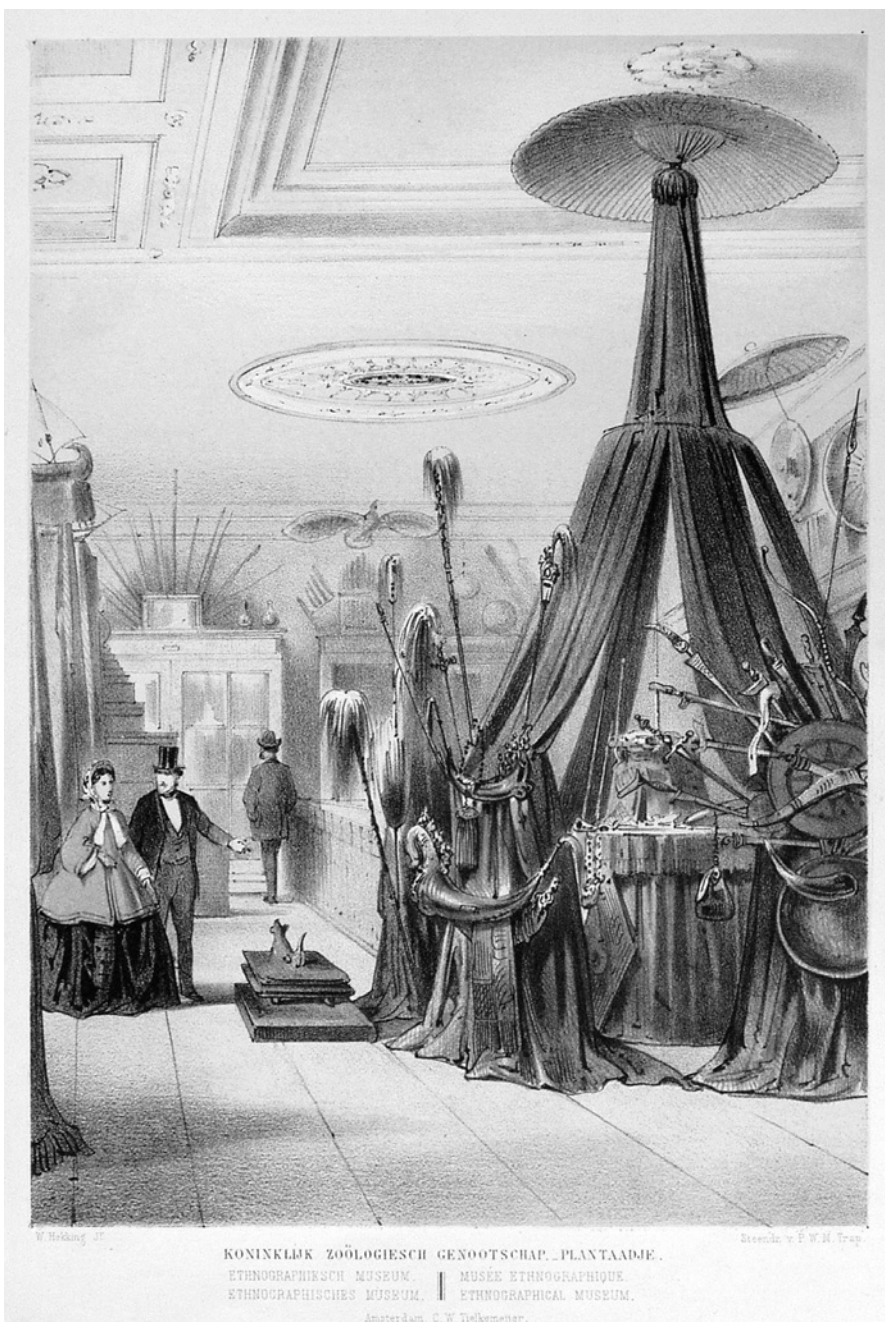
Museum van Land en Volkenkunde, undated, Emerik en Binger.

(Collection of the Gemeentelijke Archiefdienst Amsterdam)

professional journals served the career interests of the contributors as well as the interests of the institution, these same professional naturalists willingly contributed to the almanac – from which they stood to gain little in terms of international scientific recognition – and served *Artis* when they conveyed their specialist knowledge to zoo members.

Similarly, when the editorial board approached important writers who held zoo memberships, they, too, contributed to the almanac. Examples of those who wrote poems for the almanacs include J.J. Wijsmuller; more importantly, Jacob van Lennep, one of the most important writers in the Netherlands at this time;⁸¹ and G.F. Westerman's nephew, W. Marten Westerman, a professional writer for commercial almanacs.⁸²

With the cooperation of Dutch cultural and intellectual leaders, the zoo produced an almanac that conveyed scientific knowledge, reported on zoo developments, and provided entertaining stories (often on zoological topics) in verse. The reception of *Artis's* almanacs can be gauged not only by their increased sales but also from the attention they received in the news-



19. First Ethnographic Museum Interior, Main Hall
 W. Hekking, 1869. (Author's collection)

papers, particularly in the *Amsterdamsche Courant*.⁸³ Despite a negative review of the first volume in a provincial newspaper by a reader disappointed with the space given to the calendar and lists of names and donations,⁸⁴ one local Amsterdam newspaper regularly praised the volumes particularly for their valuable scientific content, and described the almanacs as demonstrations of the zoo's commitment to disseminate scientific knowledge. The scientific level of the pieces, written by "experts of name, men of experience, authorities, delivered [in the volume] very important and extremely useful contributions," and these zoological contributions rose above the superficial treatment one might expect.⁸⁵ In later praise of the almanac, this same newspaper claimed that the list of donations to the zoological society "bears witness to the recognition that the society, above all, is and must remain a scientific institution."⁸⁶ The poetry did not go unnoticed as, for example, W. Marten Westerman was cited for having "enriched a variety of volumes with the products of his poetic spirit."⁸⁷ Through this medium, the zoo actually did disseminate up-to-date natural historical knowledge to its members, while the poetry by well-known figures made the little books even more attractive.

These almanacs, unlike the *Tijdschrift* described in the previous chapter, reached the intended audience – zoo members – as their sales demonstrate. Between 800-1000 copies were sold annually at one guilder apiece.⁸⁸ The zoo annually presented another 200-300 as gifts. That the *Yearbook* never proved financially profitable mattered little. In fact, *Artis* never planned to make a profit on its sales, and actually absorbed annual losses for 23 years with this publication.⁸⁹ In the early 1870s, however, losses increased with a decline in sales. In 1875, the zoo announced to its almanac readers that they had decided to "respond to the demands of the times" by ending publication of the almanac and designing a new type of *Yearbook* for the future.⁹⁰ By this time, the heyday of almanacs had passed.

In its *Yearbook*, *Artis* had addressed its members in a literary genre popular during the middle decades of the nineteenth century, and had engaged Dutch literary luminaries. The zoological society thereby combined Dutch literary life with lay scientific culture. *Artis* added yet another dimension to Amsterdam's cultural life with its musical programs.

Zoo Music

Not only do historians of Amsterdam's nineteenth-century cultural life systematically overlook the amateur science activities at *Artis*, but they also fail to appreciate the zoo's significance in promoting serious and professional



20. Music Kiosk

H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra, Amsterdam*, 1856.

music.⁹¹ Similarly, popular histories of *Artis* also underestimate or completely overlook music in the zoological garden.⁹² By placing the musical programs *Artis* organized for its members into the context of Amsterdam's cultural life, it is clear that music at the zoo was indeed important. Zoo members heard concerts by the foremost orchestras in Amsterdam that played the important European music of the time. More significantly, *Artis* actively fostered Dutch professional music when it commissioned the work of prominent Dutch composers who conducted the premiere performances at the zoo. Such involvement shows that *Artis* did not simply contract orchestras for concerts, it also actively fostered the development of serious Dutch music. In their creation of cultural capital, the Dutch bourgeoisie successfully combined science and music in one multifunctional institution in the middle of the nineteenth century before the emergence of more specialized major cultural institutions.

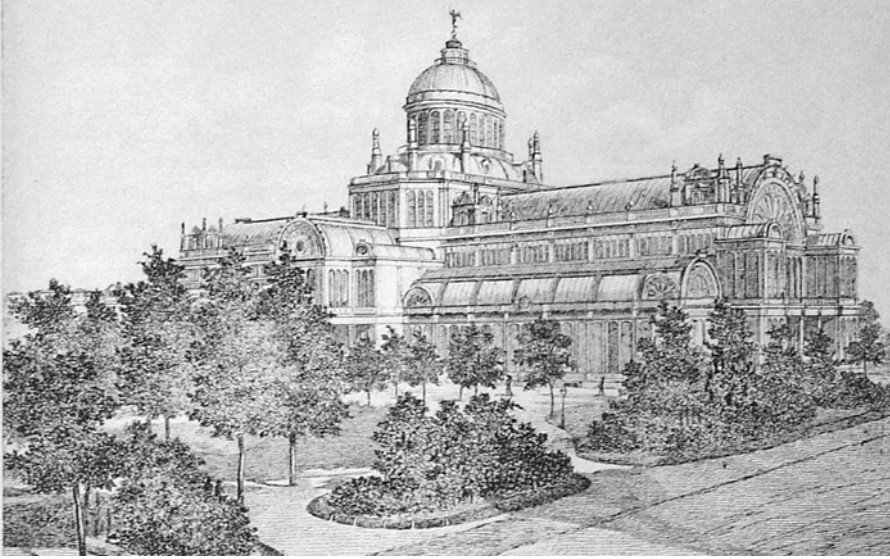
Artis's Board of Directors, in 1849, decided to institute regular summer performances marking the beginning of the decades-long popularity of music in the garden of the zoo.⁹³ In the first summer season alone, at least 13 concerts were performed at *Artis*.⁹⁴ For these successful outdoor summer performances, a bandstand was built in 1850 (Illustration 20),⁹⁵ and in time, the frequency of concerts increased. In 1855, the concert season could be

extended through the winter when the new Main Building was completed; and the multifunctional *Koningzaal* (Hall of the King), used as a meeting place and restaurant, was also made available for indoor musical entertainment.⁹⁶ The *Koningzaal* soon became too small. In 1870, the new Members' Building (*Ledenlokaal*) opened, and provided a hall specifically for the winter concerts.⁹⁷

For several decades, the most serious music of the day was performed at *Artis* by the most renowned local orchestras. In September 1849, for example, a concert was given under the direction of the Dutch musician, composer, and conductor Johannes B. van Bree.⁹⁸ As the Director of Concerts at *Felix Meritis*, Van Bree was recognized as the leader of Amsterdam's high-brow music scene.⁹⁹ The performance included two pieces written by Van Bree, one of which was composed specifically for this concert at the zoo.¹⁰⁰ Similarly, in 1850 and 1851, two more pieces by Van Bree were commissioned by *Artis* and performed there.¹⁰¹ Throughout the 1850s, the work of composers popular in nineteenth-century Europe such as Bach, Beethoven, Rossini, Wagner, Verdi, Donizetti, and Strauss, as well as less well-known Dutch composers, were performed by various orchestras at the zoological society.

Beginning in the late 1860s, *Artis* contracted concert series with two orchestras in Amsterdam, The Park (*Het Park*) Orchestra (1851-1881) and the Palace of Industry (*Paleis voor Volksvlijt*) Orchestra (1865-1882), the resident orchestras in Amsterdam's two leading performance centers. The Park Orchestra performed in their own Parkzaal located close to *Artis* in the Plantage. The Park opened its modern concert hall in 1851, and its orchestra was conducted by Johann Eduard Stumpff, and later by his nephew Willem.¹⁰² The Stumpffs, known for upholding high musical standards, brought professional musicians to Amsterdam who played a quality of music not heard before in Amsterdam with Dutch premieres of, for example, Wagner and Berlioz.¹⁰³ The Park Orchestra rose to become the leading Amsterdam orchestra, successfully competing with older institutions and replacing *Felix Meritis* as the center of Amsterdam's music life.¹⁰⁴ The success of the Parkzaal lasted three decades; it was demolished in 1881 in order to build a new theater on the site, and to meet the changing demands of its public. At this time, Amsterdam entered a new phase in its cultural life, and the former Park Orchestra fused with the Paleis Orchestra to create the Amsterdam Orchestra Union (*Amsterdamsche Orkest Vereeniging*) under the direction of Willem Stumpff.¹⁰⁵

The *Paleis voor Volksvlijt* was founded by Samuel Sarphati in 1852 to stimulate Dutch industry, agriculture, and commerce with industrial exhi-



21. Paleis voor Volksvlijt (undated print. Author's collection)

bitions.¹⁰⁶ Inspired by the *Great Exhibition of the Work of Industry of all Nations* in London's Crystal Palace in 1851, and aware of the backwardness of Dutch industry, Sarphati mobilized the same class of Amsterdam burghers who supported *Artis* and shared Sarphati's goals of financing a limited company, "the most spectacular project undertaken in Amsterdam in the nineteenth century."¹⁰⁷ Building commenced in 1858 and the Paleis opened in 1864, bearing a remarkable similarity to the Crystal Palace and the Palais de l'Industrie in Paris (Illustration 21). The Paleis served art as well as industry when its orchestra was founded in 1865. Directed by the composer, and previous Concert Director at *Felix Meritis*, Johan M. Coenen, the Paleis Orchestra performed in the massive halls of the Paleis where, later, the Amsterdam Orchestra Union performed spectacular productions, such as Wagner's *Ring of the Nibelungen*.

That the Paleis Orchestra, the Park Orchestra, and later the Amsterdam Orchestra Union regularly played at *Artis* places zoo concerts at the cutting edge of mid-century Amsterdam's music life. In the summer of 1875, for example, the Park Orchestra scheduled ten afternoon and ten evening concerts at *Artis*,¹⁰⁸ while the Paleis Orchestra scheduled nine afternoon and nine evening performances,¹⁰⁹ bringing the total number of summer orchestra performances at *Artis* to 38. In addition, the 7th Regiment Infantry Band performed six times that summer.¹¹⁰ In the winter, at least six

concerts were offered that season by the Park Orchestra.¹¹¹ Later, in 1882, the new Amsterdam Orchestra Union also performed in *Artis*.¹¹² At one point, the Amsterdam Orchestra Union depended on *Artis* performances for its financial solvency.¹¹³ The frequency of these performances demonstrates that the musical side of *Artis*'s cultural life should no longer be ignored in the historiography of Amsterdam's musical life.

These orchestras, like the zoo, depended on private initiative for their existence rather than state or city support. To raise the necessary capital, both the Paleis and The Park sold shares to the same class of burghers who were members of the zoo. The Paleis exhibitions and concerts reached the broader public who paid modest entrance fees, and The Park, as discussed in Chapter Two, although open free of charge one day a week, charged stiff entrance fees the other six days. *Artis* remained the most exclusive, and only members and their guests could attend its concerts.

The Concertgebouw

Eventually, the early orchestras stopped suiting the tastes of concert-going Amsterdammers. In 1881, the same year that the Parkzaal was razed, members of Amsterdam's comfortable middle classes took the initiative to found a new concert hall that would outshine the older halls in Amsterdam. The ambitious plans for a music temple in Amsterdam¹¹⁴ – which would ultimately be called the Concertgebouw – included a large concert hall, a smaller one modeled on the hall in *Felix Meritis*, which was famous for its good acoustics, and a garden for outdoor concerts. Like the financing of the *Paleis voor Volkslijst*, shares were sold to supporters. Despite financial difficulties in its early years, the founders succeeded, and the imposing Concertgebouw opened in 1888 (Illustration 22).¹¹⁵

Historians have uncritically assumed that the Concertgebouw was conceived simply to replace the loss of the Parkzaal.¹¹⁶ However, had the Park Orchestra met the needs of its public, its performance hall would not have been demolished in 1881 and replaced by a theater inappropriate for orchestra concerts. The Concertgebouw founders intended to build a music hall of a very different character. Rather than a small concert hall in a park, it would become a monumental temple in the newly developed area of Amsterdam that also housed the imposing Rijksmuseum. Expecting to meet a new demand, the Amsterdam Orchestra Union played spectacular pieces in the huge hall of the Paleis that had been designed for industrial exhibitions, not musical performances, and as a result, proved unsatisfying because of its notoriously poor acoustics. More importantly, the Paleis was not the dis-



22. Concertgebouw (Postcard, ca. 1912. Author's collection)

tinguished concert hall that elite Amsterdammers wanted for their city. The Concertgebouw would be a big cultural institution, comparable to those in other European cities, but on a scale not seen before in Amsterdam. Moreover, it must be seen in the context of the increasing specialization of cultural institutions. This temple, devoted only to music, was founded just a few years after a similar specialized institution opened its doors, the Rijksmuseum, devoted to fine art.

The Rijksmuseum

The Rijksmuseum was the first big nationally funded cultural institution in Amsterdam, opening in 1885, three years before the Concertgebouw. The events leading to its founding are more complex than those of the Concertgebouw; the efforts of its supporters, with their explicitly nationalist arguments in favor of a national art museum, took decades before meeting with success. In an effort to save the Dutch national heritage, Vrolik's Committee for the Preparation for the Foundation of the King Willem I Museum was formed. They raised more than 75,000 guilders, yet this amount fell far short of the 500,000 guilders projected cost of an appropriate monument to house the collection of Dutch masters, the national artistic heritage. Support on that scale could only come from the government, and the classical liberal government refused to meddle in art matters.

Despite the able chairmanship of Vrolik's son-in-law, Johannes C. Zim-



23. Rijksmuseum (Postcard, ca. 1907. Author's collection)

merman, who took over the position upon Vrolik's death in 1863, the Committee for the Preparation for the Foundation of the King Willem I Museum did not survive the 1860s.¹¹⁷ Its spirit, however, lived on, and the fight for a national art museum that took place annually in government debates in the early 1860s was revived as a public debate. Zimmerman and others used *De Gids* – for which Zimmerman served as an editor – and newspapers to voice their demands that the government take responsibility for national cultural developments.¹¹⁸ In particular, the nation needed to display the spirit of its forefathers embodied in the great masterpieces of seventeenth-century painters rather than to have them pitifully housed in the Trippenhuis. The spokesmen called for an end to the national government's policy of refraining from financing art and culture. Dutch economic expansion in the 1870s dramatically increased the government's tax income, and the bourgeoisie wanted their government to use this tax money to support Dutch culture. Eventually, the political climate changed. In 1872, when the 1873 budget for arts and sciences was being discussed, the state committed itself to the construction of an art museum that would house the national collection of treasures then being housed in the Trippenhuis. Immediately, the municipal government of Amsterdam followed suit, and promised the land on which the museum would be built, a 100,000-guilder contribution for its construction, and free license to display paintings that belonged to the city to be exhibited in the new museum. In 1875, the state allocated 1,000,000 guilders for the construction of the Rijksmuseum. In

1885, Amsterdam's first cultural monument dedicated to Dutch art, and the Dutch nation celebrated its opening with the performance of a cantata composed by Daniël de Lange, with a text written by J.J.L. ten Kate, with the prominent banker A.C. Wertheim giving the inaugural speech (Illustration 23).¹¹⁹

European Context: The Nation and the City

In many European cities, significant public cultural monuments were erected decades before comparable institutions existed in the Netherlands. The culture-conscious Dutch bourgeoisie was aware of the backwardness of their nation in the creation of major cultural institutions.¹²⁰ Compared to the Louvre or London's National Gallery, Amsterdam's monumental Rijksmuseum appeared relatively late upon the cultural landscape. The funding of the Rijksmuseum by the city and state signaled a change in Dutch cultural policy: an end to its *laissez-faire* policy and the beginning of municipal and national government support as had been the policy in other European countries and municipalities for decades.

In nineteenth-century France, for example, Daniel J. Sherman found one constant principle that the various French governments upheld: "that the arts when flourishing, contributed to both the moral prestige and the material prosperity of France, and that the government therefore had a clear and definite responsibility to support and promote them."¹²¹ In France, the fine arts bureaucracy was a product of the revolution, and the public museum (including the Louvre) dates back to the late eighteenth century. Through much of the nineteenth century, provincial museums were built to house and exhibit art commissioned and purchased by the central government. These were bourgeois institutions that, while they did not officially exclude the working class, did not make them feel welcome.¹²² Similarly, public concerts of serious music in Paris were well established by the 1820s,¹²³ and by the 1830s, chamber music had moved out of the salon and into great performance spaces.¹²⁴

In Britain, the national government established the magnificent London museums by the early decades of the nineteenth century. The British Museum was founded by an act of Parliament in 1753, its current building was erected in the mid-nineteenth century, and the circular Reading Room completed the complex in 1857.¹²⁵ This building also housed the collections of the current Natural History Museum until 1881, when the collections were separated – also indicative of cultural specialization. The National Gallery in London was founded in 1824, and its current building on Trafal-

gar Square was opened in 1838; the National Portrait Gallery, founded in 1856, moved into premises adjacent to the National Gallery in 1896.

In individual German states, art museums were also founded much earlier than in the Netherlands, such as the Altes Museum in Berlin (1830), the Gemäldegalerie in Dresden (1835), Munich's Alte Pinakothek (1836) and Neue Pinakothek (1856).¹²⁶ Some of these museums housed major collections of art unmatched in any Dutch collection. And finally, in Vienna, the Opera (*Staatsoper*) opened in 1869 as the first public building on Vienna's Ring. In fact, while he was drawing up plans, Dolf van Gendt, the architect of the Concertgebouw, carefully studied foreign, particularly German, concert halls.¹²⁷ The Concertgebouw, and more specifically its organ, bore a resemblance to the Neue Gewandhaus (1884) in Leipzig, which he held in high esteem.¹²⁸ In 1890, he stated that for Amsterdammers, the Concertgebouw had become "what the Gewandhaus was for Leipzig."¹²⁹ Clearly, the culture-conscious Dutch bourgeoisie regarded these major foreign cultural institutions as models, competitors, and signs of Dutch backwardness. Such institutions, however, required funding on a scale much greater than that of *Artis*. It took both new institutional and financial structures, as well as government involvement, to construct big national cultural institutions in Amsterdam.

In focused studies, historians have explored how the founders of museums reacted to their local historical circumstances and expressed their loyalties to their respective cities and nations. An example of a museum that explicitly reinforced national identity is the Museum of Science and Art (opened in 1865, now the Royal Museum of Scotland) in Edinburgh. The character of the museum reflected Scotland's peculiar situation of having accepted British rule and the authority of the British parliament while maintaining control of certain institutions such as its legal system and universities. The Scottish used their own institutions to develop and reinforce Scottish national identity as distinct from the English.¹³⁰ Thus, the museum in Edinburgh, funded by both Parliament in London and the city of Edinburgh, was designed to display the stereotypical *practical* character and industriousness of the Scots.¹³¹ The natural history exhibits in this Edinburgh national museum, for example, explicitly linked the natural beauty of Scotland and its natural resources with utility and industry.¹³²

The rise of museums, however, was not always the result of nationalist concerns. In his studies of ethnographic museums in Germany, H. Glenn Penny has argued convincingly that ethnographic museums in Hamburg (1867), Munich (1868), Leipzig (1868), and Berlin (1873) did not grow into major international institutions as the result of a common *national*

endeavor in the early decades of the German Empire.¹³³ Rather, their expansion was intimately related to civic interests in an atmosphere of competition between German cities, with each municipality striving to build up its own prestige. Furthermore, to demonstrate the cosmopolitan characters of their cities, the museum promoters strove to place their own museums on an international stage. These German museums, therefore, were consciously built to elevate the status of their cities in an international context.

While these two examples suggest that historiographical discussions focus on whether civic *or* national loyalties motivated actors, the dichotomy need not be drawn too distinctly. As Penny points out for Germany, regional and international orientations went hand in hand with efforts at nation-building.¹³⁴ *Both* local and national interests played roles in many cases, including *Artis* and the Rijksmuseum in Amsterdam. While Bergvelt concludes that nationalist interests played a relatively insignificant role in the museum's history because *Dutch* art was not given a privileged place in the museum's collecting policy, the national origins of the painters collected are not the only characteristic with which one can identify nationalist sentiment.¹³⁵ Amsterdam's cultural elite sought attention for a national institution with an internationally reputable art collection. A combined civic and national sentiment was the driving force behind those who campaigned for the Rijksmuseum, an institution to which both the state and the municipal treasuries ultimately contributed.

Conclusion

In the course of the nineteenth century, cultural institutions in Amsterdam became more specialized, and in many cases, decreased their social exclusivity. In the late eighteenth and early nineteenth centuries, the Dutch bourgeoisie joined enlightenment societies, such as *Felix Meritis*, where art exhibits, scientific demonstrations, and musical concerts took place. Later, societies with more liberal membership requirements appeared, such as the art-focused *Arti et Amicitiae* (discussed in Chapter 1), and *Artis*, which was devoted primarily, but not exclusively, to zoology. As a cultural institution, *Artis* appealed to many Amsterdammers, some of whom were more interested in music than in animals, and all of whom had access to a wide variety of cultural and social experiences. Even later, cultural institutions financed by shareholders and open to a broader public emerged, such as The Park (with high entrance fees) and the Paleis (with modest entrance fees). These institutions provided new cultural attractions for Amsterdammers. A new generation of monumental cultural institutions began

with the Rijksmuseum and the Concertgebouw, two temples for individual arts, both of which required public funding, or at least legal financial protection.¹³⁶ With the setting of novel precedents, local and national governments became involved in art, which changed the character of Dutch cultural institutions from exclusive and multifunctional to public and specialized.

The changes in Amsterdam's cultural life did not bode well for *Artis*. In the last two decades of the nineteenth century, the founding of new cultural institutions created alternatives for the burghers who had previously attended concerts and lectures at the zoo. *Artis* members were likely to become shareholders in the new luxurious Concertgebouw, and to join their social equals in admiration of their nation's historic legacy at the Rijksmuseum. These grand new institutions competed successfully with *Artis*.

In 1882, the year that the Concertgebouw was founded, *Artis*'s membership peaked at 6250. The following year, however, and for the first time in the zoo's history, memberships declined, and continued to decline steadily in the following seasons.¹³⁷ With the loss of members, *Artis* eventually faced severe financial difficulties that would force it to abandon its broad cultural practices and social exclusivity. In an effort to increase revenue, *Artis* gradually developed increasingly liberal policies that opened the zoo gates to the public, which consequently drove even more members away.¹³⁸ Serious music concerts at *Artis* decreased in number, as military bands performed the music of choice for the new population of Amsterdammers allowed into the zoological garden.¹³⁹ With the rise of specialized cultural institutions, *Artis* tried to compensate for its decline in popularity among the elite by appealing to non-elites, and their tastes. As a result, new visitors to the zoo probably learned less about zoology than their predecessors and did not participate in Amsterdam's high-brow music life. The previously broad cultural dimension of *Artis* that united various scientific interests and the development of serious Dutch music narrowed, as *Artis* also became more specialized.

Coincident with both the founding of the Concertgebouw and the peak in zoo membership, another monument to Dutch culture opened in 1882: the *Artis* Aquarium (Illustration 24). The building itself testifies to the changing nature of the private society as *Artis* was required by the city to serve the public by contributing to zoology education. *Artis* reasserted the privileges of membership when it constructed a separate members' entrance to the Aquarium (Illustration 25). The first *Artis* building equipped for scientific practice, the aquarium included laboratories and lecture halls for university zoology instruction. *Artis* employed a scientist, Coenraad Ker-



24. Aquarium Building and Interior

Natura Artis Magistra: Aquarium, E.A. Tilly, 1882.

The Aquarium opened in 1882. (Collection of the Gemeentelijke Archiefdienst Amsterdam)



25. Members' Entrance to the *Artis* Aquarium (Photo Jaap Boon)
Ingang Leden (literally members' entrance) distinguishes the entrance for members from other doors of the Aquarium.

bert, with a Ph.D. from the University of Leiden, to oversee the design and construction of the aquarium. He was its first curator, and upon Westerman's death, Kerbert was appointed *Artis* Director in 1890. Kerbert implemented changes at *Artis* which were intended to make the zoo more scientifically responsible, such as rearranging the animals in taxonomic order, and creating enclosures that better imitated the natural habitats of the animals.¹⁴⁰ Kerbert's affiliation with *Artis*, along with the scientific accommodations at the aquarium, mark *Artis*'s narrowing academic focus, its move toward specialization. The goal of *Artis* to advance natural historical knowledge changed caliber. By the late nineteenth century, and in part thanks to *Artis*, academic zoology appeared in the new Municipal University of Amsterdam, and the professionalized discipline of zoology found a home at the zoo.

CONCLUSION

Science, Colonial Expansion, and National Identity

The hundreds of burghers who attended G.F. Westerman's funeral in 1890 mourned the loss of "the soul of the Society."¹ *Artis*, however, had already entered its decline although it was not a direct result of Westerman's death. In their efforts to elevate the status of their nation and its capital, the Dutch burghers who financed *Artis*, and later the Concertgebouw and the Rijksmuseum, created new forms of cultural life that ultimately made *Artis* seem outmoded. In the course of his long life, which spanned most of the nineteenth century, Westerman and his contemporaries were motivated by both the civic and national loyalties that transformed Dutch culture (see color plate 6).

Science, Art, and National Identity

At *Artis*, the Dutch consciously created a scientific cultural institution that expressed a future-oriented national identity. Rather than inventing heroic myths about seventeenth-century figures such as Leeuwenhoek, Boerhaave, and Huygens, the founders and supporters of *Artis* had a vision in which scientific advancement would elevate the status of their nation. *Artis*, having achieved prominence as a cultural institution, embodied the national and civic allegiances of its members. In the decade marked by *Artis*'s founding (1838) and the War of Belgian Secession (1830), a wave of nationalism washed over the Netherlands, coupled with a sense of despair over the decline of a (potentially) great nation.² National pride and despondency characterized the 1830s and 1840s.³ If the founders and supporters of *Artis* in its first decade subscribed to a view of their nation's decline, they were not fixated on it.

Unlike the Rijksmuseum, Amsterdam's zoological society was not inspired by heroes from the Golden Age, and it did not invoke images of geniuses from Holland's past. Rather, *Artis* looked ahead as it developed

into a new type of scientific institution that would be validated only when it earned a reputation in the international scientific arena. Early in its history, the *Artis* directorate understood that science was measured by international standards. The Dutch who fostered science expressed nationalist sentiments and developed their national identity by looking forward to scientific advances and outward for international legitimation of their national sciences. In contrast, scholars have identified inward-focused nationalism coupled with a veneration of the past as principal factors in the process of national identity formation. In fact, this was the case when the Directors of the Royal Academy of Visual Arts (*Koninklijke Akademie van Beeldende Kunsten*) in Amsterdam were required to define the Dutch national style of art. They decided that celebrating the past in history painting typified Dutch art.⁴ Interestingly, a principal promoter of history painting in the art academy was Willem Vrolik, one of the central advocates and practitioners of science at *Artis*. This suggests that, while both art institutions and scientific institutions were important sites for the development and expression of national identity, the arts and sciences may have embodied distinct meanings for the nineteenth-century burgher. It is plausible that, in the development of nineteenth-century (cultural) nationalism and national identity, science symbolized the hopes for the future while art served to represent the triumphs of the past.

Colonial Connections

Amsterdam's zoological gardens, museums, and professional science prominently displayed a fundamental component of Dutch identity: successful overseas expansion. For centuries, the Dutch had enjoyed the spoils of wealth and power from their exploits in their colonies, and the exhibits at *Artis* provided a taste of the colonies for the Dutch at home. Though not explicitly a colonial institution, this zoological society must be seen as a locus of colonial pursuits. Colonization facilitated the collection of exotic specimens; colonial shipping made possible the transport of live animals to Amsterdam; and colonial commerce contributed to both the prosperity of Amsterdam and the accumulation of the capital that built *Artis*. Significantly, nineteenth-century contemporaries associated colonialism with (cultural) national identity. This was expressed most succinctly for the Dutch by the essayist Conrad Busken Huet in the 1880s, when he said "Java and *The Syndics* [a group portrait by Rembrandt] are actually our two best letters of recommendation."⁵

Science and trade developed simultaneously with European expansion.⁶

By the seventeenth century, the Dutch working in the botanical gardens of Amsterdam and Leiden had emerged as leaders in European colonial botany, and many European botanical gardens were modeled on the Leiden Hortus.⁷ The Dutch also pioneered the development of botanical gardens in the colonies as a way to study the potential of commercially interesting plants as well as to catalog colonial organisms.⁸ The collections of botanical gardens, and concurrently developed herbaria, provide early examples of how Europeans explored exotic lands, and collected and cataloged nature for both commercial and intellectual interest.

Throughout the centuries of European expansion, Europeans collected a wide variety of natural history objects that found their way into private and institutional collections. Members of the elite usually had their own cabinets of curiosities, and some of the most noteworthy natural history collections were in private hands. The Dutch have a long tradition of amassing natural history objects taken from exotic corners of the world, and in particular, from their own colonies.⁹ In the early nineteenth century, Dutch collections were institutionalized. The Rijksmuseum of Natural History, for example, was initially founded with C.J. Temminck's private collection. Later, the Dutch government embarked on systematic colonial exploration and collecting expeditions that enriched the museum's collections dramatically. Similarly, though on a smaller scale, the natural history cabinet of *Artis* was originally based on the collection of R. Draak; Westerman's living bird collection – that had grown too large for his home – comprised the first living animals. The addition of large numbers of living animals provided a new type of natural history curiosity, and one unlikely to be found in private collections in the urban homes of the bourgeoisie. Taken together, *Artis*'s collections resembled a private natural history cabinet on a grand scale made possible by the fact that it was a collective enterprise.

Artis actively solicited and received donations from members who traveled to, or lived in, the Dutch colonies, which facilitated the expansion of its collections. *Artis* consciously constructed an intricate network of members – many of them honorary – willing to take responsibility for the collection, preservation, and transportation of living animals and animal specimens from colonial holdings. In the *Yearbook* of 1852, for example, T.J. Kerkhoven appealed – in verse – to zoo members in the colonies to remember the Netherlands and to send animal gifts to the zoo.¹⁰ The practice became so widespread that *Artis* published a booklet: “Algemeene Regelen voor het Bereiden en Verzenden van Voorwerpen uit het Dierenrijk Bestemd voor het Museum van het Koninklijk Zoologisch Genootschap *Natura Artis Magistra* te Amsterdam” (“General Rules for the Preparation

and Sending of Objects from the Animal Kingdom Intended for the Royal Zoological Society *Natura Artis Magistra* in Amsterdam”).¹¹ In this publication, the naturalist Robert T. Maitland (1823-1904) explained that he hoped to prevent the problem of many well-intentioned donations that arrived at the zoo in sorry states of decay, and were therefore unsuitable for scientific investigation.¹² In these sixteen pages of detailed preservation techniques, Maitland also informed his readers that agents of *Artis* had volunteered to receive and to forward to the zoo anything intended as gifts. All seven of the agents listed resided in different locations in Dutch colonies.¹³ The prepared specimens and live animals often received free passage on the vessels of ship captains who donated their services to the zoo. In 1869, for example, 23 of the 58 *Artis* Members of Merit were ship captains.¹⁴ Captains also appear on the lists of honorary members, as do political and commercial dignitaries in the Dutch colonies.

The colonies were both a source of animals for the zoo and of wealth for Amsterdammers who financed *Artis*.¹⁵ During the French period, Dutch commerce and industry had been destroyed as the British monopolized trade in the Malay Archipelago, much of the previously controlled by the Dutch.¹⁶ After the fall of Napoleon and the restoration of the monarchy in 1813, the Dutch regained control of their colonies. The weak economy only began recovering after 1830 with the implementation of the Culture System in the Dutch East Indies, from which the Dutch reaped profits from agricultural products.¹⁷ Amsterdam had become *the* market for colonial commodities, and by 1835, for example, it had become the largest coffee market in Europe.¹⁸ After 1850, as more entrepreneurs moved to the colonies, the economy in the metropolis grew even faster, and the 1870s were particularly prosperous. The rise of shipbuilding, auctions of colonial goods in Amsterdam, and the accompanying financial institutions necessary to administer this booming economy all contributed dramatically to the municipal and state coffers as well as to the personal wealth of many Amsterdammers.¹⁹ The dramatic economic recovery attributed primarily to colonial commerce improved the positions of a large population of Dutch society.

Social Relations

This economic recovery was coupled with social change. As Kees Bruin has so skillfully demonstrated, new burgher elites arose not from the old patrician class but from men with a wide variety of backgrounds.²⁰ Previously distinct social groups, particularly those practicing religions in synagogues and churches other than the Dutch Reformed Church, came together in

the spheres of commerce, and ultimately in the chambers of the city council – positions of power traditionally controlled by the patricians.²¹ Changing social structure and interaction also precipitated innovative cultural expression and increasingly brought social interaction from the private sphere into public spheres.²² Despite their diversity, members of the new bourgeois elite, together with members of the old elite, shared the goal of creating new forms of cultural life. They did so in the name of the fatherland.

In the Netherlands in the nineteenth century, nationalist feelings and the process of redefining the national identity united disparate groups among the elite middle-class society. *Artis*'s Board of Directors (see Appendix) was comprised of both the established patriciate and the new bourgeois elite with its variety of backgrounds. They joined forces to elevate the status of Dutch cultural life, thereby realizing the ideals of nineteenth-century bourgeois culture. Together, they not only supported the rise of the zoo, but they – and their family members – fought for the founding of the Rijksmuseum and bought shares in the Concertgebouw. Members of Amsterdam's prominent and wealthy families described by Bruin as the new elite, and identified by Janzen in their struggle for the Rijksmuseum, also donated their time and expertise to the administration of *Artis*.²³ Unlike the patricians of previous centuries, Amsterdam's nineteenth-century culture builders chose to overlook their religious and social differences to realize their common vision of the nation and its capital.

The Amsterdammers at Westerman's funeral, together with burghers from across Europe who represented Europe's zoos and scientific institutions, expressed their condolences upon the death of "the doyen... of zoological gardens in Europe."²⁴ Westerman was widely recognized as a driving force behind both *Artis* and the development of zoological gardens in general. By the time his long life came to an end, the remarkably successful private zoological society envisioned by Westerman and his contemporaries was nearing its end. Institutions also have lifetimes. *Artis*'s organizational structure as a private cultural institution could no longer be maintained, nor could its dual scientific role to promote amateur and professional zoology. As Amsterdam's cultural life focused on larger specialized institutions, the appeal of *Artis* to the privileged middle classes waned. As zoology became professionalized, science at *Artis* moved increasingly, and ultimately exclusively, into the university realm. When institutionalized university science at the zoo had little to offer the visitors who admired the animals on display, *Artis* entered its second life. Here lies the paradox of Westerman's success (see color plate 7).

APPENDIX

Members of the *Artis* Board of Directors

1838-1870

Their Terms on the Board and Other Functions in Amsterdam Institutions
(If known, their social background, religion, and occupations)

Acronyms

KKF *Kamer van Koophandel en Fabrieken*.

The Chamber of Commerce and Factories that had supervisory and policy-making roles.

KKPS *Kommissaris des Konings Provinciale Staten*

Provincial Governor, an appointment made by the King.

AED *Amsterdamsch Entrepôt-Dok*

All wares arriving in the Amsterdam harbor had to be officially imported through the Amsterdam Entrepôt.

List of Members of the Artis Board of Directors

H. Huygens Backer

Served 1849-1858

1862 on District Commission of Amsterdam of the Funds for the Encouragement and Support of the Armed Forces in the Netherlands
(*Aanmoediging en Ondersteuning van de Gewapende Dienst in de Nederlanden*)

(Family of wealthy aristocrats, Dutch Reformed Church)

W.H. Backer († 1847)

Served 1839-1847

(Family of wealthy aristocrats, Dutch Reformed Church)

J.H. Burlage († 1874), Real Estate Agent

Served 1848

Trustee of the Society for the Unemployment Relief of the Frugal Craftsman (*Maatschappij tot Werkverschaffing aan den Spaarzamen Ambachtsman*)

E.W. Cramerus

Served 1864-1870+

Trustee, the Dutch Mortgage Bank (*Nederlandsche Hypotheekbank*)

Trustee, the Sailors' Home (*Zeemanshuis*)

Chairman, Dutch Central Railway Company (*Nederlandsche Centraal-Spoorweg-Maatschappij*.)

J. van Eeghen Pz. († 1865?), Shipping and Trade

Served 1858-1861

Vice-Chairman KKF

Deputy Trustee, Dutch Trade Society (*Nederlandsche Handel-Maatschappij*)

KKPS

AED Trustee Representing the City (*Kommisaris van wege de Stad*)

Trustee, Fatherland Fund for the Encouragement of the Country's Seamen (*Vaderlandsch Fonds ter Aanmoediging van 's Lands Zeedienst*)

(Prominent Amsterdam family, Anabaptist [*Doopsgezind*])

G. de la Fontaine Schluiter († 1853)

Served 1850-1853

E. Fuld (1820-1888), Banker, Head of private bank Family Becker en Fuld

Served as Treasurer 1868-1870+

KKF

Amsterdam City Councilman 1873-1888

Trustee, National Mortgage Bank (*Nationale Hypotheekbank*)

Supervisory Board (*Raad van Toezicht*) Paleis voor Volksvlijt

Governor (*Regent*), Hospital for Dutch Jewish Elderly Men and Women (*Nederlandsch Israëlitisch Oude Mannen en Vrouwen Ziekenhuis*)

Vice Chairman, Dutch Jewish Poor Council (*Nederlandsch Israëlitisch Armbestuur*)

Member of the Board, International Society for the Improvement of the Fate of the Blind and Deaf (*Internationale Vereeniging tot Verbetering van het Lot der Blinden en Doofstommen*)

Supervisory Board (*Raad van Toezicht*) Society for Municipal Credit (*Maatschappij voor Gemeente-Crediet*)

Board Member, Rembrandt Society (*Vereeniging Rembrandt*)
Member, Moral Body Charitas, (*Zedelijk Ligchaam Charitas*)
Board, Red Cross (*Rode Kruis*)
Governor (*Regent*), Medical Institution for the Dutch Jewish Insane
(*Nederlandsch Insraëlitisch Geneeskundig Gesticht voor Krankzinnigen*)
(German immigrant, Jewish)

A. van Geuns

Served 1852-1870+
KKF
Trustee, the Sailors Home (*Zeemanshuis*)
KKPS
AED Trustee Representing the City (*Kommissaris van wege de Stad*)
Trustee, Dutch Telegraph Company (*Nederlandsche Telegraaf-Maatschappij*)
(Anabaptist [*Doopsgezind*])

C.F. Gülcher (1808-1871), Lawyer, Judge Amsterdam District Court
(*Arrondissemest regtbank*)

Served 1839-1843
Amsterdam City Councilman 1856-1867
Chairman, Board of Trustees of the Walloon Orphanage (*Waalsche Weeshuis*)
Second Lieutenant North Holland Civic Guard (*Noord-Hollandse Schutterij*)
(*Waals Hervormd*) (political conservative)

P.M.G. van Hees, Lawyer

Served 1857-1870+
Board Member, the Society for the General Good (*Maatschappij tot 't Nut van het Algemeen*)
Board Member, Institution for the Shelter of the Destitute (*Inrigting Toevlugt voor Behoeftigen*)

F. van Heukelom, Grain Trade and Merchant Banking

Served 1856-1870+
Chairman, KKF
Board Member, the Society for the General Good (*Maatschappij tot 't Nut van het Algemeen*)
Chairman of the Trustees of the Grain Market (*Kommissarissen voor den Graanhandel*)

- AED Co-Director Representing Trade (*Van wege den Handel*)
(Wealthy family, Anabaptist [*Doopsgezind*])
- H.P. van Heukelom, Metal Industry, Grain Trade, Merchant Banking
Served 1858-1864
Trustee, Dutch Society for the Moral Improvement of Prisoners (*Nederlandsch Genootschap tot Zedelijke Verbetering der Gevangenen*)
(Wealthy family, Anabaptist [*Doopsgezind*])
- J.A. Heijse (1790-1857), Merchant
Served 1849-1857
Accountant of Municipal Public Works
Chief, Fire Department
- L.G. van Hoorn
Served 1852-1870+
Municipal Tax Collector, City Government Commission (*Gemeente-
Ontvanger, Kommissarissen over het Raadhuis*)
- T.J. Kerkhoven
Served 1849-1852
- A. Kooy, Sugar Refineries
Served 1854-1858
Board of Directors, Royal Dutch Sail and Rowing Society (*Koninklijke
Nederlandsche Zeil en Roeivereniging*)
- B.J. Müller (1815-1885), Lawyer
Served 1860-1868 as (*Commissaris van Financiën*)
Amsterdam City Councilman 1857-1865
Secretary Amsterdam Chapter of the Society for the General Good
(*Maatschappij tot Nut van 't Algemeen*)
Trustee, Municipal Theater (*Stedelijke Kommissie Schouwburg*)
Major, Second Battalion Civic Guard (*Schutterij*)
(German born; Dutch Reformed)
- H.C. Muller († 1849), Broker (*Konvooieloper*)
Served 1838-1849

- L.J.J. Serrurier († 1852)
 Served 1839-1851
 Member, Royal Academy of Visual Arts
- E. Sillem, Banking and Merchant with Fa. Hope and Co.
 Served 1851-1856
 (German immigrant, Jewish)
- A.A.H. Sweijs, Family of Real Estate Agents
 Served 1862-1870+
- G. Tomasachi
 Served 1850-1869
 Trustee, Dutch Rhine Railway Company (*Nederlandsche Rijn-Spoorweg-
 Maatschappij*)
- E. van de Velde
 Served 1844-1848
- J.W.H. Werleman († 1877), Broker (*Konvooieloper*)
 Zoo Founder
 Served as President 1838-1852
 KKF
- G.F. Westerman (1807-1890), Publisher and Bookseller
 Zoo Founder
 Served 1838-1890, Acting Director of *Artis* 1841-1849, Director of *Artis*
 1849-1890.
- J.J. Wijsmuller († 1882), Watchmaker
 Zoo Founder
 Served 1838-1848
- H. Angelkot Willink († 1844), Shipbuilding, Shipping and Trade
 Served 1839-1844
- J. Willink A. Dz. († 1856)
 Served 1848-1856

F.C. Zillesen, Insurance Broker
Served 1845-1870+
Naval Officer during Belgian Revolt
Co-Director, Dutch Rhine Railway Company (*Nederlandsche Rijn-Spoorweg-Maatschappij*)
Director, Dutch Building Company (*Nederlandsche Bouw-maatschappij*)
Founder, Liberal Voters Society "Burgerplicht"

Notes

See Joost Jonker, *Merchants, Bankers, Middlemen: The Amsterdam Money Market During the First Half of the 19th Century*, (Amsterdam: NEHA, 1996) for an account of the changes in Amsterdam's financial world and economy in this period when *Artis* was run by a significant number of men involved in finance.

Significantly, railways built in the nineteenth century enabled colonial products to be transported from Amsterdam throughout the country, as well as to foreign – particularly German – markets.

Sources:

A.J. van der Aa, *Biographisch Woordenboek der Nederlanden*, 2nd ed. (Haarlem: J.J. van Brederode, 1874); *Naamwijzer en Adresboek der Leden van het Bestuur van Amsterdam en van de Gemeente-Ambtenaren, de Leden der Regterlijke Magt, enz. 1862-1863* (Amsterdam: Stadsdrukkerij, 1862-1863); *Ons Amsterdam*; Personalia Card Catalog, GAA; Kees Bruin, *Een Herenwereld Ontleed: Over Amsterdamse Oude en Nieuwe Elites in de Tweede Helft van de Negentiende Eeuw* (Amsterdam: Sociologisch Instituut/Universiteit van Amsterdam, 1980); F. Galeschoot, *De Gemeente Uitgelegd: Stads Uitbreidings- en Woningbouwpolitiek in Amsterdam in de Tweede Helft van de 19de Eeuw* (The Hague: NIROV, 1983); Peter Hofland with Bert Hesp, *Leden van de Raad: De Amsterdamse Gemeenteraad 1814-1941* (Amsterdam: Gemeentearchief Amsterdam/H.J. Duyvisfonds, 1998); Peter Janzen, "Het Rijksmuseum aan de Stadhouderskade te Amsterdam: Een Wordingsgeschiedenis," *De Negentiende Eeuw* 2 (1978): 149-78; T. van Thijn, *Twintig Jaren Amsterdam: De Maatschappelijke Ontwikkeling van de Hoofdstad van de jaren '50 der Vorige Eeuw tot 1876* (Amsterdam: Scheltema en Holkema, 1965).

Notes

Introduction

- 1 This book is a revised and expanded version of my dissertation *Science Displayed: Nation and Nature at the Amsterdam Zoo Artis*, (Ph.D. Dissertation, University of Pennsylvania, 1997).
- 2 *Max Havelaar or The Coffee Auctions of the Dutch Trading Company* [originally published 1860], trans. Roy Edwards, (London: Penguin Books, 1967), p. 20.
- 3 David Blackbourn, "The Discreet Charm of the Bourgeoisie," in David Blackbourn and Geoff Eley, *The Peculiarities of German History: Bourgeois Society and Politics in Nineteenth-Century Germany*, (Oxford: Oxford University Press, 1984), pp. 159-292. Here Blackbourn alerted me to the importance of cultural institutions to middle-class culture in the nineteenth-century and he placed zoos, though relatively unexplored by historians, in the same context (pp. 199-201).
- 4 I will use the term "bourgeoisie" to refer to the middle class(es) represented by Dutch burghers. I do not wish to enter into discussions that compare and contrast the national specificity of, for example, the French term *bourgeoisie* with the German term *Bürgertum*. The most significant literature on Dutch bourgeois culture includes: Remieg Aerts, *De Letterheren: Liberale Cultuur in de Negentiende Eeuw: Het Tijdschrift De Gids*. (Amsterdam, Meulenhoff, 1997); Remieg Aerts and Henk te Velde, eds., *De Stijl van de Burger: Over Nederlandse Burgerlijke Cultuur vanaf de Middeleeuwen*. (Kampen: Kok Agora, 1998), especially Henk te Velde and Remieg Aerts, "Inleiding," pp. 9-27; Joost Kloek and Karin Tilmans (eds.), *Burger: Een Geschiedenis van het Begrip "Burger" in de Nederlanden van de Middeleeuwen tot de 21e Eeuw*, (Amsterdam: Amsterdam University Press, 2002); Henk te Velde, *Gemeenschapszin en Plichtsbesef: Liberalisme en Nationalisme in Nederland, 1870-1930*, (The Hague: Sdu, 1992); Special Issue of *De Negentiende Eeuw*, (vol. 22, 1998).
- 5 Te Velde and Aerts, "Inleiding," p. 18.
- 6 *Ibid.*, pp. 25-26.
- 7 An exception that characterizes bourgeois scientism is Remieg Aerts, "Burgerlijke Scientisme? Over Wetenschap en Burgerlijke Cultuur 1840-1880," in *Geleerden en Leken: De Wereld van de Hollandsche Maatschappij der Wetenschappen 1840-1880*, (Haarlem: Hollandsche Maatschappij der Wetenschappen and Rotterdam: Werkgroep 19e Eeuw, 2002), pp. 17-31.
- 8 See for example, Oliver Impey and Arthur MacGregor (eds.), *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, (Oxford:

- Clarendon Press, 1985); B.C. Sliggers and M.H. Besselink (eds.), *Het Verduwenen Museum: Natuurhistorische Verzamelingen 1750-1850* (Blaricum: V+K, 2002); Ellinoor Bergvelt, Debora J. Meijers, and Mieke Rijnders (eds.), *Verzamelen: Van Rariteiten Kabinet tot Kunstmuseum*, (Heerlen: Open University/Gaade Uitgevers, 1993); Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy*, (Los Angeles: University of California Press, 1994); Jozien Driessen, *Tsaar Peter de Grote en Zijn Amsterdamse Vrienden*, (Utrecht: Kosmos-Z&K, 1996); Ellinoor Bergvelt and Renée Kistemaker (eds.), *De Wereld Binnen Handbereik: Nederlandse Kunst- en Rariteiten Verzamelingen, 1585-1735*. (Zwolle: Waanders Uitgevers/Amsterdams Historisch Museum, 1992); Christa Riedl-Dorn, *Das Haus der Wunderen: Zur Geschichte des Naturhistorischen Museums in Wien*, (Vienna: Holzhausen, 1998); Debora J. Meijers, *Kunst als Natuur: De Habsburgse Schilderijengalerij in Wenen omstreeks 1780*, (Amsterdam: Sua, 1991). While not specifically about collecting, see N. Jardine, J.A. Secord, and E.C. Spary, editors, *Cultures of Natural History*, (Cambridge: Cambridge University Press, 1996) for broadly-conceived cultural perspectives on the history of natural history from the sixteenth century to the present.
- 9 London (1828), Antwerp (1843), Berlin (1844), Rotterdam (1857), Frankfurt am Main (1858), Cologne (1860), Dresden (1861), Hamburg (1863), to name a few.
- 10 One notable early exception is Helen Lefkowitz Horowitz's work on American zoos, "Animal and Man in the New York Zoological Park," *New York History* 56 (1975): 426-55; and "Seeing Ourselves Through the Bars: A Historical Tour of American Zoos," *Landscape* 25 (1981): 12-19. See also Sofia Åkerberg, *Knowledge and Pleasure at Regent's Park: The Gardens of the Zoological Society of London during the Nineteenth Century*, (Ph.D. Dissertation, Umeå University, 2001); Elizabeth Anne Hanson, *Animal Attractions: Nature on Display in American Zoos*, (Princeton: Princeton University Press, 2002).
- II Roland Baetens, *The Chant of Paradise: The Antwerp Zoo: 150 Years of History*, (Tielt, Belgium: Lannoo, 1993); Heinz Georg Klös, *Von Menagerie zum Tierparadies: 125 Jahre Zoo Berlin*, (Berlin: Haude und Spener, 1969); Heinz Georg Klös and Ursula Klös, *Der Berliner Zoo im Spiegel Seiner Bauten 1841-1989: Eine Baugeschichte und Denkmalpflegerische Dokumentation über den Zoologischen Garten Berlin*, (Berlin: Heenemann, 1990); Christoph Scherpner, *Von Bürger für Bürger: 125 Jahre Zoologischer Garten Frankfurt am Main*, (Frankfurt: Zoologischer Garten der Stadt Frankfurt am Main, 1983); Johann Jakob Hässlin and Günther Nogge, *Der Kölner Zoo*, (Cologne: Greven Verlag, 1985); K. van Swieten (ed.), *125 Jaar Diergaarde*, (Rotterdam: Stichting Koninklijke Rotterdamse Diergaarde, 1982); Henry Scherren, *A Short History of The Zoological Society of London*, (London: William Clowes and Sons, Ltd., 1901), and *The Zoological Society of London: A Sketch of its Foundation and Development*, (London: Cassell and Co., 1905); P. Chalmers Mitchell, *Centenary History of the Zoological Society of London*, (London: Zoological Society, 1929); Philip Street, *The London Zoo*, (London: Odhams Press, 1956); Lord S. Zuckerman (ed.), *The Zoological Society of London, 1826-1976 and Beyond*, Symposia of the Zoological Society of London no. 40 (London: Academic Press, 1976); Gwynne Vevers, compiler, *London's Zoo: An Anthology to Celebrate 150 Years of the Zoological Society of London*, (London: The Bodley Head, 1976); C.V.A. Peel, *The Zoological Gardens of Europe: Their History and Chief Features*, (London: F.E. Robinson and Co., 1903); Gustave Loisel, *Histoire des Ménageries de l'antiquité à nos jours* (Paris: Octave Doin et Fils and Henri Laurens, 1912). These are only some of the

- books on European zoos. Many popular histories of American zoos have also been written.
- 12 For example, the work of J.G. Nieuwendijk. He apparently based his work on archival material, but never cited specific sources. See his "Artis" in *Wonen en Wetenschap in de Plantage: De Geschiedenis van een Amsterdamse Buurt in Driehonderd Jaar*, Richter Roegholt, et al., (Amsterdam: University of Amsterdam, 1982) 99-106; "De Oprichting van Artis," *Holland, Regionaal Historisch Tijdschrift* 20 (1988): 210-22; "Artis en de Wetenschap," *Dieren* 5 (1988): 26-32; "125 Jaar Natura Artis Magistra," *Ons Amsterdam* 15 (1963): 97-129; *Zoo was Artis – zo is Artis*, (Amsterdam: J.H. de Bussy), [1970]. See also Gien Redeker and J.G. Nieuwendijk, "Artis en de Wereld," *Dieren* 5 (1988): 3-17; L. de Vries, *Het Boek van Artis*, (Utrecht: A.W. Bruna en Zoon, 1981); G. de Josselin de Jong, *Artis*, (Zaandam: G. Hille en Zoon, 1938). More serious, but not well-documented, are Pieter Smit, *Artis: Een Amsterdamse Tuin*, (Amsterdam: Rodopi, 1988); A.L.J. Sunier, "Enkele Wetenswaardigheden uit de Ontwikkelingsgeschiedenis der Amsterdamsche Combinatie: Zoologisch Laboratorium, Zoologisch Museum en Zoologische Tuin," *Bijdragen tot de Dierkunde* 28 (1949): 10-19.
 - 13 Unfortunately, many authors fail to cite their sources or they repeat errors from other secondary sources. Historians wishing to delve deeper into the meaning of zoos must remember the caveats of relying on poorly documented popular secondary sources.
 - 14 R.J. Hoage and William A. Deiss (eds.), *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, (Baltimore: Johns Hopkins University Press, 1996); Vernon N. Kislung, Jr. (ed.), *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, (London: CRC Press, 2001); Eric Baratay and Elisabeth Hardouin-Fugier, trans. by Oliver Welsh, *Zoo: A History of Zoological Gardens in the West*, (London: Reaktion Books, 2001); Lothar Dittrich, Dietrich von Engelhardt, and Annelore Rieke-Müller (eds.), *Die Kulturgeschichte des Zoos*, (Berlin: VMB, 2001.) As edited volumes or far-reaching overviews, some contributions lack a critical approach and often rely on inaccurate secondary sources.
 - 15 Given the abundance of (reproduced) mistakes only about the history of *Artis*, for example, one must hesitate to use these volumes for factual detail. The descriptions of *Artis* in the first three books in the previous note are replete with errors. Harro Strehlow, "Zoological Gardens of Western Europe," in Kislung (ed.), *zoo* is full of distortions and mistakes but few footnotes. For example, on May 1, 1838 the zoo did not *open* but rather the first meeting was held and the society was formally founded; Westerman never intended the zoo to be open to the public; *Artis* was not opened to the "poorer masses" in 1852; and when Van Aken arrived in Amsterdam and the animals were housed in barracks rather than in *Artis*, it was not because the city council did not allow *Artis* to build cages but because the city council feared the danger of wild animals within the city gates (pp. 91-92). In R.J. Hoage, Anne Roskell, and Jane Manseur, "Menageries and Zoos to 1900," in Hoage and Deiss (eds.), pp. 8-18, on p. 17, most information on *Artis* is inaccurate. For example, they claim *Artis* was: a public zoo in 1839 (*sic*) rather than a private society, and that "the Natural History Society purchased the menagerie of C. van Ascen [*sic*] and its property, which included buildings." As we will see, *Artis* was not exactly a natural history society. It purchased animals but no property from Van Aken not Van Ascen. In Baratay and Hardouin-Fugier, *Zoo*, we read on p. 307 that *Artis* was founded in 1837 (*sic*) close to an ethnographic museum, and that in 1877 it became part of the university. There was no such museum, and

- while *Artis* collaborated with the university in 1877, it did not become part of it.
- 16 Sally Gregory Kohlstedt, "Reflections on Zoo History," in Hoage and Deiss (eds.), *New Worlds* pp. 3-7.
- 17 *Ibid.*, pp. 5-6. In their ambitious overview, Zoo, Baratay and Hardouin-Fugier, explore such issues but, despite the engaging historical framework, their generalizations are unconvincing and poorly grounded. For example, they conflate not only significantly different periods of overseas expansion, but also scientific expeditions with big game hunting (Chap. 6, *Imperial Glory*, pp. 113-130).
- 18 Kohlstedt, in Hoage and Deiss (eds.), *New Worlds*, p. 6.
- 19 Richard W. Burkhardt, Jr. "The Ménagerie and the Life of the Museum," Paper Presented at the Bicentenary Conference of the Museum of Natural History, Paris, 1993; published in translation as "La Ménagerie et la Vie de Muséum," in Claude Blanckaert, Claudine Cohen, Pietro Corsi, and Jean-Louis Fischer (eds.), *Le Muséum au Premier siècle de son Histoire*, (Paris: Muséum National d'Histoire Naturelle, 1997), pp. 481-508. On Parisian zoos, see also Michael A. Osborne, *Nature, the Exotic, and the Science of French Colonialism*, (Bloomington: Indiana University Press, 1994), and "Zoos in the Family: The Geoffroy Saint-Hilaire Clan and the Three Zoos of Paris," in Hoage and Deiss (eds.), *New Worlds*, pp. 33-42. On the Jardin des Plantes, see E.C. Spary, *Utopia's Garden: French Natural History from Old Regime to Revolution*, (Chicago: University of Chicago Press, 2000).
- 20 See Åkerberg, *Knowledge and Pleasure*, for a detailed history of this zoo. The Prospectus is reprinted in Gwynne Vevers, compiler, *London's Zoo: An Anthology to Celebrate 150 Years of the Zoological Society of London*, (London: The Bodley Head, 1976), pp. 14-15.
- 21 Adrian Desmond, "The Making of Institutional Zoology in London 1822-1836: Part 1 and Part 2," *History of Science* 23 (1985): 153-85, 223-50. See also his *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London*, (Chicago: University of Chicago Press, 1989).
- 22 Rev. Richard (Starton) Owen, MA, *The Life of Richard Owen (by his Grandson)*, C. Davis Sherborn (ed.), 2 vols. (London: John Murray, 1894) in vol. 1, pp. 43, 332, 347.
- 23 P. Chalmers Mitchell, *Centenary History*, pp. 267-269.
- 24 The most thorough and well-researched work on German zoos is Annelore Rieke-Müller and Lothar Dittrich, *Der Löwe brüllt nebenan: Die Gründung Zoologischer Gärten im Deutschsprachigen Raum 1833-1869*, (Cologne: Böhlau Verlag, 1998); on the early years of the zoos in Berlin, Frankfurt, and Hamburg, see Ilse Jahn, "Zoologische Gärten in Stadtkultur und Wissenschaft im 19. Jahrhundert," *Berichte zur Wissenschaftsgeschichte* 15 (1992): 213-25; Herman Reichenbach, "A Tale of Two Zoos: The Hamburg Zoological Garden and Carl Hagenbeck's Tierpark," in Hoage and Deiss (eds.), *New Worlds*, pp. 51-62; Harro Strehlow, "Zoos and Aquariums of Berlin," in Hoage and Deiss (eds.), *New Worlds*, pp. 63-72.
- 25 Lothar Dittrich and Annelore Rieke-Müller, "Von Zoos, Menagerien und Wandermenagerien: Exotische Tiere in Menschlicher Obhut," in *Studium Generale: Vorträge zum Thema Mensch und Tier*, vol. 11, (Hannover: Tierärztliche Hochschule, 1996) pp. 149-167. On the more general phenomenon of *Bildungsbürgertum*, and the popularization of science in Germany where academics also played an important role, see Andreas Daum's excellent study *Wissenschaftspopularisierung im 19. Jahrhundert: Bürgerliche Kultur, Naturwissenschaftliche Bildung und die Deutsche Öffentlichkeit, 1848-1914* (Munich: Oldenbourg, 1998).

- 26 Joyce E. Salisbury, *The Beast Within: Animals in the Middle Ages*, (London: Routledge, 1994); Keith Thomas, *Man and the Natural World: A History of the Modern Sensibility*, (New York: Pantheon, 1983); E.P. Evans, *The Criminal Prosecution and Capital Punishment of Animals: The Lost History of Europe's Animal Trials*, with a foreword by Nicholas Humphrey, (London: Faber and Faber, 1987) [original London: William Heinemann Limited, 1906].
- 27 A.C. van Bruggen, "Van Z.M. Koning, een Casuaris voor de Diergaarde: Aantekeningen over Aanwinsten van de Hollandse Dierentuinen," *Holland, Regionaal Historisch Tijdschrift* 20 (1988): 223-37; Anne Laurine Larson, *Not Since Noah: The English Scientific Zoologists and the Craft of Collecting, 1800-1940*, (Ph.D. Dissertation, Princeton University, 1993); Herman Reichenbach, "Carl Hagenbeck's Tierpark and Modern Zoological Gardens," *Journal of the Society for the Bibliography of Natural History* 9 (1980), pp. 573-85; Annelore Rieke-Müller, "Angewandte Zoologie und die Wahrnehmung Exotischer Natur in der Zweiten Hälfte des 18. und im 19. Jahrhundert," *History and Philosophy of the Life Sciences* 17 (1995): 461-84; Kathleen G. Dugan, "The Zoological Exploration of the Australian Region and its Impact on Biological Theory," in Nathan Reingold and Marc Rothenberg (eds.), *Scientific Colonialism: A Cross-Cultural Comparison*, (Washington, DC: Smithsonian University Press, 1987), pp. 79-100; Nigel T. Rothfels, *Savages and Beasts: The Birth of the Modern Zoo* (Baltimore: Johns Hopkins University Press, 2002); Susan Sheets-Pyenson, *Cathedrals of Science: The Development of Colonial Natural History Museums during the Late Nineteenth Century*, (Montreal: McGill-Queen's University Press, 1988), esp. pp. 79-100. One early study important to note here, even though the subject is plants not animals, is Lucile Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens*, (London: Academic Press, 1979).
- 28 *The Animal Estate: The English and Other Creatures in the Victorian Age*, (Cambridge: Harvard University Press, 1987). Here she writes on animal breeding, pets, and hunting, for example. The topic of Chapter 5 is the London Zoo. See also her "The Order of Nature: Constructing the Collections of Victorian Zoos," in Hoage and Deiss (eds.), *New Worlds*, (Baltimore: Johns Hopkins University Press, 1996), pp. 43-50. In "The Power of the Word: Scientific Nomenclature and the Spread of Empire," *Victorian Newsletter* 78 (1990): 5-8, she argues that the way in which naturalists named new species of animals also reflected their imperialist conquests.
- 29 *Nature, the Exotic, and the Science of French Colonialism*, (Bloomington: Indiana University Press, 1994). On the Dutch *Koninklijke Zoologisch-Botanisch Genootschap van Acclimatatie* in The Hague that was modeled on this French zoo, see G.J.M. van Baarsel, "De Haagse Dierentuin," *Holland, Regionaal Historisch Tijdschrift* 20 (1988), 238-50. Acclimatization in Australia has also been the subject of historical inquiry in Linden Gilbank, "A Paradox of Purposes: Acclimatization Origins of the Melbourne Zoo," in Hoage and Deiss (eds.), *New Worlds*, pp. 73-85.
- 30 Osborne, *Nature, the Exotic*, Chapter 4. See also his "Zoos in the Family" in Hoage and Deiss (eds.), *New Worlds*, pp. 33-42.
- 31 A good model would be Helen Lefkowitz Horowitz's work on the rise of Chicago's cultural institutions – the Art Institute, Field Museum, Symphony Orchestra, Newberry and John Crerar Libraries – by businessmen who wanted to improve the cultural status of their city, *Culture and the City: Cultural Philanthropy in Chicago from the 1880s to 1917* (Chicago: University of Chicago Press, 1989) [originally published 1979].

- 32 Students of nationalism are in general agreement that the nineteenth century was the century of nationalism. Influential studies include Benedict Anderson, *Imagined Communities: Reflections on the Origins and Spread of Nationalism*, rev. ed. (London: Verso, 1991); Ernst Gellner, *Nations and Nationalism*, (Oxford: Blackwell, 1983); and Eric J. Hobsbawm, *Nations and Nationalism since 1780: Programme, Myth, and Reality*, 2nd ed. (Cambridge: Cambridge University Press, 1992).
- 33 J.T.M. Bank, *Het Roemrijk Vaderland: Cultureel Nationalisme in Nederland in de Negentiende Eeuw*, (The Hague: Sdu, 1990). He follows Thomas Nipperdey with his concept of cultural nationalism here. See also his "Mecenaat en Stadsontwikkeling in Amsterdam, 1850-1900," *Tijdschrift voor Geschiedenis* 104 (1991): 548-73. Bank does not interpret his findings as the invention of tradition, but what he describes conforms with the now well-known phenomenon illuminated in Eric J. Hobsbawm and Terence Ranger (eds.), *The Invention of Tradition*, (Cambridge: Cambridge University Press, 1983). For details of the economic and social transformation of nineteenth-century Amsterdam, see the excellent, classic study by Theo van Thijn, *Twintig Jaren Amsterdam: De Maatschappelijke Ontwikkeling van de Hoofdstad van de Jaren '50 der Vorige Eeuw tot 1876*, (Amsterdam: Scheltema en Holkema, 1965).
- 34 *Ibid.*, p. 550.
- 35 *Ibid.*, p. 572.
- 36 N.C.F. van Sas, "Nationaliteit in de Schaduw van de Gouden Eeuw: Nationale Cultuur en Vaderlands Verleden, 1780-1914," in Frans Grijzenhout and Henk van Veen (eds.), *De Gouden Eeuw in Perspectief: Het Beeld van de Nederlandse Zeventiende Eeuwse Schilderkunst in Later Tijd*, (Heerlen: Sun/Ou, 1992), pp. 83-106; and his *Talen van het Vaderland: Over Patriotisme en Nationalisme*, (Amsterdam: Vossius AUP, 1996), and "De Mythe Nederland," *Negentiende Eeuw* 16 (1992): 4-22.
- 37 Van Sas, "Nationaliteit," p. 102.
- 38 *Ibid.*, p. 84. He also notes that nationalism and national consciousness in some other small countries with important pasts, such as Sweden, developed along similar lines.
- 39 *Ibid.*, p. 105.
- 40 *Ibid.*, "Nationaliteit," p. 90.
- 41 See Van Sas, "De Mythe Nederland," for his detailed discussion of how the myth of the nation grew from the creation of heroes and a heroic past.
- 42 Bank, *Roemrijk*, p. 12.
- 43 *Ibid.*, p. 14-15.
- 44 *Ibid.*, p. 20. On the origin of the cult surrounding the "nationalization" of Rembrandt, see pp. 15-22. Rembrandt was not viewed as the preeminent seventeenth-century Dutch painter until the nineteenth century.
- 45 *Ibid.*, pp. 6-8, 20.
- 46 *Ibid.*, pp. 41-42.
- 47 K. van Berkel, "Natuurwetenschap en Cultureel Nationalisme in Negentiende-Eeuws Nederland," *Tijdschrift voor Geschiedenis* 104 (1991): 574-89.

Chapter One

- 1 The following account is drawn from J.G. Nieuwendijk, "125 Jaar Natura Artis Magistra," *Ons Amsterdam* 15 (1963), 97-129, on pp. 116-17, and his almost identical text in *Zoo was Artis – zo is Artis*, (Amsterdam: J.H. de Bussy, 1970), pp. 123-26.

- 2 As Kisling has pointed out, the specific origins and definitions of the “first” zoo, or a “modern” zoo have generated much debate (see his “Preface” in Vernon N. Kisling, Jr., (ed.), *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, (London: CRC Press, 2001). I consider *Artis* a “first” because the founders had *conscious*, specific (utilitarian) goals in contrast to the royal menageries that, in general, kept captive animals for amusement. While the zoo in the Jardin des Plantes in Paris pre-dates *Artis*, its origin was serendipitous – animals liberated from the royal menagerie in Versailles arrived at the gates of the Jardin.
- 3 P.H. Witkamp, “Natura Artis Magistra,” in *Amsterdam in Schetsen* (Amsterdam: G.W. Tielkemeijer, 1869), pp. 107-47, on pp. 112, for reproduction of original letter dated 29 April 1836.
- 4 *Ibid.* p. 113.
- 5 “Prospectus *Natura Artis Magistra*,” File 84, PA 399, GAA, for an original copy, and Leonard de Vries, *Het Boek van Artis*, (Utrecht: A.W. Bruna en Zoon, 1981), p. 39 for a facsimile reprint.
- 6 *Ibid.*
- 7 *Wet voor het Zoologisch Genootschap Natura Artis Magistra, decreed 20 March 1839*, Article 4, File 950.053 GAA Library.
- 8 “Prospectus *Natura Artis Magistra*.”
- 9 *Wet voor het Zoologisch Genootschap ...1839*.
- 10 *Ibid.*, Article 8.
- 11 *Wet voor het Zoologisch Genootschap ...1839*, Article 9. A member could pay 20 guilders (the equivalent of the annual membership fee) for the privilege of blackballing a proposed member. In 1841, the blackball fee was raised to 50 guilders, suggesting that many members chose to use this method of exclusion. See 1841, Bijlage B, Eerste Wet, Article 9, File 950.053 GAA Library.
- 12 *Ibid.*, Article 12. The one guilder fee was high enough to insure that only middle-class burghers visited the zoo. These rules changed slightly in later years; for example, in 1852 the days open to non-members were announced in the newspaper, and the cost was only 60 cents. *Wet voor het Zoologisch Genootschap Natura Artis Magistra*, 1852, Article 10, *Artis* Library 8a:4.
- 13 While no regulation for this appears in the first by-laws of 1839 nor in those of 1852, I have seen documents that suggest a rather open policy for allowing introduced guests into *Artis*. In 1852, for example, when the Amsterdam members numbered approximately 2,500, 35,000 non-members visited the zoo. See 15 February 1853, File 771, PA 395, GAA. It seems unlikely that each member introduced an average of 140 visitors. Perhaps introduction coupons were handed out liberally.
- 14 Neither the few documents I have seen nor the undocumented popular histories give a clear sense of the extent to which *Artis* was open to the public. I can provide only illustrative examples as evidence.
- 15 The result of these negotiations is unclear. 20 August 1840, File 705, PA 395, GAA.
- 16 L. de Vries, *Artis*, p. 45; Nieuwendijk, “125 Jaar,” p. 107. To this day, *Artis* charges reduced entrance fees in September.
- 17 L. de Vries, *Artis*, p. 45; Nieuwendijk, “125 Jaar,” p. 104.
- 18 In 1862, for example, the entrance fee was 25 cents, or one quarter of a laborer’s daily wage. See reproduction of an entrance ticket in Nieuwendijk, “125 Jaar,” p. 104.
- 19 J.G. Nieuwendijk, “Nijlpaarden,” *Ons Amsterdam* 18 (1966): 347-51. After months of

- negotiating the price, the zoo paid the remarkable sum of 12,600 guilders for them (p. 347). In 1860, *Artis* recorded 31,583 “working-class” visitors to the hippopotamus exhibit, (January 1861, File 771, PA 395, GAA).
- 20 10 February 1862, File 771, PA 395, GAA.
- 21 In my research, I have not come across a single instance of members voting against an investment recommended by the Board of Directors.
- 22 Witkamp, *Amsterdam in Schetsen* (1869), p. 129.
- 23 Other European zoos regularly faced financial problems in this period while *Artis* remained solvent.
- 24 P.H. Witkamp, “De Grondvlakte van *Natura Artis Magistra*, bij hare Uitbreiding van 1838 tot 1870,” *Jaarboekje van het Koninklijk Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1870), pp. 169-75.
- 25 *Jaarboekje van het Koninklijk Zoologisch Genootschap Natura Artis Magistra* (Amsterdam: M. Westerman en Zoon, 1870), p. 138.
- 26 Kees Bruin, *Een Herenwereld Ontleed: Over Amsterdamse Oude en Nieuwe Elites in de Tweede Helft van de Negentiende Eeuw*, (Amsterdam: Sociologisch Instituut / Universiteit van Amsterdam, 1980) for a nuanced and detailed study on the old and new elite middle-class groups in the second half of the nineteenth century. My characterization relies largely on his.
- 27 The decline of the Republic is the subject of much historical debate. See Jan Luiten van Zanden and Arthur van Riel, *Nederland 1780-1914, Staat, Instituties en Economische Ontwikkeling*, (Amsterdam: Balans, 2000), Chapter 1, and Jonathan Israel, *Dutch Primacy in World Trade, 1585-1740*, (Oxford: Oxford University Press, 1989), Chapter 9. See also Simon Schama, *Patriots and Liberators: Revolution in the Netherlands, 1780-1813*, 2nd ed. (London: Fontana Press, 1992), Chapter 2.
- 28 Schama, in *Patriots and Liberators*, analyzes this period in detail. See also the standard work by E.H. Kossmann, *The Low Countries, 1780-1940*, (Oxford: Oxford University Press, 1978), pp. 34-47. Much of the following discussion is drawn from these works.
- 29 Willem V, seen as a tyrant in revolutionary terms, fled for England after the French troops arrived in Holland. He died in exile in 1806.
- 30 This policy can be seen as indifference in the first half of the century, and formal classical liberal laissez-faire in the second half. See more on this subject in Chapter 2.
- 31 Westerman assumed the responsibilities of director in the early 1840s although he accepted the title (and, thus, a salary) only in 1849 – a position he held until his death in 1890. See Smit, *Artis*, p. 2. See the by-laws, *Wet voor het Zoologisch Genootschap*, for an explication of the director’s tasks.
- 32 See Appendix.
- 33 Jonas Frykman and Orvar Lofgren, *Culture Builders: A Historical Anthropology of Middle-Class Life*, translated by Alan Crozier, (New Brunswick: Rutgers University Press, 1987). These authors use the term “culture builders” to describe the Swedish bourgeoisie responsible for the social and cultural transformations in the nineteenth century.
- 34 W.W. Mijnhardt, *Tot Heil van ’t Menschdom: Culturele Genootschappen in Nederland, 1750-1815*, (Amsterdam: Rodopi, 1988).
- 35 Ibid.
- 36 W.W. Mijnhardt, “Loge en Cultuur, 1800-1850,” in “*Een Stille Leerschool van Deugd en Goede Zeden*”: *Vrijmetselarij in Nederland in de 18e en 19e Eeuw*, Anton van de Sande and Joost Roosendaal (eds.), (Hilversum: Verloren, 1995), pp. 85-98.

- 37 *De Negentiende Eeuw* 7 (1983) is a special issue on these societies.
- 38 H.A.M. Snelders, "De Natuurwetenschappen in de Lokale Wetenschappelijke Genootschappen uit de Eerste Helft van de Negentiende Eeuw," *De Negentiende Eeuw* 7 (1983): 102-22. He compiles a list of 45 societies founded between 1750-1850. Snelders qualitatively judges the societies's intellectual content based on original scientific contributions made by its members on the premises of their scientific society. Scientific societies that functioned more obviously as meeting places than as representatives of the scientific vanguard are dismissed by Snelders as mere "clubs" (*gezelligheidsvereniging* and *sociëteit*) (for example p. 113). Given this perspective, he easily overlooks the more significant character of the societies' sociocultural role. Snelders's more important contribution in this article is his list and descriptions of the dozens of scientific societies he located throughout the Netherlands in both major cities and smaller towns between 1750-1850. Unfortunately, Snelders does not thoroughly describe their institutional structures although he often attributes their rise and fall to institutional organization. See also J.A. Goedkoop, "Twee Eeuwen Natuur- en Letterkunde Genootschap in Alkmaar," *De Negentiende Eeuw* 7 (1983), pp. 179-200.
- 39 Snelders, "Genootschappen," p. 107.
- 40 *Ibid.*, pp. 110, 112.
- 41 James E. McClelland, III, *Science Reorganized: Scientific Societies in the Eighteenth Century*, (New York: Columbia University Press, 1985), p. 124.
- 42 M.J. van Lieberg, "Geneeskunde en Medische Professie in het Genootschapswezen van Nederland in de Eerste Helft van de Negentiende Eeuw," *De Negentiende Eeuw* 7 (1983): 121-45.
- 43 *Ibid.*, p. 131, 133.
- 44 *Ibid.*, p. 133.
- 45 *Ibid.*, p. 136.
- 46 On *Felix Meritis*, founded in 1777, see T. van Thijn, *Twintig Jaren Amsterdam: De Maatschappelijke Ontwikkeling van de Hoofdstad, van de Jaren '50 der Vorige Eeuw tot 1876*, (Amsterdam: Scheltema en Holkema, 1965), esp. pp. 165-169, 501-503; *Documentatieblad Werkgroep Achttiende Eeuw*, Special Issue on *Felix Meritis*, 15 (1983); Boudien de Vries, *Electoraat en Elite: Sociale Structuur and Sociale Mobiliteit in Amsterdam, 1850-1895*, (Amsterdam: Gemeentelijke Archiefdienst van Amsterdam/De Bataafsche Leeuw, 1986), pp. 82-4.
- 47 Interestingly, in "Genootschappen," Snelders states that *Felix Meritis* was the only society of scientific importance in Amsterdam in the first half of the nineteenth century (p. 113). While *Felix Meritis* maintained some scientific activities, science decreased in importance in that society as a whole in this period. *Artis*, overlooked by Snelders, sustained a much more active scientific life than *Felix Meritis*.
- 48 B. de Vries, *Electoraat en Elite*, p. 82. *Felix Meritis*, financed by membership fees, suffered when its membership dropped to a low of 202 in 1858.
- 49 *Ibid.*, p. 82. Its membership fees (60 guilders in mid-century) were significantly higher than those of *Artis*; (20 guilders) and *Felix Meritis* had a significantly lower membership (in 1854, 353).
- 50 *Ibid.*
- 51 W. van den Berg discussed literary societies that suffered fates similar to those described by Snelders and Van Lieberg in "Het Literaire Genootschapsleven in de Eerste Helft van de Negentiende Eeuw," *De Negentiende Eeuw* 7 (1983): 146-78.

- 52 Margriet de Roever, "Verbroedering en Kunstzin, 1839-1875," in Jan Jaap Heij (ed.), *Een Vereeniging van Ernstige Kunstenaars: 150 Jaar Maatschappij Arti et Amicitiae 1839-1989*, (Amsterdam: Uitgeverij Thoth, 1989), pp. 12-27, on pp. 14-15. It is no accident that the Latin name of the art society resembles *Artis*. This was intentional, and taken as a compliment by *Artis* (p. 15). On the history of *Arti et Amicitiae*, see further articles in Jan Jaap Heij (ed.), *Een Vereeniging*; B. de Vries, *Electoraat en Elite*, pp. 86-9; Van Thijn, *Twintig Jaren*, esp. pp. 173-78.
- 53 B. de Vries, *Electoraat en Elite*, p. 86.
- 54 Ibid. Its annual dues were 15 guilders in the middle decades of the nineteenth century while *Artis's* dues were 20 guilders.
- 55 B. de Vries, *Electoraat en Elite*, p. 86. In 1854, for example, *Arti et Amicitiae* had 666 members; *Artis* membership at this time was approaching 3,000.
- 56 De Roever, "Verbroedering," p. 14. Other artists' societies in the Netherlands and in France also copied this organizational form.

Chapter Two

- 1 Arnold van der Valk, *Amsterdam in Aanleg: Planvorming en Dagelijks Handelen 1850-1900*, (Ph.D. Dissertation, University of Amsterdam; 1989); Hans Buiter, *Riool, Rails en Asfalt: 80 Jaar Straatruoer in Vier Nederlandse Steden* (Ph.D. Dissertation, Eindhoven University of Technology, 2005).
- 2 C.J. Franssen and J. van Zwijndrecht, *Beknopt Leerboek der Staatsinrichting van Nederland*, revised by H.M. Franssen and J.F. Schouwenaar-Franssen, (Groningen: J.B. Wolters, 1967), p. 137. See Chapter 15 for a detailed explanation of the structure of Dutch municipal government. Works that relate the general changes in social stratification and in the Amsterdam city politics include T. van Thijn, *Twintig Jaren*; F. Galesloot, *De Gemeente Uitgelegd: Stadsuitbreidings- en Woningbouwpolitiek in Amsterdam in de Tweede Helft van de 19de Eeuw*, (The Hague: NIROV, 1983); K. Bruin, *Herenwereld*; B. de Vries, *Electoraat en Elite*; A. van der Valk, *Amsterdam in Aanleg*.
- 3 Democratization at this time took the elections out of the hands of the city councilmen and into the hands of the moneyed middle class. The right to vote was based on the amount of taxes one paid.
- 4 The significance of the Dutch government's laissez-faire policies has received more attention from historians interested in art than in science. The best analysis is Jan Hart, "Kunst, Regeringszaak? 1848-1918," in *Kunst en Beleid in Nederland 3* (Amsterdam: Boekmanstichting/Van Gennep, 1988), pp. 67-141, where he discusses the changing social, economic, and political contexts.
- 5 M.F. Wagenaar, "Een Epidemie in Kaart Gebracht," in W.F. Heinemeijer, M.F. Wagenaar, et al., *Amsterdam in Kaarten: Verandering van de Stad in Vier Eeuwen Cartographie*, (Ede: Zomer & Keuning, 1987), pp. 128-131, table on p. 129.
- 6 Galesloot, *De Gemeente Uitgelegd*, p. 17.
- 7 Van der Valk, *Amsterdam in Aanleg*, p. 561.
- 8 Gerardus Theodorus Jozef Delfgaauw, *De Grondpolitiek van de Gemeente Amsterdam*, (Amsterdam: H.J. Paris, 1934), p. 15. This discussion of city expansion in the nineteenth century draws heavily upon this book, especially Chapter 1. More recent studies do so, as well. See, for example, A. Alberts, A.J. Vos, and D.H. Wolff, *De Plantage als Sieraad aan de Amstel*, (Amsterdam: Kampert en Helm, 1972), and F. Galesloot, *De*

- Gemeente Uitgelegd*. Van der Valk, *Amsterdam in Aanleg*, and Buiten, *Riool, Rails en Asfalt*, have revised this view and explored cases in which the city government apparently abandoned laissez-faire, in particular through the authority and projects (often to create urban infrastructure) of the Office of Public Works.
- 9 Delfgaauw, *De Grondpolitiek*, p. 14.
- 10 *Ibid.*, pp. 1, 21.
- 11 *Ibid.* See chapter 1, especially pp. 16-18 and 20-21, where Delfgaauw describes discussions among the B&W and city council members about whether or not it was the job of a municipality to speculate on land prices, and whether or not it was in the public interest to do so.
- 12 *Ibid.*, p. 7.
- 13 *Ibid.*, pp. 16-17; for discussions in the city council in the 1870s, see pp. 20, 21.
- 14 *Ibid.*, p. 1.
- 15 Many general popular histories of the Plantage discuss this topic. See, for example, Ko van Geemert and Karel Warmenhoven, *Van Artis tot Zeeman: De Amsterdamse Plantage en Weesperbuurt van A tot Z*, (Alkmaar: René de Milliano, 1999); Richter Roegholt, et al. *Wonen en Wetenschap in de Plantage: De Geschiedenis van een Amsterdamse Buurt in Driehonderd Jaar*, (Amsterdam: University of Amsterdam, 1982); Allard Jolles, "De Plantage," in *Publikaties* (Amsterdam: Dienst Ruimtelijke Ordening Amsterdam, 1993); A. Alberts, A.J. Vos, and D.H. Wolff, *De Plantage als Sieraad aan de Amstel*. Historical articles about the Plantage regularly appear in the monthly magazine *Ons Amsterdam*.
- 16 On the history of the botanical garden, see D.O. Wijnands, E.J.A. Zevenhuizen, and J. Heniger, *Een Sieraad voor de Stad: De Amsterdamse Hortus Botanicus, 1638-1993*, (Amsterdam: Amsterdam University Press, 1994), and, for a brief discussion, H. Wiering, "De Hortus Botanicus," in Richter Roegholt, et al., *Wonen en Wetenschap in de Plantage*, pp. 106-116.
- 17 Delfgaauw, *De Grondpolitiek*, p. 9.
- 18 Popular histories tend to focus on the naturalist setting of the Plantage although Roegholt in "Driehonderd Jaar Plantage," in Roegholt, et al., *Wonen en Wetenschap*, pp. 9-88 does point out the contrast between the popular recreational area and the industrial developments there. I have not encountered any specific secondary literature on industrialization in the Plantage although I have read archival sources, one detailed later in this chapter, in which the filth of the neighborhood smoke-stacks enraged the local residents as well as the zoo board.
- 19 Van der Valk, *Amsterdam in Aanleg*, p. 64. M.F. Wagenaar, in "De Plantage: Wonen in een Lustoord," in W.F. Heinemeijer, M.F. Wagenaar, et al., *Amsterdam in Kaarten: Verandering van de Stad in Vier Eeuwen Cartographie*, pp. 132-35 (Ede: Zomer & Keuning, 1987), on p. 133, claims that the city did not want working-class homes to be constructed here and required the landowners to build costly houses. It is unclear what sources he has used.
- 20 Wagenaar, "De Plantage," p. 123.
- 21 Delfgaauw, *De Grondpolitiek*, p. 24. Plantage property that in 1860 sold for 1.00-1.50 guilders per square meter sold for 8.50 guilders per square meter in 1870.
- 22 P.H. Witkamp, *Amsterdam in Schetsen*, (Amsterdam: G.W. Tielkemeijer, 1869), pp. 113-114.
- 23 In 1869, for example, 38 of the 39 members of the Amsterdam City Council were also zoo members, and all four aldermen as well. The mayor was granted an honorary

- membership. Unfortunately, given the scope of this study, I was not able to delve into the rhetorical strategies of the Amsterdam city government. I have not been able to determine what the B&W and city council members really thought about the public interest. Rather, I can only discuss here the arguments they used in the sources I read. Why so many of these men were paying members of *Artis*, and why they – when sitting in city hall – created obstacles to the growth of the zoological society is puzzling. I can speculate on the matter but have no documented explanations.
- 24 In “De Aankoop van de Menagerie van Cornelis van Aken door het Amsterdamse Genootschap ‘Natura Artis Magistra,’” (*Gewina* 19: 133-152), Smit gives a detailed account of the problems surrounding Cornelis van Aken’s employment as custodian of the animals he sold to the zoo.
- 25 For more information about traveling menageries and the Amsterdam carnival in the nineteenth century, see Marja Keyser, *Kom dat Zien! De Amsterdamse Kermis in de Negentiende Eeuw*, (Amsterdam: B.M Israel, 1976), especially pp. 141-58.
- 26 The B&W apparently felt the greatest threat was posed by the elephant. When the zoo’s secretary Muller wrote to Van Aken asking him to forestall his arrival in Amsterdam – a letter sent too late to reach him as he was already on his way – he also asked Van Aken to sell the elephant if he should find a buyer. Muller clearly hoped to avoid further conflict with the city by selling the elephant. See Witkamp, *Amsterdam*, pp. 121-23 for further discussion and Muller’s letter to Van Aken reproduced.
- 27 To *Natura Artis Magistra* from Commissioner of Public Works, 23 December 1839, File 703, PA 395, GAA. *Artis* was held responsible for any damage caused to the building.
- 28 Quote appears in Witkamp, *Amsterdam*, p. 121.
- 29 The three members were H. Angelkot Willink, L.J.J. Serrurier, and W.H. Backer.
- 30 May 1840, File 704, PA 395, GAA.
- 31 20 Aug 1840, File 705, PA 395, GAA.
- 32 For examples not discussed in detail below, see File 706, PA 395, GAA. For example, the zoological society repeatedly requested permission to build a wooden fence along one edge of their property and the city repeatedly denied this request over a period of five years, 1841-1846.
- 33 Request 3 March 1851; refusal 7 March 1851, File 721, PA 395, GAA.
- 34 Zillesen Missive, 19 March 1851, File 721, PA 395, GAA (also includes copies of rental contracts of 18 June 1850). The following discussion is based on this document. Some of the original contracts discussed and referred to in this complaint to the B&W are located in the same file.
- 35 Zillesen Missive.
- 36 The annual rent paid to the city was 1500 guilders.
- 37 Paris, London, Berlin, Antwerp, and Vienna, among others, were described.
- 38 Zillesen Missive.
- 39 2 April 1851, Gemeenteraad Openbare Notulen, Microfilm Reel 1055, GAA.
- 40 Ibid.
- 41 3 April 1851, File 721, PA 395, GAA.
- 42 Ibid.
- 43 14 April 1851, File 721, PA 395, GAA.
- 44 7 May 1851, Gemeenteraad Openbare Notulen, Microfilm Reel 1055, GAA.
- 45 13 May 1851, File 721, PA 395, GAA.
- 46 11 October 1851, File 721, PA 395, GAA.

- 47 15 Dec 1852, File 771, PA 395, GAA, explains Article 182 of the law of 29 June 1851 under the Chapter IX Education, Arts and Sciences. The municipality was particularly concerned with collections held by these institutions. This law required annual reports until 1872, when they were required only every five years for some, though not all, societies. *Artis* was included among those required to submit reports although I do not understand why the government could require such reports from a private institution. See 9 January 1872, File 771, PA 395, GAA.
- 48 File 771, PA 395, GAA. This point was made in reports dated 1860, 1868, 1869, 1870, and 1872.
- 49 File 771, PA 395, GAA. In reports dated 1861, 1864, 1867, and 1872, memberships numbered 3442, 3894, 4267, and 4562 respectively.
- 50 File 771, PA 395, GAA. This point was made in reports dated 1860, 1861, and 1862.
- 51 File 771, PA 395, GAA. Report dated 1862 included elementary education; 1865 and 1868 reports described attempts to reach teachers and students of all levels. For more examples of their contribution to educators, see also 5 January 1863 and 13 January 1863 (two drafts), 15 February 1864, 18 April 1873, File 772, PA 395, GAA.
- 52 File 771, PA 395, GAA. This point was made in reports dated 1857, 1860, 1863, 1864, 1867, 1868, 1869, 1870, and 1872.
- 53 File 771, PA 395, GAA. In reports dated 1857 and 1858 they complain of taxes and lack of land; in 1863 only land is a problem. In 1857, they applied to the state for tax-exempt status as a scientific institution. This was met with controversy, but I have not found the final decision. Their problem regarding land was temporarily abated because of major land acquisitions in 1863 and 1868. For another context in which the zoo expressed their need for land see also, 12 September 1864, File 735, PA 395, GAA.
- 54 File 730, PA 395, GAA for a copy of a poster announcing the city council decision of 28 July 1857 to sell the leased land. While this first sale did not take place as planned because of the uproar lease holders created, in 1860-61 the land was liquidated. For details, see Delfgaauw, *De Grondpolitiek*, and A. Alberts, A.J. Vos, and D.H. Wolff, *De Plantage*.
- 55 File 730, PA 395, GAA. This document is an undated draft in Westerman's hand but it suggests it was written soon after this land sell-out. I do not yet know if these offers were made and the figures suggest that such deals were not carried out in the immediate years following the sales in 1860-61. Because the point at hand is that the zoo was desperately, creatively, and at great expense trying to expand its real-estate holdings, whether or not these offers were actually made is not essential to my point, but rather this document illustrates the extent to which they were considered.
- 56 File 735, PA 395, GAA. See especially 18 May 1864. Correspondence detailing this conflict (usually in the form of reiterated complaints to the city council and not only from the zoo) can be found here, 15 February 1864 through 31 January 1866 .
- 57 The calculations in Westerman's hand are undated but clearly were made after the fire on 13 July 1865 and before the board meeting reported on 22 August 1865.
- 58 23 August 1865 and 4 September 1865, File 735, PA 395, GAA. The *Gedeputeerde Staten* have the responsibility to oversee municipal governments, therefore Westerman was appealing to higher authorities than the Amsterdam B&W and City Council.
- 59 I have not found documents that explain the outcome of Westerman's attempts.
- 60 3 October 1868, File 749, PA 395, GAA.
- 61 10 October 1868, File 749, PA 395, GAA.

- 62 *Natura Artis Magistra* to B&W and City Council, 26 January 1850, File 372, 5079, GAA.
- 63 B&W decision, 30 January 1850, File 372, 5079, GAA. Here, the decision of the B&W not to give up land to the zoo is justified in terms of the public interest. They wanted to keep the land accessible and to keep Amsterdammers in the city for their leisure time – to increase excise taxes – and the disadvantage of the land being under control of the private society.
- 64 In this period, increasing numbers of Amsterdammers were leaving the city for pleasant excursions and spending their money outside of the tax jurisdiction of Amsterdam. Furthermore, in 1865, the city lost a considerable amount of income when excise taxes were abolished. See Galesloot *De Gemeente Uitgelegd*, p. 27, on the loss of excise taxes, and the city government's attempts to provide attractive leisure activities within the city.
- 65 To City Council from B&W, 23 March 1850, File 372, 5079, GAA.
- 66 Aquarium Report, 17 June 1872, File 772, PA 395, GAA. This is also a fascinating survey of European zoos written by an anonymous person obviously commissioned by *Artis*. The seven cities visited were Hanover, Hamburg, Brussels, Berlin, Dresden, Cologne, and Antwerp. Noticeably absent is Paris. The first four of these had aquariums. (Interestingly, the traveler paid as much attention to the restaurant facilities as to the aquariums. This clearly suggests that despite the rhetoric and practice of science at the zoo, the bourgeois comforts of continental zoo visitors remained important.)
- 67 Aquarium Report, 17 June 1872, File 772, PA 395, GAA.
- 68 "...met alle kleinigheid bemoeid en de groot[t]e, zowel als de hoofdzaak, over het hoofd ziet." Aquarium Report.
- 69 Aquarium Report.
- 70 28 September 1874, File 772, PA 395, GAA.
- 71 4 December 1876, File 772, PA 395, GAA. Westerman originally drafted these points in 1874.
- 72 4 December 1876, File 772, PA 395, GAA.
- 73 These arguments come from an undated speech "Slowly but Surely" (*Langzaam maar Zeker*) in Westerman's hand, see File 772, PA 395, GAA. Some of these points are also made in 4 December 1876, File 772, PA 395, GAA.
- 74 *Van Atheneum tot Universiteit: Geschiedenis van het Atheneum Illustre in de Negentiende Eeuw Amsterdam* (Amsterdam: Curatoren van de Universiteit van Amsterdam/Stadsdrukkerij, 1927). For example, in the failed reorganization scheme of 1863 when the city expected a subsidy, its estimated costs for laboratories and teaching material for the medical and science faculties were 100,000 guilders (p. 104). (Interestingly, these were the only two faculties they would reorganize; the others would remain unchanged.)
- 75 Few critical histories of Dutch universities – including the University of Amsterdam – have been written. I have drawn the bulk of this narrative from the two most complete chronological sources available, both commissioned by the university and written as celebratory volumes for anniversaries: *Van Atheneum tot Universiteit* and *Gedenkboek van het Atheneum en de Universiteit van Amsterdam, 1632-1932* (Amsterdam: Stadsdrukkerij, 1932). Other works on nineteenth-century Dutch university history include: K. van Berkel, *In het Voetspoor van Stevin: Geschiedenis van de Natuurwetenschap in Nederland, 1580-1940* (Amsterdam: Boom Meppel, 1985); Joseph C.M. Wachelder,

- Universiteit tussen Vorming en Opleiding: De Modernisering van de Nederlandse Universiteit in de Negentiende Eeuw* (Hilversum: Verloren, 1992); W. Otterspeer, (ed.), *Een Universiteit Herleeft: Wetenschapsbeoefening aan de Leidse Universiteit vanaf de Tweede Helft van de Negentiende Eeuw*, (Leiden: E.J. Brill/Universitaire Pers Leiden, 1984); W. Otterspeer, *De Wiekslag van hun Geest: De Leidse Universiteit in de Negentiende Eeuw*, (The Hague: Stichting Hollandse Historische Reeks, 1992); G. Jensma and H. de Vries, *Veranderingen in het Hoger Onderwijs in Nederland, 1815-1940*, (Hilversum: Verloren, 1997). For a detailed comparative study of the social foundations of nineteenth-century European universities and the natural sciences, particularly on the role of Dutch educational reform in the development of the physical sciences, see Bastiaan Willink, *Burgerlijk Scientisme en Wetenschappelijk Toponderzoek: Sociale Grondslagen van Nationale Bloeiperiodes in de Negentiende-Eeuwse Betawetenschappen*, (Ph.D. Dissertation, University of Amsterdam, 1988), as well as his “Origins of the Second Golden Age of Dutch Science after 1860: Intended and Unintended Consequences of Educational Reform,” *Social Studies of Science* 21 (1991): 503-26, and *De Tweede Gouden Eeuw: Nederland en de Nobelprijzen voor Natuurwetenschappen 1870-1940*, (Amsterdam: Uitgeverij Bert Bakker, 1998).
- 76 Anja Hiddinga, “Obstetrical Research in the Netherlands in the Nineteenth Century,” *Medical History* 31 (1987): 281-305, on p. 286.
- 77 *Van Atheneum tot Universiteit*, p. 101. For example, c. 1863, the two-year university *propaedeuse* tuition was 230 guilders; the same program at the Amsterdam Atheneum cost 800 guilders. The following discussion is derived from this source.
- 78 *Ibid.*, pp. 86-95 on the negotiations between the city council and atheneum trustees.
- 79 *Ibid.*, pp. 95-113 for more details.
- 80 *Ibid.*, see in particular, p. 113, when the city expected a subsidy from the national government.
- 81 *Ibid.* These conflicts also led to resignations of professors (p. 97), trustees (p. 100), and to a general “brain drain” of atheneum professors who accepted university positions elsewhere (p. 98).
- 82 June 1877, File 772, PA 395, GAA. Other stipulations not relevant to this discussion included the requirement that the zoo had to fence off the property with an iron fence approved by the city and that the agreement be drawn up by a municipal-appointed attorney.
- 83 *Natura Artis Magistra* to B&W, 24 September 1877, File 772, PA 395, GAA, objecting to provisions in draft of agreement; 1 October 1877 reply from B&W stating that they meant exactly what they said.
- 84 *Natura Artis Magistra* to B&W, 9 July 1877, File 772, PA 395, GAA. Interestingly, here Westerman also refers to the city’s recommendation to grant access to the land in which the city said the aquarium was to become the biggest one anywhere. Westerman took the opportunity to explain that that could not be the case because it would require much more capital and land. They could not possibly surpass the Brighton aquarium, which cost one million guilders and was built on much more land than that available to *Artis*.
- 85 For the *Rules for Use of the Collections* see 24 September 1877, File 772, PA 395, GAA (first and final *Artis* drafts) and 12 October 1877 (approved by city).
- 86 File 772, PA 395, GAA. At one point the city actually suggested, that *Artis* build a complete zoological institute for the university on its own property, but this idea, absurd to the zoo board, was never pursued.

- 87 With this agreement, the city saved an enormous investment in laboratories, books, and zoological specimens required for the new university. In the last quarter of the nineteenth century, for example, the University of Leiden increased the budgets from which many laboratory facilities were to be realized. In 1875, 25,700 guilders was budgeted for a new zoöatomy laboratory, (Otterspeer, *De Wiekslag van hun Geest*, p. 38. See also his section on university finances, pp. 30-40.)
- 88 6 November 1877, File 772, PA 395, GAA. Despite this note, I have seen no evidence that the zoological society actually attempted to bill the University of Amsterdam for the space.
- 89 *Gedenkboek van het Atheneum*, pp. 280, 548.
- 90 Florence F.J.M. Pieters, and Jaap de Visser, "The Scientific Career of the Zoologist Max Wilhelm Carl Weber (1852-1937)," *Bijdragen tot de Dierkunde* 62 (1993): 193-214, on p. 197.
- 91 I thank Ruth Oldenziel for the fruitful discussion in which this point arose.
- 92 See Chapter One.
- 93 While it is true that the distinction between private and public is blurred, a common mistake in zoo history literature is to assume that zoos have always been public institutions when they were, in fact, open to a very limited public unlike today's meaning of a public institution as being accessible to all.
- 94 David Blackbourn, "The Discreet Charm of the Bourgeoisie," in David Blackbourn and Geoff Eley, *The Peculiarities of German History: Bourgeois Society and Politics in Nineteenth-Century Germany*, pp. 159-292. (Oxford: Oxford University Press, 1984), on pp. 199-200.

Chapter Three

- 1 Some of the material presented in this chapter appeared in my "The Rise of Serious Science at the Amsterdam Zoo *Artis*," in Lothar Dittrich, Dietrich von Engelhardt and Annelore Rieke-Müller (eds.), *Die Kulturgeschichte des Zoos*, (Berlin: VMB, 2001), 109-115.
- 2 March 1863, *Lezing*, File 101, PA 399 (Westerman Family Archive), GAA; similar remarks were made regularly.
- 3 *Natura Artis Magistra* Prospectus, 1838. Original copy in File 100, PA 399 (Westerman Family Archive), GAA. A facsimile reproduction appeared in Leonard de Vries, *Het Boek van Artis*, (Utrecht: A.W. Bruna en Zoon, 1981), p. 39. This phrase was quoted regularly, for example, in Article One of the by-laws, *Wet voor het Genootschap Natura Artis Magistra* 1839, File S 950.053, GAA Library, and in the first almanac, *Jaarboekje van het Genootschap Natura Artis Magistra* (Amsterdam: M. Westerman en Zoon, 1852), p. 108.
- 4 See, for example, the satirical poem published anonymously "Amstel's Zoologischen Tuin op eenen Zondagmorgen in 1838," (Amsterdam: Ipenbuur & van Seldam, 1847).
- 5 See Ilse N. Bulhof, "The Netherlands," in *The Comparative Reception of Darwin*, With a New Preface, edited by Thomas F. Glick, (Chicago: University of Chicago Press, 1988), pp. 269-306. Many of these men, including Van der Hoeven, Willem Vrolijk, and Schlegel, are discussed as the generation of aging naturalists opposed to Darwin's theory of evolution.
- 6 *Bijdragen tot de Dierkunde* is still published today as *Contributions to Zoology*.

- 7 In the following chapter we will also see that these same individuals contributed enormously to the development of *Artis'* lay-scientific activities. They wrote a variety of contributions for *Artis'* publications aimed at lay audiences.
- 8 In her extensive archival research on German zoos, Annelore Rielke-Müller has found many references to Westerman. In particular, he was often consulted by zoo directors for his practical knowledge of zoos and animal care. (letter to the author, 19 May 1997).
- 9 Other distinctions include knighthoods in the following Dutch and foreign orders: Nederlandsche Leeuw, Eiken Kroon, Gustav Wasa (Sweden), Leopold (Belgium), and Conception de Villa Ciscosa (Portugal). See File 82, PA 399 (Westerman Family Archive), GAA.
- 10 The original document is, unfortunately, lost in the archives. However, its contents are described in Thomas van Groen, *G.F. Westerman en zijn Bijdragen tot de Wetenschap*, (Stagescriptie: University of Amsterdam, 1980), p. 15; see also Florence F.J.M. Pieters, Anne Mique Compier, and Kristin Gerritsen, "De *Artis* Bibliotheek te Amsterdam," *De Boeken Wereld* 6 (1990): 88-107, on p. 88.
- 11 Erwin Stresemann detailed Schlegel's importance to the development of ornithology in *Ornithology from Aristotle to the Present*, Trans. by Hans J. Epstein and Cathleen Epstein, G. William Cottrell (ed.), Foreword and Epilogue by Ernst Mayr, (Cambridge: Harvard University Press, 1975), Chapter 11. For other biographical information, see Johann F. Snelleman, *Hermann Schlegel*, in *Mannen van Beteekenis in Onze Dagen: Levensschetsen en Portretten*, E.D. Pijzel (ed.), (Haarlem: H.D. Tjeenk Willink, 1884), pp. 166-214; and his posthumously published autobiography, supplemented by his son Gustav Schlegel, *Levensschets van Hermann Schlegel*, (Amsterdam: Johannes Müller, 1884), and reprinted in the *Jaarboek van de Koninklijke Akademie voor Wetenschappen*, 1884. Schlegel's work was published in *Naumannia*, *Journal für Ornithologie*, *Proceeding of the Zoological Society* (London), *Archiv für Naturgeschichte*, *Annals of Natural History*, *Comptes Rendues de l'Academie des Sciences, Paris*, for example.
- 12 Huishoudelijke Vergadering, 20 November 1839, File 99, PA 395, GAA.
- 13 Huishoudelijke Vergadering, 3 February 1840, File 99, PA 395, GAA.
- 14 For further biographical information, see B. Baljet, "Uit de Geschiedenis van het Museum Vrolik, de Snijkamer, en het Theatrum Anatomicum te Amsterdam," in *Gids voor het Museum Vrolik*, (Amsterdam: University of Amsterdam, 1990), pp. 7-24, especially pp. 13-16; J. van der Hoeven, "Levensbericht van Willem Vrolik," *Jaarboek van de Koninklijke Akademie voor Wetenschappen* 1863, pp. 83-99, and a briefer version in the *Nederlandsch Tijdschrift voor Geneeskunde* 8 (1864): 174-76; J.H. Kruisinga, "Willem Vrolik," in *Ons Amsterdam* 15 (December, 1963): 354-59; "Willem Vrolik," in *Biographisch Woordenboek der Nederlanden*, A.J. van der Aa (Haarlem: J.J. Brederode, 1852), pp. 468-74; and "Willem Vrolik," in *Nieuw Biographisch Woordenboek der Nederlanden*, P.C. Molhuysen and P.J. Blok (eds.), vol. 3, (Leiden: A.W. Sijthoff's, 1914), pp. 1367-8.
- 15 In Nicolaas Rupke, *Richard Owen: Victorian Naturalist*, (New Haven: Yale University Press, 1995), p. 389, fn. 63. See Robert Bentley Todd, (ed.), *The Cyclopaedia of Anatomy and Physiology*, vol. 4 (1), (London: Sherwood, Gilbert, and Pipier, 1847-1849), pp. 194-221.
- 16 (Amsterdam: GMP Londonck, 1849), translated, *The Human and Mammal Fetus, Illustrated and Described in its Normal and Pathological Development*.

- 17 See Elisabeth Crawford, "The Prize System of the Academy of Sciences, 1850-1914," in Robert Fox and George Weisz (eds.), *The Organization of Science and Technology in France, 1808-1914*, (Cambridge: Cambridge University Press, 1980), pp. 282-307. Most Academy prizes were monetary awards intended to encourage further research.
- 18 It is important to note here that Willem and his father, Gerardus Vrolik, amassed an important pathological anatomy collection. The Vrolik Museum is now owned by the University of Amsterdam and can be visited at the Academisch Medisch Centrum. Willem Vrolik's local prominence was demonstrated, for example, by his position as the Secretary of the Royal Dutch Academy of Sciences. On his father, see "Gerardus Vrolik," in *Biographisch Woordenboek der Nederlanden*, A.J. van der Aa (Haarlem: J.J. Brederode, 1852), pp. 463-68.
- 19 In this debate about simian brain anatomy, Huxley argued in favor of evolutionary relations between animals and humans, and Owen supported his own anti-evolutionary stance. See Rupke, *Richard Owen*, Chapter 6, and for the discussion of Vrolik's work, pp. 274-79.
- 20 P.H. Witkamp, *Amsterdam in Schetsen*, (Amsterdam: G.W. Tielkemeijer, 1869), p. 119.
- 21 Excerpt from the *Nieuwe Amsterdamsche Courant* and (Amsterdam) *Algemeen Handelsblad*, 12 March 1840, p. 2.
- 22 Little is known about these lecture series and few documents have survived. See Willem Vrolik, "Over het Doel van het Zoologisch Genootschap *Natura Artis Magistra*," in *Jaarboekje van het Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 122-35, especially note *a*, pp. 134-35.
- 23 Willem Vrolik, "Redevoering ter Opening van Dierkundige Voorlezingen, Gehouden voor de H.H. Leden van het Genootschap *Natura Artis Magistra*..." 1838, in *Artis Library Box d8:15*, p. 13.
- 24 *Ibid.* The mysterious kangaroo and other marsupials posed particular (classificatory) problems for nineteenth-century naturalists. See Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination*, (Cambridge: Harvard University Press, 1997), pp.5-15.
- 25 9 September 1840, File 99, PA 395, GAA.
- 26 23 December 1840, File 100, PA 395, GAA.
- 27 25 January 1841, File 100, PA 395, GAA.
- 28 7 February 1841, File 100, PA 395, GAA. Title officially approved by board. At the time when the board informed Vrolik of his title, it also conferred the same title on Mr. Tetar van Elven, 10 May 1841. Tetar van Elven's initials do not appear in the meeting notes. If they were M.G., he was Director of the School of Architecture at the Rijksakademie van Beeldende Kunst, and one of the founders of *Arti et Amicitiae*.
- 29 See the notes to the Huishoudelijke Vergaderingen between 23 December 1840 and 10 May 1841 for examples of Westerman's impatience with the board. For Vrolik's expression of displeasure with the title Advisor, see 24 May 1841, File 100, PA 395, GAA.
- 30 Willem Vrolik to the Board, 11 October 1841. File 188, PA 395, GAA. Ultimately, he did continue giving annual lecture series to the zoo members.
- 31 9 April 1841, File 782, PA 395, GAA.
- 32 31 March 1841, File 100, PA 395, GAA.
- 33 30 April 1841, File 782, PA 395, GAA.
- 34 27 July 1841, and 12 October 1841, File 782, PA 395, GAA.
- 35 30 April 1841, File 782, PA 395, GAA.

36 22 January 1846, File 783, PA 395, GAA.
37 31 August 1841, File 782, PA 395, GAA. The member's name was Hulshoff.
38 For example, 30 April 1841, File 782, PA 395, GAA for discussions of many different
animals that died at the zoo and exhibited (tubercular?) lung cysts.
39 Huishoudelijke Vergadering, 16 December 1839, File 99, PA 395, GAA.
40 See, for example, 15 December 1841. Here, the request of C.F. Gulcher, President of
Artis, to be admitted as a member of the association was granted. Gulcher appears to
have become a member to express his encouragement, although he rarely attended
meetings.
41 9 April 1841, File 782, PA 395, GAA.
42 The reasons given for this were that the zoo's room was not available on the evening
when the association met and therefore would cause inconvenience, and that the asso-
ciation was not happy with the stipulation that only association members who were
members of *Artis* would be able to participate if they met at the zoo. The exact reasons
for the animosity are not clear. See the report of 25 October 1847, File 785, PA 395,
GAA, where, for example, the committee recommended the merger with the zoo, and
asked members to put aside the "less pleasant memories" of the previous attempt to
fuse with the zoo; and 19 May 1847, File 785, PA 395, GAA where Westerman describes
the sorry situation of the association and the zoo still having no formal ties, and that an
agreement had earlier been destroyed (*tot schipbreuk geleden*) for a variety of reasons.
No details are given.
43 19 May 1847, File 783, PA 395, GAA.
44 Ibid. The committee members responsible for the official report were Luber, Hercken-
rath, and d'Ailly.
45 Notes of the official agreement reached 25 October 1847, follow the minutes for 6
December 1847, File 785, PA 395, GAA. The following discussion is based on this doc-
ument.
46 It is unclear why some of them *could* not become members; a few members are cited as
men who could not be put up for election into *Artis*. Given the society by-laws, I can-
not understand what would have prevented this unless they had previously been black-
balled.
47 The report did express regrets about the situation.
48 December 1847, File 785, PA 395, GAA.
49 *Artis* Board of Directors to invited members of its Zoological Committee, 10 Novem-
ber 1847, copied in 14 December 1847, File 787, PA 395, GAA.
50 Zoological Committee to *Artis* Board of Directors (Report of First Meeting held on 6
December 1847), 15 December 1847, File 787, PA 395, GAA. The committee's directors
were: President, W. Vrolik; Vice President, A.J. d'Ailly; Secretary, G.F. Westerman;
Treasurer J.A. Kool. Its editorial board consisted of Willem Vrolik, Hermann Schlegel,
and G.F. Westerman.
51 Vrolik and Westerman to *Artis* Board of Directors, 18 January 1848, File 787, PA 395,
GAA. The list of new committee members was: G.L. van Breda, J. van der Hoeven, P.J.
Kerkhoven, S. Muller, F.A.W. Miguel, C.G.C. Reinwardt, H.C. Roeters van Lennep,
G. Scheepmaker, J.L.C. Schroeder van der Kolk, C.J. Temminck, and G. Vrolik.
52 The author of this poem was J.J. Wijsmuller, one of the zoo's founders and a member
of the board. 21 September 1842, File 782, PA 395, GAA.
53 12 October 1841, File 782, PA 395, GAA. Van Geuns did not remain a member of the

- association for long. This is perhaps because there was no physiological interest. He later became known as an early Dutch advocate of the kind of physiology made famous in Germany during this period.
- 54 Schlegel, for example, remained a staunch anti-Darwinist his whole life – and he died in 1884. See also Bulhof, “The Netherlands,” for her characterization of the Dutch community of naturalists and biologists in the nineteenth century.
- 55 *Bijdragen tot de Dierkunde* 1 (1848).
- 56 Ibid.
- 57 Ibid.
- 58 Ibid. What is meant by “useful” here is not explained.
- 59 Ibid. Originating in the sixteenth century as, “*Je Maintiendrai*,” and now referred to in the phrase, “*Ik Zal Handhaven*,” (‘I Shall Maintain’), refers to upholding the honor of the nation.
- 60 Nationalism is discussed in more detail in the conclusion.
- 61 Lynn Nyhart, “Writing Zoologically: The *Zeitschrift für Wissenschaftliche Zoologie* and the Zoological Community in Late Nineteenth-Century Germany,” in *The Literary Structure of Scientific Argument*, Peter Dear (ed.), (Philadelphia: University of Pennsylvania Press, 1991), pp. 43-71, on p. 49.
- 62 David Allen, “The Struggle for Specialist Journals: Natural History in the British Periodicals Market in the First Half of the Nineteenth Century,” *Archives of Natural History* 23 (1996): 107-23, on p. 113.
- 63 For example, the medical doctor Kool submitted a manuscript in the meeting of 8 May 1848; Vrolik and Schlegel were assigned to review it. Similarly, A.J. d’Ailly, an advanced amateur naturalist, offered a manuscript for publication in the meeting on 10 July 1848; the assigned referees were J. van der Hoeven and C.G.C. Reinwardt. Neither submission appeared in the pages of the journal. Notes of the Meetings of the Zoological Committee, File 785, PA 395, GAA.
- 64 I discuss 1848-1869, the first nine volumes, because after 1869, there was a 15-year lapse before volume ten appeared in 1884. With this reappearance, the journal changed dramatically and represented a new generation of scientific journals. Thus, I do not consider it in my discussion of the zoo’s early strategy to develop zoology.
- 65 In fact, many of them died in the period under discussion: G. Vrolik (1775-1859), W. Vrolik (1801-1863), C.J. Temminck (1778-1858), J.L.C. Schroeder van der Kolk (1787-1861), Jan van der Hoeven (1801-1868), C.G.C. Reinwardt (1773-1854), A.J. d’Ailly (1793-1851).
- 66 Historical studies on nationalism link language to the development of national consciousness and of nation building. For example, see Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. ed., (London: Verso, 1991), Chapter 5; and Eric J. Hobsbawm, *Nations and Nationalism since 1780*, 2nd ed., (Cambridge: Cambridge University Press, 1992), pp. 96-100.
- 67 *De Gids* 2 (1838): 548. One of the editors of this French-language journal was F.A.W. Miquel, academic naturalist, who also served on the zoological committee. In the nineteenth century, *De Gids* was an important liberal literary and critical journal that addressed many issues of Dutch cultural and intellectual life.
- 68 See Jan Noordegraaf, “Vaderland en Moedertaal: Een Constante in het Taalkundig Denken,” in *Vaderland: Een Geschiedenis vanaf de Vijftiende Eeuw tot 1940*, edited by N.C.F. van Sas, (Amsterdam: Amsterdam University Press, 1999), pp. 343-364, on the

- rise of Dutch linguistics as an academic discipline and the ways in which the development of language were related to the developments of the nation. My brief discussion is taken from this. See also Joost Kloek and Wijnand Mijnhardt, with Eveline Koolhaas-Grosfeld 1800: *Blauwdrukken voor een Samenleving*, Series *Nederlandse Cultuur in Europese Context*, (The Hague: Sdu, 2001), Chapter 19, “Een Nationale Taal” on the historical role of the French language in the Netherlands and on the standardization of the Dutch language.
- 69 Ibid., p. 353.
- 70 Ibid., p. 357.
- 71 Manuscript copy, December 1847, (obviously after the meeting electing them as the editorial board members on 6 December) in File 793, PA 395, GAA. At a time when Germany was becoming the leading nation in science, it is interesting that French was acceptable and German was never mentioned. Both the influence of the French period, and aggressive political relations with Germany in this period explain this. The Dutch – particularly this old guard – were also slow to follow international trends and were still very much focused on French science.
- 72 It is also interesting to note that Latin, along with Dutch, were the official languages of the Dutch universities in the period under discussion. For much longer than other countries, “the six universities of the Netherlands were tied [required by the state] to the use of Latin, thus becoming unique Renaissance bulwarks in Europe...,” E.H. Kossmann, *The Low Countries, 1780-1940*, (Oxford: Oxford University Press, 1978), p. 129. It has been argued that Dutch science in the mid-nineteenth century suffered from the Latin requirement because the language had no vocabulary for modern science. See *Van Atheneum tot Universiteit*, (Amsterdam: Stadsdrukkerij, 1927), p. 76.
- 73 W. Vrolik, Schroeder van der Kolk, and Schlegel.
- 74 Jan Adrianus Herklots (1820-1872).
- 75 The attention Dutch-language articles received across Europe suggests that the Dutch language was more common outside of the low countries in the nineteenth century than today. However, I have been unable to find sources to confirm this.
- 76 The original appeared in the short-lived *Zeitung für Zoologie, Zootomie, und Paleozoologie* (published by von d’Alton und H. Burmeister) but also appeared in *Allgemein Litt. Zeitung*; the Dutch translation and comments appeared in the *Algemeenen Konst- en Letterbode* 36 (1849).
- 77 Ibid.
- 78 Ibid.
- 79 10 June 1850, File 787, PA 395, GAA.
- 80 For fascinating reading, see his posthumously published autobiography with its equally interesting foreword by Peter Harting, “Levensbericht van Pieter Bleeker door Hemzelven,” *Jaarboek van de Koninklijke Akademie voor Wetenschappen*, 1877: 5-55.
- 81 Bleeker, “Levensbericht,” pp. 44-45, on contacting his friends Westerman and Schlegel regarding a new journal; and his “Draft of Proposal to Bestuur,” sent to Westerman for approval by Bleeker, 1 May 1861, File 791, PA 395, GAA. The discussion that follows is based on this document, sections of which were published almost verbatim in the publisher’s proposal and call for subscriptions, *Prospectus, en Voorwaarden van Intekening op het “Nederlandsch Tijdschrift voor de Dierkunde,”* (Amsterdam: M. Westerman en Zoon, pencil date 1861/1862), Publ. Westerman Files, Bibliotheek van de Vereeniging ter Bevordering van de Belangen des Boekhandels, University of Amsterdam Library.

- 82 He does not specify the countries to which he is referring.
- 83 Bleeker, "*Prospectus Tijdschrift*." Significantly, while Bleeker originally proposed that the *Tijdschrift* announce the publication of both Dutch and international zoological literature, the published Prospectus mentions only the Dutch literature. Most likely, the Board imposed this limitation.
- 84 Volume numbers were not assigned annually, and *Tijdschrift* ultimately came out sporadically. Roughly, there are vol. 1, 1863; vol. 2, 1865; vol. 3, 1865 and 1866; and vol. 4, 1873. I don't know what happened between 1866 and 1873. Vol. 5, the last one, appeared in 1884 but I do not include it in this discussion because of both the time lapse and the change in character of this last issue compared to the first four volumes. The fifth volume contained only three relatively long articles in German, rather than the many short pieces characteristic of the earlier volumes.
- 85 It did reappear in the fifth, uncharacteristic volume in 1884, however.
- 86 Incomplete records suggest that most of the 500 printed copies remained in the hands of the zoo; the third volume, for example, sold 54 copies, and the fourth seems to have sold 37 copies. See the sketchy accounts in File 803, PA 395, GAA.
- 87 *Album der Natuur*, edited by P. Harting, which published contributions from most of the professional naturalists discussed in this chapter, is an example of a lay natural history magazine aimed at an educated audience. Every *Album* article appeared in Dutch.
- 88 He published more work in German early in his career than after the founding of *Bijdragen* and *Tijdschrift*.
- 89 Of the 145 original contributions, 123 appeared in French, ten in Dutch, and six each in German and Latin, or approximately 85 percent in French, seven percent in Dutch, and four percent each, German and Latin. However, because so many articles were written by Bleeker in French, generalizations about language choice cannot be drawn from this sample.
- 90 While in the Netherlands East Indies, he edited the *Natuurkundig Tijdschrift voor de Nederlandsch Indies*, and published 224 pieces in it! For his publications, see Bleeker, "Levensbericht."
- 91 *Ibid.*, p. 45.
- 92 *Ibid.*
- 93 Klaas van Berkel, "De Hollandsche Maatschappij, de Archives Néerlandaises en de Nederlandse Natuurwetenschappen rond 1870," in *Geleerden en Leken: De Wereld van de Hollandsche Maatschappij der Wetenschappen 1840-1880*, (Haarlem: Hollandsche Maatschappij der Wetenschappen and Rotterdam: Werkgroep 19e Eeuw, 2002), pp. 59-82, see p. 73, and p. 80, footnote 28.
- 94 Thirtysix volumes of *Notes from the Leyden Museum* appeared between 1879 and 1914. They were preceded by one volume of *Notes from the Royal Zoological Museum of the Netherlands at Leyden*, 1878; in 1914, the English title was changed into a Dutch one, *Zoologische Mededelingen*.
- 95 I do not know why the zoo stopped publishing *Tijdschrift* but, given the high costs, an economic reason is plausible.
- 96 For every volume for which I have data, *Artis* recovered little of the cost of publication. Losses of 1084.70 guilders, 638.43 guilders, and 864.96 guilders are recorded. File 803, PA 395, GAA.
- 97 Jean G. Shaw, "Patterns of Publication in Scientific Natural History from 1800-1939," in A.J. Meadows (ed.), *Development of Science Publishing in Europe*, (Amsterdam: Else-

- vier Science Publishers, 1980), pp. 149-176. On p. 150, Shaw describes societies with the primary function of maintaining journals, whose members could be more accurately described as subscribers than as members.
- 98 Ibid., pp. 167-68, 157-58.
- 99 Ibid., Table 3, p. 170.
- 100 Allen, "The Struggle for Specialist Journals," p. 109. This is the best discussion of the economics of journal publishing that I have found. While his work details the British case, the Dutch case is similar.
- 101 Ibid., p. 109.
- 102 W.H. Brock, "The Development of Commercial Science Journals in Victorian Britain," in A.J. Meadows (ed.), *Development of Science Publishing in Europe*, (Amsterdam: Elsevier Science Publishers, 1980), pp. 95-122, on p. 95.
- 103 Brock, "Commercial Science Journals," p. 96.
- 104 Shaw, "Patterns," p. 151.
- 105 Ibid.
- 106 Thomas H. Broman, "J.C. Reil and the 'Journalization' of Physiology," in Peter Dear (ed.), *The Literary Structure of Scientific Argument*, (Philadelphia: University of Pennsylvania Press, 1991), pp. 13-42, especially p. 22; and David Allen, "The Struggle for Specialist Journals," p. 109.
- 107 Lynn Nyhart, "Writing Zoologically: The *Zeitschrift für Wissenschaftliche Zoologie* and the Zoological Community in Late Nineteenth-Century Germany," p. 49, in Peter Dear (ed.), *The Literary Structure of Scientific Argument*, (Philadelphia: University of Pennsylvania Press, 1991), pp. 43-71, especially pp. 45-48.
- 108 Allen, "The Struggle for Specialist Journals," p. 114, for journal fatalities from commercial failure.
- 109 P. Smit, "International Influences on the Development of Natural History in the Netherlands and its East Indian Colonies Between 1750-1850," *Janus* 65 (1978): 45-65, on p. 54. On this museum in the nineteenth century, see R.P.W. Visser, "Het Rijksmuseum van Natuurlijke Historie in de 19de Eeuw," in B.C. Sliggers and M.H. Besselink (eds.), *Het Verdwenen Museum: Natuurhistorische Verzamelingen 1750-1850*, (Blaricum: V+K, 2002), pp. 176-186. For a brief historical sketch of the RMNH, see Alexis Raat, "Het Rijksmuseum van Natuurlijke Historie in Leiden in de 19e Eeuw," *De Negentiende Eeuw* 1 (1977): 31-35; more detailed histories, though less analytical, are Agatha Gijzen, *'s Rijks Museum van Natuurlijke Historie 1820-1915*, (Rotterdam: W.L. & J. Brusse's Uitgeversmaatschappij, 1938); and L.B. Holthuis, *1820-1958, Rijksmuseum van Natuurlijke Historie*, (Leiden: Nationaal Natuurhistorisch Museum, 1995).
- 110 Quoted in translation in P. Smit, "International Influences," p. 54. Smit's translation, presumably.
- 111 Paraphrased in P. Smit, "International Influences," p. 54.
- 112 The committee was disbanded in 1850.
- 113 Many collectors and travelers to the Dutch colonies maintained trading agreements with the RMNH.
- 114 Fitton to Owen, 11 May 1838, quoted in Rupke, *Richard Owen*, p. 77.
- 115 Streseman, "Ornithology," p. 213.
- 116 For a list of learned visitors who used the collections at the RMNH, see Gijzen, *Natuurlijke Historie*, pp. 232-39.
- 117 Huishoudelijke Vergadering, 3 March 1840, File 99, PA 395, GAA, for the value of ani-

- mals that died under his care: 4,519.50 guilders compared to 194 guilders under the new animal keeper's care; also listed are the goods stolen and money embezzled.
- 118 For more on traveling menageries in Europe, see Annelore Rieke-Müller and Lothar Dittrich, *Unterwegs mit Wilden Tieren: Wandermenagerien zwischen Belehrung und Kommerz 1750-1850*, (Marburg/Lahn: Basilisken-Presse, 1999).
- 119 Florence E.J.M. Pieters, "The First 150 Years of *Artis* and the *Artis* Library," editorial *Bijdragen tot de Dierkunde* 58 (1989): 1-6, on p. 1.
- 120 Van Groen, *G.F. Westerman*, p. 39.
- 121 Pieters, "De *Artis* Bibliotheek." *Artis* had invested over 15,000 guilders in the library by 1859 when the new library building opened (p. 90).
- 122 P. Chalmers Mitchell, *Centenary History*, p. 107.
- 123 For examples of gifts and/or the expressions of thanks between these two institutions not cited in the discussion below, see 19 January 1854; 19 December 1854; 6 May 1859; Westerman to Schlegel, 14 January 1861, in which he explains that he is sending two bodies of zoo animals and instructions for what Schlegel should do with them; 4 March 1862 for a draft of a letter in which the RMNH asks *Artis* to donate duplicates from their fish collections; 2 September 1861; 30 June 1862; 4 August 1862; 17 March 1878. *Artis* File, RMNH Library Archives.
- 124 *Artis* File, 1842, RMNH Library Archives, Leiden.
- 125 *Artis* File, RMNH Library Archives, Leiden. The following list gives the number of specimens donated in the given years. The documents also list the species. 1847, 6; 1848, 1; 1849, 1; 1850, 80; 1851, 98; 1852, 5; 1853, over 300 Javanese fish; 1854, 1 antelope.
- 126 Gijzen, *Natuurlijke Historie*, pp. 48-49. For the collection, Temminck wanted only one (dead) adult per species. See also p. 191 for a quote from Temminck that demonstrates his opinion that one specimen, or perhaps one male and one female, of each species was enough. The tension between Temminck and Schlegel on this subject represents two generations of naturalists – those like Temminck who saw collections and animals in variations of "ideal types," and a younger generation like Schlegel who strove to build collections with many specimens of each species.
- 127 Westerman to Temminck, 30 March 1855, *Artis* File, RMNH Library Archives, Leiden.
- 128 Schlegel to Westerman. 19 February 1866, *Artis* File. RMNH Library Archives, Leiden.
- 129 For an extended discussion about birds of paradise, see Jane Camerini, "Wallace in the Field," *Osiris*, 2nd series, vol. 11, *Science in the Field*, Henrika Kuklick and Robert E. Kohler (eds.), 1997, pp. 44-65, on pp. 56-62.
- 130 *Artis* Board of Directors to Schlegel, 12 March 1866. *Artis* File, RMNH Library Archives.
- 131 Temminck explicitly requested that donors and collectors *not* send living animals, but to no avail; he continued to receive them on a regular basis. A comparable arrangement that the RMNH made with *Artis* was also made with the menagerie owner and animal dealer Van Aken. Gijzen, *Natuurlijke Historie*, p. 49.
- 132 It is unclear why the RMNH apparently had qualms about killing animals they received alive.
- 133 To some extent, their work was seen by their contemporaries as old-fashioned systematics. They both were recognized for their contributions to knowledge long after their deaths. Bleeker's work, in particular, remained the authoritative work on fishes. See the guide to his 500+ papers that was published in the period 1911-33, years after his death, in which the compilers claim that "the numerous writings of Dr. P. Bleeker are neces-

- sary to everyone who studies fishes, not only of the indo-australian archipelago but also those of the great indo-pacific region..." (p. iii), in Max Weber and L.F. de Beaufort, *The Fishes of the Indo-Australian Archipelago I. Index of the Ichthyological Papers of P. Bleeker*, (Leiden: E.J. Brill, Ltd., 1911). I thank Florence Pieters for bringing this book to my attention.
- 134 Holthuis, *1820-1958 Rijksmuseum*, p. 39. Conservators consulted their own books, those of their colleagues, or the Leiden University library. They felt the lack of a good library a hindrance to their work. As late as 1878, the RMNH library consisted of two bookcases (p. 69).
- 135 In 1850, by the influential liberal statesman Minister Thorbecke who also engineered the new constitution in 1848.
- 136 Holthuis, *1820-1958 Rijksmuseum*, p. 49-50. I am not sure how the author judged the RMNH's scientific contributions as inadequate, however,
- 137 The first issue of *Notes from the Leyden Museum* appeared in 1879.
- 138 Jan van der Hoeven (1801-1868) was a follower of Cuvier. He wrote a zoology textbook, *Handboek der Dierkunde, of Grondbeginsels der Natuurlijke Geschiedenis van het Dierenrijk*, 1st vol., (Rotterdam: J. Allart, 1828) and 2nd vol., (Amsterdam: Sulpke, 1833) because he felt Blumenbach of 1802 was outdated, and Cuvier too expensive and broad for his classes. Furthermore, by writing in Dutch, he claimed he wanted "to be useful to this Fatherland" and to stimulate the interest in science among those who were not comfortable reading other languages (see his foreword). Ironically, the level is hardly aimed at a non-academic audience while the only Dutch people who were not comfortable reading German and French would have been rather uneducated and unlikely to read his work. The first volume of this handbook was translated into German, *Naturgeschichte der Wierbellosen Tieren* (Leipzig: Leopold Voss, 1850) by Hermann Schlegel's brother Franz, who himself became the Director of the Breslau Zoo. Rudolf Leuckart wrote an appendix to the German translation, "Nachträge und Berichtungen zu dem Ersten Bande von J. van der Hoeven's *Handbuch der Zoologie*." (Leipzig: Leopold Voss, 1856), that Van der Hoeven then translated into Dutch, as "Een Stelselmatig Overzicht der Voornaamste Nieuwe Ontdekkingen en Waarnemingen over de Ongewervelde Dieren," (Amsterdam, 1856). This translation and Leuckart's interest suggest that Van der Hoeven's work was considered significant. Schlegel's appointment as director after Temminck's death created controversy, particularly with Van der Hoeven at the University of Leiden who felt himself – as an academic – better qualified. For their two sides of the controversy, see Schlegel, "Levensschets," p. 57, and Van der Hoeven, "Bericht Omtrent het mij Verleende Ontslag als Opperdirecteur van 's Rijksmuseum van Natuurlijke Historie te Leiden," (Amsterdam, 1860). What emerges from the interesting story was an early struggle for authority between the professional academic and the professional non-academically trained museum naturalist. Schlegel's successor, Fredericus Anna Jentink, held academic degrees and his appointment in 1878 signals the demise of career potential for naturalists without university training.
- 139 17 of 29 papers by RMNH staff; 10.5 by Amsterdammers; 1.5 by an Utrechter. The two .5s refer to the paper written together by W. Vrolik and J.L.C. Schroeder van der Kolk. Of the 10.5 papers by Amsterdammers, six were by Westerman alone and 2.5 by Vrolik.
- 140 The eight are Schlegel, Bleeker, J.A. Herklots, S.C. Snellen van Vollenhoven, F. Pollen, H.A. Bernstein, J.G. Keulemans, and J.J.M. Kaup. (Kaup worked for two years in the RMNH in the 1820s but maintained close contact with the institution and returned

- for research trips after moving back to his home city of Darmstadt, where he directed the natural history museum. J.P. Wickevoort van Crommelin was a private collector and bird enthusiast.)
- 141 See Gijzen, *Natuurlijke Historie*, p. 163 and 307; and Holthuis, *1820-1958 Rijksmuseum*, p. 37. Furthermore, his mounted bird collection was donated to the RMNH upon his death.
- 142 Bleeker alone published 94 articles in *Tijdschrift*. I have no data on the reasons why *Artis* seems to have stopped its support of *Tijdschrift* after 1873. It remains peculiar that a fifth issue revived the title in 1884, six years after Bleeker's death.
- 143 Broman "J.C. Reil," p. 37. Broman discusses and draws on Karl Hufbauer, *The Formation of the German Chemical Community* (Berkeley: University of California Press, 1982).
- 144 Nyhart "Writing Zoologically," p. 49.
- 145 The following discussion is drawn from an anonymously written and printed piece, "Het Genootschap *Natura Artis Magistra* in Menige Voorname Punten van Beschouwing Beoordeeld," (H.J. van Kesteren: Amsterdam, 1853), in *Artis* Library Box d8:5.

Chapter Four

- 1 Some of the material in this chapter appeared in my "Natuurhistorische Verzamelingen en het Amsterdamse Culturele Leven, 1838-1881," in B.C. Sliggers and M.H. Besselink (eds.), *Het Verdwenen Museum: Natuurhistorische Verzamelingen 1750-1850*, (Blaricum: V+K, 2002), pp. 187-202.
- 2 The IJ is the estuary that linked the harbor of Amsterdam to the open sea.
- 3 *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852). This poem appeared together with the title vignette that was commissioned for the almanacs. The almanacs are discussed at length below.
- 4 For a detailed history of the colonies changing hands, see J. van Goor, *De Nederlandse Koloniën: Geschiedenis van de Nederlandse Expansie 1600-1975*, (The Hague: Sdu, 1994), esp. Chapter 5.
- 5 This term is used by Bernard H.M. Vlekke, *Evolution of the Dutch Nation*, (New York: Roy Publishers, 1945), p. 67.
- 6 For an excellent history of Dutch "pillarization" (*verzuiling*) or vertical pluralism, see Michael Wintle, *Pillars of Piety: Religion in the Netherlands in the Nineteenth Century 1813-1901*, (Hull: Hull University Press, 1987).
- 7 Jenny Reynaerts, "*Het Karakter onzer Hollandsche School*": *De Koninklijke Akademie van Beeldende Kunsten te Amsterdam, 1817-1870*, (Leiden: Primavera Press, 2001), p. 10. For a discussion of the literature on national art academies, the cultural politics of art academies, and national styles of art in nineteenth-century Europe, see Reynaerts, pp. 21-25. Useful for non-Dutch readers, see also her English summary, pp. 295-304.
- 8 *Ibid.*, Chapter 2, esp. pp. 61-124.
- 9 *Ibid.*, p. 121.
- 10 While I have focused on the nationalist analysis of this history rather than the ultimate success of history painting, it is interesting to note that it was a dismal failure and led to the demise of the Royal Academy. The decision to promote history painting was made for idealistic reasons. In the more practical world of the art market in the

- Netherlands, history painting was not appreciated as much as genre and landscape painting. Academy students were not motivated by their education in history painting and in fact, many left the academy to pursue other styles that sold better on the Dutch market than the “official” national style. Ultimately, the academy lost support from both the parliament and city. See Reynaerts, Chapter 5, pp. 205-238, on the decline of the academy.
- 11 Ellinoor Bergvelt, *Pantheon der Gouden Eeuw: Van Nationale Konst-Gallerij tot Rijksmuseum van Schilderijen 1798-1896*, (Zwolle: Zwolle Uitgevers, 1998), p. 170.
 - 12 Ellinoor Bergvelt, “Tussen Geschiedenis en Kunst: Nederlandse Nationale Kunstmusea in de Negentiende Eeuw,” in Ellinoor Bergvelt, Debora J. Meijers, and Mieke Rijnders (eds.), *Verzamelen: Van Rariteiten Kabinet tot Kunstmuseum*, (Heerlen: Open University/Gaade Uitgevers, 1993), pp. 333-354, on p. 351.
 - 13 Bergvelt, *Pantheon*, p. 162.
 - 14 See Bergvelt’s seminal study, *Pantheon*. The first national art gallery and precursor to the Rijksmuseum was the Nationale Konst-Gallerij founded in 1778 and opened in 1800 in the current royal residence, Huis ten Bosch, near The Hague. The original proposal for this institution was primarily a financial construction to decrease the cost of caring for the artwork (pp. 29-30). For the early history of this National Art Gallery, see her Chapters 2 and 3 that describe the move from The Hague to Amsterdam’s Royal Palace, and the role of the French King Louis Napoleon in the transformation of the National Art Gallery into the Royal Museum (*Koninklijk Museum*) and later (1815) renamed Rijksmuseum during the rule of King Willem I. In Chapter 4, she discusses the move from the Royal Palace to the Trippenhuus (where the museum was housed until late in the century when the new museum was built) and its early decades there.
 - 15 Peter Janzen, “Het Rijksmuseum aan de Stadhouderskade te Amsterdam: Een Wordingsgeschiedenis,” *De Negentiende Eeuw* 2 (1978): 149-178, p. 150.
 - 16 On Potgieter and this article published in *De Gids*, see Bergvelt, *Pantheon*, pp. 154-158 and Janzen, “Het Rijksmuseum,” p. 150; see E.H. Kossmann, *The Low Countries 1780-1940*, (Oxford: Oxford University Press, 1978), pp. 189-90 for a brief history of *De Gids* and its influence. For the recent, definitive, and encyclopedic work on *De Gids*, Potgieter, and nineteenth-century Dutch liberal culture, see Remieg Aerts, *De Letterheren: Liberale Cultuur in de Negentiende Eeuw: Het Tijdschrift De Gids*, (Amsterdam, Meulenhoff, 1997).
 - 17 Janzen, “Het Rijksmuseum,” p. 155. Van Lennep wrote this in the conservative newspaper *Amsterdamsche Courant* in 1859. This came after a committee appointed by the King – and including Willem Vrolik – recommended that a new and spacious building was necessary to house the Rijksmuseum collection in part, because there was not enough room in the Trippenhuus for both the Royal Dutch Academy of Sciences and the museum. On Van Lennep’s crusade for a new Rijksmuseum building, see Hart, “Kunst, een Regeringszaak?” especially pp. 77-78.
 - 18 Bergvelt, *Pantheon*, p. 144.
 - 19 For details of their publications, see the archives of M. Westerman en Zoon (later M. Westerman en Zonen) deposited in the Bibliotheek van de Vereeniging ter Bevordering van de Belangen des Boekhandel, situated in the main library of the University of Amsterdam. On Marten Westerman see R. Verdonk, “Marten Westerman 1775-1852,” *Amstelodam Jaargang* 9 and 13 (1952): 37-41.
 - 20 Newspaper clipping, undated, newspaper unnamed, in File 2649, PA 395, GAA.

- 21 See J.H. van der Hoek Oostende, "De Amsterdamse Familie Westerman," *Amstelodam* 58 (1966): 126-63.
- 22 For details of the various Plantage establishments, see Richter Roegholt, "Driehonderd Jaar Plantage," in Richter Roegholt, et al., *Wonen en Wetenschap in de Plantage: De Geschiedenis van een Amsterdamse Buurt in Driehonderd Jaar*, (Amsterdam: University of Amsterdam, 1982), pp. 9-88; and A. Alberts, A.J. Vos Jzn., and D.H. Wolff, *De Plantage als Sieraad aan de Amstel*, (Amsterdam: Kampert en Helm, 1972), especially Chapter 3.
- 23 Van der Hoek Oostende, "Familie Westerman," p. 149.
- 24 Roegholt, "Driehonderd Jaar Plantage," pp. 51-52.
- 25 Van der Hoek Oostende, "Familie Westerman," pp. 149-150.
- 26 *Ibid.*, p. 150. The Broekerhuis closed just two years after the founding of the Rijksmuseum nearby.
- 27 Roegholt, "Driehonderd Jaar Plantage," p. 52.
- 28 Willem's mother died when he was just a boy, and his father later married Anna Elizabeth van Swinden, the daughter of Professor Van Swinden. On Van Swinden's career, see *Gedenkboek van het Atheneum en het Universiteit van Amsterdam, 1632-1932*, (Amsterdam: Stadsdrukkerij, 1932), p. 687.
- 29 Bert Theunissen, "*Nut en Nog eens Nut*": *Wetenschapsbeelden van Nederlandse Natuuronderzoekers 1800-1900*, (Hilversum: Verloren, 2000), p. 25, for more on Van Swinden's role in Dutch science.
- 30 This journal was first published in 1852, and announced on the title page as "a work for the advancement of knowledge of nature among the educated (*beschaafde*) readers from every class." Many of the professional naturalists discussed in Chapter 3 contributed to this journal.
- 31 Willem Vrolik, *Het Leven en Maaksel der Dieren*, vol. 1 (Amsterdam: W.H. Binger en Zonen, 1853); vol. 2 (Amsterdam: W.H. Binger en Zonen, 1854); vol. 3, (Amsterdam: Gebroeders Binger, 1863).
- 32 Reynaerts, p. 267, and Personal Communication, Reynaerts, 24 June 2003. The link between medical anatomy and anatomy for artists has rarely been studied by historians. It is important to note that academy students were given access to the zoo to study the animals.
- 33 Reynaerts, p. 222.
- 34 Vrolik had also been a member of a committee appointed by King Willem III in 1858 to assess the conditions of, and prospects for, the collection. Janzen, "Het Rijksmuseum," pp. 154-55.
- 35 For a list, see Janzen, "Het Rijksmuseum," p. 156.
- 36 *Ibid.*, pp. 156-57, 158; and J. Braat, J. W. Niemeyer, P. C. Ritsema van Eck, J. B. E. Stockhuysen, P.J.J. van Thiel, and A.A.E. Vels Heijn, *Honderd Jaar Rijksmuseum, 1885-1985*, (Weesp: Van Holkema en Warendorf, 1985), pp. 14-15.
- 37 This decades-long strife is detailed in Janzen, "Het Rijksmuseum." Jan Hart discusses the crucial related topic of the Dutch government's *laissez-faire* policy in art and science, and the eventual founding of the new Rijksmuseum in his excellent study "Kunst, een Regeringszaak?," in *Kunst en Beleid in Nederland 3* (Amsterdam: Boekmanstichting/Van Gennep, 1988), pp. 67-145.
- 38 Bergvelt, *Pantheon*. See also J. Braat, et al., *Honderd Jaar*; F.J. DuParc, *Een Eeuw Strijd voor Nederlands Cultureel Erfgoed*, (The Hague: Stadsdrukkerij, 1975), especially pp. 52-55; Hart, "Kunst, een Regeringszaak?"

- 39 Articles written in *Artis* publications are discussed below. Other relevant titles are *De Zoogdieren: Eene Handleiding voor het Onderwijs en Tevens Bestemd voor de Bezoekers van Diergaarden en Musea* (The Mammals: A Guide for Education and also Intended for Zoo and Museum Visitors) (Amsterdam: Allart & van der Made, 1855); and *Handleiding tot de Beoefening der Dierkunde (Natuurkundige Leercursus ten Gebruike der Koninklijke Akademie voor Zee- and Landmacht)*, (Manual for the Practice of Zoology [Science Course for use by the Royal Military Academy]), (Breda, 1857). See the (incomplete) bibliography, in J.F. Snelleman, "Hermann Schlegel," in *Mannen van Betekenis in Onze Dagen: Levensschetsen en Portretten*, compiled by E.D. Pijzel, (Haarlem: H.D. Tjeenk Willink, 1884), pp. 167-214, on pp. 210, 211.
- 40 H. Schlegel and A.H. Verster de Wulverhorst, *Traité de Fauconnerie*, (Leiden and Düsseldorf: Arnz and Comp., 1844-1853). See a discussion of this book in J.W.M. van de Wall, *De Valkerij op Het Loo: The Royal Loo Hawking Club, 1839-1855*, (Haarlem: Joh. Enschede en Zonen, 1986), Chapter 9.
- 41 Amsterdam: M. Westerman en Zoon, 1842.
- 42 Hermann Schlegel, "Introduction." *De Diergaarde en het Museum van het Genootschap Natura Artis Magistra te Amsterdam*, (Amsterdam: M. Westerman en Zoon, 1842).
- 43 Hermann Schlegel with the cooperation of G.F. Westerman, (Amsterdam: Het Koninklijke Genootschap *Natura Artis Magistra*, 1860). Available now on CD-ROM, (Amsterdam: ETI Digitized Rare and Historical Books, 1995).
- 44 J.G. Nieuwendijk, "Artis en de Wetenschap," *Dieren* 5 (1988): 26-31, on pp. 30-31; Florence F.J.M. Pieters, Anne Mique Compier, and Kristin Gerritsen, "De Artis Bibliotheek te Amsterdam," *De Boeken Wereld* 6 (1990): 88-107, on p. 90.
- 45 The exact cost was 3371.84 guilders. See 1855, p. 93, File 803, PA 395, GAA.
- 46 I have been unable to identify the fort, but the specimen was collected in West Africa, and perhaps Schlegel depicted a particular fort there.
- 47 Some of the lithographs were drawn from living animals in the zoo.
- 48 11 September 1839, *Algemeen Handelsblad*, 15492A, Box 59, Hartkamp Collection, GAA.
- 49 Willem Vrolik, "Over het Doel van het Zoologisch Genootschap *Natura Artis Magistra*," in *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 122-135, on p. 134. Unfortunately, little documentation about his lecture series (also discussed in Chapter 3) has survived.
- 50 This was reported in detail (and verbatim) in the newspapers *Nieuwe Amsterdamsche Courant* and *Algemeen Handelsblad*, 12 March 1840. For copies, see Box d8.4, *Artis* Library. The following discussion is drawn from this document.
- 51 27 February 1841, *Algemeen Handelsblad*. 15492A, Box 59, Hartkamp Collection, GAA. The following discussion is drawn from this document.
- 52 See, for example, the reports on a three-part lecture series given by L.S.P. Meyboom 1865. 26/27 February and 16/17 April 1865, *Amsterdamsche Courant*, 15492A, Box 59, Hartkamp Collection, GAA; and mention of scientific lectures, dated May 1863, in File 101, PA 399, GAA. See also File 2199, PA 395, GAA, for some notes about Meyboom's lectures in 1865, 1866, and 1867, as well as other individual lectures by Peter Harting in 1866 and T.C. Winkler in 1867.
- 53 *Gids voor de Bezoekers der Zoologische Tuinen van het Genootschap Natura Artis Magistra te Amsterdam*, (Amsterdam: *Natura Artis Magistra*, 1843), in File S209, GAA Library.

- 54 It is impossible to date precisely some of the copies I have seen. Some have penciled dates on the covers that must – for a variety of reasons – be wrong, but the correct dates of publication are not obvious nor have I seen documentation regarding their publication. I am sure that the first one appeared in 1843. The ones that follow change little in style; all include the same introduction as the first, but report different populations of animals present in the zoo.
- 55 *Gids voor de Bezoekers...*, 1843, p. ii.
- 56 *Ibid.*, p. xvi.
- 57 See Wijsmuller's introduction, *Ibid.*, p. xiii.
- 58 *Ibid.*, p. 40, S950.076, in GAA Library. The file dates the guide as 1854, but Vrolik (described as "the late") did not die until 1863, and it describes the "new" Ledenlokaal, probably referring to the 1870 construction. I will call it the Capybara *Gids* because of the animal depicted in the cover.
- 59 Capybara *Gids voor de Bezoeker*, p. 39 on the *Ledenlokaal*.
- 60 *Ibid.*, p. 39. Pieneman is (and was) the most recognized nineteenth-century history painter.
- 61 *Ibid.*, p. 39.
- 62 Unfortunately, I have found no documents giving details of the exhibits at either museum, nor about the opening of the first *Artis* Ethnographic Museum. A few illustrations provide the only other information about the museum displays. It is referred to as Ethnographic or Ethnological museum, or Museum voor Land- and Volkenkunde.
- 63 Capybara *Gids voor de Bezoeker*, p. 38.
- 64 *Ibid.*, p. 31. This museum first opened in 1861.
- 65 P.H. Witkamp, *Amsterdam in Schetsen*, illustrated by W. Hekking, Jr. (Amsterdam: G.W. Tielkemeijer, 1869), Chapter XIV. "Het Ethnologisch Museum," pp. 149-150. The author of this book was active in *Artis*, served as its librarian, and wrote pieces about the zoo's history. This book's illustrator was the Ethnographic Museum's conservator. (In the same book, its illustration is captioned "Ethnographic Museum" rather than "Ethnological.") It is important to note that in his books of brief descriptions of notable Amsterdam buildings and institutions, Witkamp wrote a lengthy piece on *Artis* and deemed the Ethnological Museum worthy of a separate entry.
- 66 Peter van Zonneveld, "Nederlands Literaire Almanakken 1830-1840," *Forum der Letteren*, 20 (1979): 162-76, on p. 162.
- 67 Van Zonneveld, "Literaire Almanakken," p. 171. On the general character of these popular books, see also Marita Mathijssen, *Het Literaire Leven in de Negentiende Eeuw*, (Leiden: Martinus Nijhoff, 1987), pp. 66-67.
- 68 T.J. Kerkhoven, *Proposal Jaarboekjes*, Stipulation 3. 24 March 1851. File 795, PA 395, GAA.
- 69 T.J. Kerkhoven, *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 159-61.
- 70 J. Hilman, *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 142-48.
- 71 T.J. Kerkhoven, *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 172-74.
- 72 J. van Lennep, *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 164-75. Jacob van Lennep was not only a

- published novelist, playwright, and poet, but also a lawyer who served in the national government. He came from a traditionally intellectual, Amsterdam family involved in conservative politics and cultural developments. For more on Van Lennep, see, for example, Marita Mathijssen, *De Geest van de Dichter*, (Querido: Amsterdam, 1990), Chapter 1, and her bibliography of work by and about him, pp. 117-118; and L. Blok, "Jacob van Lennep: Kanttekeningen bij een Amsterdamse Conservatief," in *Cultuur en Geschiedenis: Achttien Opstellen*, edited by E. Jonker and M. van Rossum, (The Hague: Sdu, 1990), pp. 71-80.
- 73 Hermann Schlegel, *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1870), pp. 143-49, and pp. 161-68.
- 74 "Bibliotheek," and "Reglement van Orde voor de Bibliotheek van het Koninklijk Zoologisch Genootschap *Natura Artis Magistra* te Amsterdam," *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1860), p. 116, and pp. 117-19.
- 75 Dr. W. B[erlin]. in *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1857), pp. 129-35.
- 76 "Onze Feestviering," *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1864), pp. 199-224. On pp. 201-207, is a reprinted article that originally appeared in the *Amsterdamsche Courant*.
- 77 Kerkhoven, *Proposal*.
- 78 Three members of the Board of Directors comprised the Editorial Board; Kerkhoven, Zillesen, and Westerman.
- 79 See Kerkhoven, *Proposal* for the original suggestion to invite contributions and the name lists of those he thought should be approached. More names appear on the copy of the letter sent to potential contributors, 18 April 1851, signed G.F. Westerman, File 795, PA 395, GAA.
- 80 Other contributors include: T.C. Winkler, the translator of Darwin's *Origin of Species* into Dutch in 1869; Robert Thomas Maitland (1823-1904) a student of Van der Hoeven, served *Artis* as Librarian and Conservator, and was later Director of the Koninklijk Zoologisch Botanisch Genootschap in The Hague.
- 81 See *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852, 1858).
- 82 J.H. van der Hoek Oostende, "Amsterdam Gezien door William Marten Westerman," *Amstelodam* 66 (1974): 137-55, on p. 137.
- 83 Here it regularly received rave reviews. See, for example, 4 February 1864, 24 January 1865, 28 February 1869, 2 March 1870, 20 March 1872, 7 January 1874. These can also be found in Afdeling K, Box 3056, PA 395, GAA.
- 84 *Kamper Courant*, 28 December 1852. The reviewer wrote this as a warning that 60 percent of the book was taken up by lists.
- 85 *Amsterdamsche Courant*, 24 and 25 February 1867.
- 86 *Amsterdamsche Courant*, 2 February 1871, also in Afdeling K, Box 3056, PA 395, GAA.
- 87 *Amsterdamsche Courant*, 24 and 25 February 1867.
- 88 For sales numbers, and costs, see "Rekening en Verantwoording Omtrent de Uitgave van het *Jaarboekje van het Koninklijk Zoologisch Genootschap Natura Artis Magistra*," File 798, PA 395, GAA; "Recapitulatie Over 19 Jaargangen van het *Jaarboekje 1852-1870*," File 799, PA 395, GAA; and File 800, PA 395, GAA.
Sales were strongest between 1864-1870, of 955, 913, 936, 876, 976, 1023, and 970 copies

- respectively. The decline between 1871-1875, with 881, 753, 753, 726, and 740, suggests a reason for the decision to stop publishing the almanac.
- 89 T.J. Kerkhoven, *Proposal Jaarboekjes*, 24 March 1851, File 795, PA 395, GAA.
- 90 *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1875), "Mededeeling" at back of book, no page number. To my knowledge, no new publication replaced the almanac.
- 91 For example, Jan Bank and Maarten van Buuren, with Marianne Braun and Douwe Draaisma, *1900: Hoogtij van Burgerlijk Cultuur*, Series *Nederlandse Cultuur in Europese Context*, (The Hague: Sdu, 2000), pp. 524-525; J.T.M. Bank, "Mecenaat en Stadsontwikkeling in Amsterdam, 1850-1900," *Tijdschrift voor Geschiedenis* 104 (1991): 548-73; H. Brugmans, *Geschiedenis van Amsterdam*, 2nd ed., vol. 6, "Opgaand Getij 1848-1925," (Utrecht: Het Spectrum, 1973), pp. 219-42; Roegholt, "Driehonderd Jaar Plantage;" Alberts, Vos Jzn., and Wolff, *De Plantage als Sieraad aan de Amstel*.
- 92 D. Hillenius and H.E. Coomans, "Het Zoologisch Museum," in Richter Roegholt, et al., *Wonen en Wetenschap*, pp. 89-98; J.G. Nieuwendijk, "Artis," in Roegholt, et al., *Wonen en Wetenschap*, pp. 99-107, "125 Jaar Natura Artis Magistra," *Ons Amsterdam* 15 (1963): 98-128, *Zoo was Artis – Zo is Artis*, (Amsterdam: J.H. De Bussy, [1970]); Ko van Geemert en Karel Warmenhoven, *Van Artis tot Zeeman: De Amsterdamse Plantage en Weesperbuurt van A tot Z*, (Alkmaar, Rene de Milliano, 1999); Ko van Geemert, et al. *Wandelen door Artis*, (Baarn, Tirion, 2001); Pieter Smit, in his *Artis: Een Amsterdamse Tuin*, (Amsterdam: Rodopi, 1988) gives the most thorough, though poorly documented, discussion of concerts at *Artis* (pp. 12-24).
- 93 Witkamp, *Amsterdam*, 1869, p. 132. Unfortunately, little more than concert programs and some scores have survived as documentation for the first two decades of music at the zoo; some correspondence after 1875 can be found. For the programs, see Files 2212, PA 395, GAA; T602.051 and T602.052, GAA Library.
- 94 Twelfth Concert Program, 29 August 1849, T602.051, GAA Library; and "Buitengewoon Harmonie Concert Program," 7 September 1849, File 2212, PA395, GAA.
- 95 Gien Redeker and J.G. Nieuwendijk, "Artis en de Wereld," *Dieren* 5 (1988): 3-17, on 4.
- 96 Smit, *Artis*, p. 14, and Redeker and Nieuwendijk, "Artis en de Wereld," p. 4.
- 97 Smit, *Artis*, p. 15, and Redeker and Nieuwendijk, "Artis en de Wereld," p. 6,7.
- 98 "Buitengewoon Harmonie Concert."
- 99 Brugmans, *Geschiedenis van Amsterdam*, p. 233.
- 100 "Buitengewoon Harmonie Concert."
- 101 28 August 1850, and 16 July 1851, File 2212, PA 395, GAA; Smit, *Artis*, p. 13.
- 102 Secondary sources give different versions of the Stumpffs, involvement in the Park Orchestra. Roegholt says that the elder Stumpff demanded a higher quality from his musicians, and that upon his death in 1871, Willem took over (p. 39). Bank gives Willem credit for the high quality of music there, and says that Willem was the Director from 1868 ("Mecenaat," p. 556). The accuracy of these details does not detract from the point that Het Park and the Stumpffs are considered responsible for bringing professional orchestral music to Amsterdam.
- 103 Bank, "Mecenaat," p. 557. Brugmans describes the Park Orchestra as "an institute of major importance," *Geschiedenis van Amsterdam*, p. 236.
- 104 Bank, p. 557; Roegholt attributes the decline of *Felix Meritis* to the fact that the larger public had discovered The Park (p. 39). However, the broader public never had access to *Felix Meritis*, which continued both its exclusion of Jews, and had extremely high

- membership fees throughout this period. See also T. van Thijn, *Twintig Jaren Amsterdam: De Maatschappelijke Ontwikkeling van de Hoofdstad van de Jaren '50 der Vorige Eeuw tot 1876*, (Amsterdam: Scheltema en Holkema NV, 1965), pp. 166, 167-69, on the exclusivity of *Felix Meritis* and their attempts to regain control of Amsterdam's cultural life by opening their society to Jews. Furthermore, *Felix Meritis* depended on amateur performances in this period when music was professionalizing, and Stumpff had introduced professional musicians into Amsterdam's cultural life.
- 105 Bank, "Mecenaat," pp. 562-63.
- 106 E.G.J. Wennekes, "Het Paleis voor Volksvlijt, 1864-1929," Research Report in *Boekmancahier* 5 (1993): 380-83, esp. pp. 380-81, and his final product, the detailed history of the Paleis, Emile Wennekes, *Het Paleis voor Volksvlijt, 1864-1929: "Edele Uiting eener stoute gedachte!"* (The Hague: Sdu, 1999); J.C. Polak-van 't Kruys, *Het Paleis voor Volksvlijt*, (Amsterdam: Stadsuitgeverij, 1991), p. 13. This book focuses on the construction of the Paleis, and the technical and financial problems encountered. See also, Witkamp, *Amsterdam in Schetsen*, (Amsterdam: G.W. Tielkemeijer, 1862), pp. 56-61. Wennekes and Polak-van 't Kruys discuss the particularly interesting life of the founder, medical doctor Samuel Sarphati, who initiated a number of important developments in Amsterdam. See also Henne van der Kooy and Justus de Leeuwe, *Sarphati: Een Biographie* (Amsterdam: Atlas, 2001). On the Crystal Palace in London, see Jeffrey A. Auerbach, *The Great Exhibition of 1851: A Nation on Display* (New Haven: Yale University Press, 1999).
- 107 Van Thijn, *Twintig Jaren*, p. 117.
- 108 Westerman to Willem Stumpff, 24 March 1875, File 2199, PA 395, GAA.
- 109 Westerman to J. Eduard de Vries, 24 March 1875, File 2199, PA 395, GAA.
- 110 Westerman to Captain L.G.G. van Loo, 26 March 1875, File 2199, PA 395, GAA.
- 111 Westerman to Willem Stumpff, 16 December 1875, File 2199, PA 395, GAA.
- 112 Smit, *Artis*, pp. 13, 16-17. The new orchestra changed character again in 1890, to be called the Dutch Opera Orchestra (*Hollandsche Opera Orkest*), and it, too, contracted to play at *Artis*.
- 113 *Ibid.*, p. 16. He mentions correspondence in the early 1880s between the Amsterdam Orchestra Union and Westerman.
- 114 Bank, "Mecenaat," p. 569; Brugmans, *Geschiedenis van Amsterdam*, p. 240.
- 115 On the financial problems, and solutions, see Lydia Lensink and Jan Taat, *Van Dolf van Gendt naar Bernard Haitink: Negentig Jaar Concertgebouw en Concertgebouw Orkest*, (Amsterdam: Het Concertgebouw N.V. en de Nederlandse Orkeststichting, 1978), pp. 9-11, 34.
- 116 For example, Bank et al., 1900, p. 525; Bank, "Mecenaat," pp. 568, 569; Lensink and Taat, *Van Dolf van Gendt*, p. 9; Brugman, *Geschiedenis van Amsterdam*, p. 240.
- 117 For more on Zimmerman, an editor of *De Gids*, see Aerts, *Letterheren*.
- 118 The following discussion is drawn from Janzen, "Het Rijksmuseum," pp. 160-68, for more details.
- 119 Bank et al., 1900, p. 175.
- 120 For specific cases when the Dutch culture builders compared the sorry state of Dutch culture to other European cities, see Hart, "Kunst, een Regeringszaak?" pp. 82, 89, 101.
- 121 Daniel J. Sherman, *Worthy Monuments: Art Museums and the Politics of Culture in Nineteenth-Century France*, (Cambridge: Harvard University Press, 1989), p. 17. This is a very interesting study of the rise of French provincial art museums and their social meaning.

- 122 Sherman, *Worthy Monuments*, p. 191.
- 123 James H. Johnson, *Listening in Paris: A Cultural History*, (Berkeley, Los Angeles, London: University of California Press, 1995), Chapter 11.
- 124 Johnson, *Listening*, p. 264.
- 125 During its first 50 years, the limited number of visitors allowed in the British Museum had to apply in advance for admission. Ian Chivers, Harold Osborne, and Dennis Farr (eds.), *The Oxford Dictionary of Art*, (Oxford: Oxford University Press, 1988), p. 74.
- 126 It is important to note that even after German unification in 1871, the federal states maintained control of cultural affairs. See Glenn Penny, "Fashioning Local Identities in an Age of Nation Building: Museums, Cosmopolitan Visions, and Intra-German Competition", *German History* 17: 1999, pp. 489-505, on p. 490.
- 127 Lansink and Taat, *Van Dolf van Gendt*, p. 12.
- 128 *Ibid.*, pp. 12, 35.
- 129 Quoted in *ibid.*, p. 12.
- 130 Carla Yanni, *Nature's Museums: Victorian Science and the Architecture of Display* (Baltimore, MD : Johns Hopkins University Press, 1999), pp.91-92.
- 131 This character trait was also realized in the Scottish universities system known for their pragmatic education that was intended to contribute to industrial development.
- 132 Yanni, pp. 91-92, and Chapter 4.
- 133 H. Glenn Penny, III, *Objects of Culture: Ethnology and Ethnographic Museums in Imperial Germany*, (Chapel Hill: University of North Carolina Press, 2002), and Penny "Fashioning."
- 134 H. Glenn Penny, III *Cosmopolitan Visions and Municipal Displays: Museums, Markets, and the Ethnographic Project in Germany, 1868-1914* (Ph.D. Dissertation, University of Illinois, 1999), p. 14.
- 135 Bergvelt, *Pantheon*.
- 136 While the Concertgebouw received no public funding until 1911, it did receive a form of legal protection it due to its incorporation as a limited liability company (*naamloze vennootschap*).
- 137 Smit, *Artis*, pp. 3-9.
- 138 See Smit, *Artis*, pp. 4-9 for a description of the downward spiral of *Artis's* popularity among the elite. In short, as memberships decreased, *Artis* created new policies to open its gates to the public, and to increase revenue with entrance fees. This practice, in turn, annoyed members who terminated their memberships, which led to further losses in revenues. Furthermore, in the 1890s and first decade of the twentieth century, the new director Kerbert modernized the animal enclosures, which, combined with the aquarium, sent the zoo into great debt.
- 139 Smit, *Artis*, p. 18. This change is clear by the first decade of the twentieth century.
- 140 *Ibid.*, pp. 7-8.

Conclusion

- 1 Coenraad Kerbert, Westerman's successor at the zoo, stated that "Westerman was always the soul of the society" in "Bij het Portret van Gerardus Frederik Westerman," *Eigen Haard*, (1890): 348-350, on p. 349. For a description of Westerman's funeral, see 13 May 1890, (unidentified newspaper clipping), File 2649, PA 395, GAA.
- 2 In 1813-1815, after the French period when new national boundaries were drawn, the

- Northern and Southern low countries – now the Netherlands and Belgium – were united into a relatively large country and many citizens harbored hopes of the potential greatness of this new union. These hopes were dashed with the secession that halved the territory under control of the Dutch monarch.
- 3 N.C.F. Van Sas, “Nationaliteit in de Schaduw van de Gouden Eeuw: Nationale Cultuur en Vaderlands Verleden, 1780-1914,” in Frans Grijzenhout and Henk van Veen (eds.), *De Gouden Eeuw in Perspectief: Het Beeld van de Nederlandse Zeventiende Eeuwse Schilderkunst in Later Tijd*, Heerlen: Sun/Ou, 1992, 83-106 on p. 93.
- 4 See Chapter 4.
- 5 Quoted in J.T.M. Bank, *Het Roemrijk Vaderland: Cultureel Nationalisme in Nederland in de Negentiende Eeuw*, (The Hague: Sdu, 1990), on p. 21. This sentence appeared in C. Busken Huet’s book *Het Land van Rembrand* originally published in 1882-1884.
- 6 See J. van Goor, “Handel and Wetenschap,” in J. Bethlehem and A.C. Meijer (eds.), *VOC en Cultuur: Wetenschappelijke en Culturele Relaties tussen Europa en Azië ten Tijde van de Verenigde Oostindische Compagnie*, (Amsterdam: Schiphouwer en Brinkman, 1993), pp. 1-16, for a very interesting study on science and the Dutch East Indies Company which argues convincingly that these three factors must be seen in their simultaneous development.
- 7 Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600-1860*, (Cambridge: Cambridge University Press, 1995), p. 91.
- 8 *Ibid.*, p. 92-93.
- 9 Ellinoor Bergvelt and Renée Kistemaker (eds.), *De Wereld Binnen Handbereik: Nederlandse Kunst- en Rareitenverzamelingen, 1585-1735*, (Zwolle: Waanders Uitgevers/Amsterdams Historisch Museum, 1992).
- 10 “Request aan Mijn Hooggeachte Medeleden van *Natura Artis Magistra*, die zich thans in Oost-Indië bevinden” (Request to My Highly Esteemed Fellow-Members of *Natura Artis Magistra* who are Presently in the East Indies), *Jaarboekje van het Zoologisch Genootschap Natura Artis Magistra*, (Amsterdam: M. Westerman en Zoon, 1852), pp. 172-74.
- 11 R.T. Maitland, “Algemeene Regelen voor het Bereiden en Verzenden van Voorwerpen uit het Dierenrijk Bestemd voor het Museum van het Koninklijk Zoologisch Genootschap *Natura Artis Magistra* te Amsterdam,” undated, *Artis Library*. It must be later than 1851, but I cannot date it precisely.
- 12 *Ibid.*, p. 2.
- 13 *Ibid.*
- 14 By this time, in addition to honorary members, *Artis* had created the category called “members of merit” that bestowed slightly less status than honorary membership. *Jaarboekje*, 1869, pp. 112-13.
- 15 See T. van Thijn, *Twintig Jaren*, for details, particularly the two sections “Het Economische Leven.”
- 16 F. Galeschoot, *De Gemeente Uitgelegd*, p. 11. On general economic and related social change, see Bruin, *Herenwereld*. For a more specific discussion of Amsterdam’s economy, see also J.L. van Zanden, *De Industrialisatie in Amsterdam, 1825-1914*, (Bergen: Octavo, 1987).
- 17 Bruin, *Herenwereld*, pp. 56-58; and E.H. Kossmann, *The Low Countries, 1780-1940*, (Oxford: Oxford University Press, 1978), p. 163-64. When the Dutch devised the Cul-

- ture System, they changed the conditions under which the indigenous population was required to compensate the colonial government for the use of the land considered by the Dutch as their own. Rather than pay rent on the property, the indigenous farmers were required to farm one-fifth of their land (without compensation) with crops that the Dutch could export.
- 18 Bruin, *Herenwereld*, p. 57. It was in this coffee market that the fictitious Batavus Droogstoppel, described in the introduction operated, and it was the cruelty of the culture system that Multatuli exposed in *Max Havelaar*.
 - 19 For more details, see Joost Jonker, *Merchants, Bankers, Middlemen: The Amsterdam Money Market During the First Half of the 19th Century*, (Amsterdam: NEHA, 1996).
 - 20 Bruin, *Herenwereld*. The following discussion draws heavily from this book.
 - 21 Galesloot, *Gemeente Uitgelegd*, p. 23. As a result of the liberal constitutional revolution of 1848, national laws governing the city political system changed in 1851. City council members no longer elected new council members for life, but rather more democratic elections determined the composition of city councils in the Netherlands. Gradually, the impenetrable conservative bulwarks of city government were populated by liberal members representing the new bourgeoisie.
 - 22 See Jan Hein Furnée, "Beschaafd Vertier: Standen, Sekse en de Ruimtelijke Ontwikkeling van Den Haag, 1850-1890," *Tijdschrift voor Geschiedenis* 27 (2001): 1-32 for an analysis of the spatial dimension to middle class social interaction in the The Hague, including a discussion of that city's zoo.
 - 23 Bruin, *Herenwereld*; Peter Janzen, "Het Rijksmuseum aan de Stadhouderskade te Amsterdam: Een Wordingsgeschiedenis," *De Negentiende Eeuw* 2 (1978): 149-78. It is important to note that the *Artis* Board of Directors took responsibility for the society's financial administration, often served as curators of collections and the library, and supervised most practical aspects necessary to maintain the society. To my knowledge, only Westerman received a salary as Director. Thus, the participation of Amsterdam's leaders in commerce and finance must have benefited the zoo enormously. Furthermore, from the Appendix it is clear that the same men served similar functions in Amsterdam's charitable, commercial, and financial institutions.
 - 24 12 May 1890, Albert Geoffroy Saint-Hilaire, Director of the Jardin Zoologique d'Acclimatation in Paris, to the President of *Natura Artis Magistra*, File 2649, PA 305, GAA. This file includes many letters of condolence received by *Artis*.

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Illustrations

1. The Three Founders of *Artis*

De Drie Oprichters van Artis, J.J. Wijsmuller, G.F. Westerman, en J.W.H. Werleman, made for the 50th anniversary of *Artis*. 1888. E.A. Tilly. Note the entrance gate in the top right corner. (*Eigen Haard*, 1888)

2. A View of the Garden with Ferry

De Artis te Amsterdam/Jardin Zoologique à Amsterdam

The canal, then an important thoroughfare for boats approaching the Entrepotdok, cut through *Artis* property. To solve the problem of crossing the water for zoo visitors, H. Angelkot Willink, owner of a shipbuilding yard, had this ferry constructed which he he donated to the zoo. Lithograph, 1845. (Collection of the Gemeentelijke Archiefdienst Amsterdam)

3. Gerardus F. Westerman. *Dr. G.F. Westerman*, 1869

4. The Parrot Lane

H.W. Last. Lithograph by E. Spanier, in *Souvenir Natura Artis Magistra*, Amsterdam, 1856

5. First Library Interior

Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1860

6. New Library Exterior

Built in 1867. Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1868

7. Original Entrance Gate with Two Busts

This watercolor was presented to Westerman in a book honoring the 25th anniversary of *Artis*. It is unclear how this area actually appeared in 1863. W. Hekking, Jr. Watercolor, 1863. (Collection of the Gemeentelijke Archiefdienst Amsterdam)

8. First *Artis* Yearbook Title Page

This is a visual image of the poem on page 91. *Jaarboekje van het Koninklijke Zoologisch Genootschap Natura Artis Magistra*, 1852

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N. van der Waals, in *Natura Artis Magistra in Schetsen* by P.H. Witkamp. 1875

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N. van der Waals, in *Natura Artis Magistra in Schetsen* by P.H. Witkamp. 1875

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25. Members' Entrance to the *Artis* Aquarium
Leden Ingang (literally members' entrance) distinguishes the entrance for members from other doors of the Aquarium. (Photo Jaap Boon)

Color Plates

1. *Artis* Property Expansion Map by Date

De Grondvlakte van Natura Artis Magistra bij hare Uitbreidingen van 1838-1870. Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1870. Here one can see the prominence of the canal mentioned in the illustration on page 25. The canal forced *Artis* to maintain two entrance gates: one seen on the illustration on page 22, and the other on the illustration on page 89

2. Hermann Schlegel

J.H. Neumann, 1887. (Collection of Naturalis, Nationaal Natuurmuseum, Leiden)

3. Willem Vrolik

Attributed to J. H. Neuman, undated. (Collection of the Koninklijke Nederlandse Akademie van Wetenschappen)

4. Bird Study at *Artis*

Louis Stracké painted this watercolor study when he was a student at the Rijksakademie van Beeldende Kunsten (1873-1883). Like other academy students, he had access to *Artis* to study animals. Later, he would paint a significant depiction of science at the zoo. (Collection of the Rijksakademie van Beeldende Kunsten, Amsterdam)

5. Capybara by Schlegel

Het Waterzwijn by Hermann Schlegel, *Jaarboekje van het Koninklijke Zoologisch Genootschap Natura Artis Magistra*, 1870

6. Gerardus F. Westerman

Portrait of Dr. G.F. Westerman, ca. 1880. B. Wijnfeld. (Collection of *Natura Artis Magistra*)

7. Anatomy Lesson with Lion

Professor Max Weber Anatomy Lesson. Louis Stracké, 1886.

Painted in the genre of human anatomy lessons, this depicts Professor Max Weber surrounded by university students dissecting a lion in the *Artis* facilities. It represents the success of zoo-based science as an academic endeavor. On Weber, see Florence F. J. M., Pieters and Jaap de Visser, "The Scientific Career of the Zoologist Max Wilhelm Carl Weber (1852-1937)," *Bijdragen tot de Dierkunde* 62 (1993): 193-214. (Collection of the University of Amsterdam)

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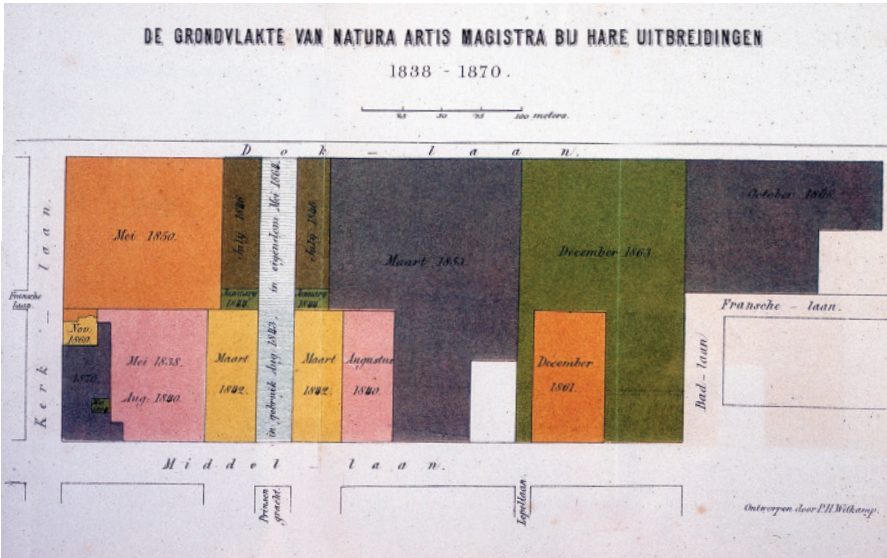
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1. Artis Property Expansion Map by Date

De Grondvlakte van Natura Artis Magistra bij hare Uitbreidingen van 1838-1870. Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1870. Here one can see the prominence of the canal mentioned in the illustration on page 25. The canal forced *Artis* to maintain two entrance gates: one seen on the illustration on page 22, and the other on the illustration on page 89.



2. Hermann Schlegel

J.H. Neumann, 1887. (Collection of Naturalis, Nationaal Natuurmuseum, Leiden)



3. Willem Vrolik
Attributed to J.H. Neuman, undated. (Collection of the Koninklijke Nederlandse Akademie van Wetenschappen)



4. Bird Study at *Artis*
Louis Stracké painted this watercolor study when he was a student at the Rijksakademie van Beeldende Kunsten (1873-1883). Like other academy students, he had access to *Artis* to study animals. Later, he would paint a significant depiction of science at the zoo, Plate 7. (Collection of the Rijksakademie van Beeldende Kunsten, Amsterdam)



5. Capybara by Schlegel

Het Waterzwijn by Hermann Schlegel, Jaarboekje van het Koninklijke Zoologisch Genootschap *Natura Artis Magistra*, 1870



6. Gerardus F. Westerman

Portrait of Dr. G.F. Westerman, ca. 1880. B. Wijnfeld. (Collection of *Natura Artis Magistra*)



7. Anatomy Lesson with Lion

Professor Max Weber Anatomy Lesson. Louis Stracké, 1886.

Painted in the genre of human anatomy lessons, this depicts Professor Max Weber surrounded by university students dissecting a lion in the *Artis* facilities. It represents the success of zoo-based science as an academic endeavor. On Weber, see Florence F.J.M. Pieters and Jaap de Visser, "The Scientific Career of the Zoologist Max Wilhelm Carl Weber (1852-1937)," *Bijdragen tot de Dierkunde* 62 (1993): 193-214. (Collection of the University of Amsterdam)