

Encountering the Netherlands Indies

Caspar G.C. Reinwardt's Field Trip to the East (1816-1822)¹

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Introduction

In the years after its foundation in 1814, the United Kingdom of the Netherlands witnessed the emergence of several new sites where natural history—the study of naming, describing and classifying plants, animals and minerals—was carried out. These new sites, such as the *Rijksmuseum van Natuurlijke Historie* (National Museum for Natural History), founded in 1820, the *Rijksherbarium* (National Herbarium) and the colonial site *Nederlands-Indië* (Netherlands Indies) had not existed in that form and in that combination before. The *Rijksmuseum* and the *Rijksherbarium*, established in Brussels in 1829, were the first national and fully state-funded natural historical institutions in the Dutch kingdom. In the course of the nineteenth century, both institutions rapidly developed into well-known centres for natural historical research in Europe.² Significant parts of their collections derived from the Malay Archipelago, a region the Dutch kingdom regained from the British for strategic reasons in 1814. In the first half of the nineteenth century, the Malay Archipelago, which had remained a *terra incognita* to European naturalists and colonial administrators, witnessed an unprecedented run on its natural wealth—initiated and propelled by both the emerging Dutch colonial state and the natural historical institutions in the Netherlands.

One of the major figures in this story was the German naturalist and administrator Caspar G. C. Reinwardt (1773-1854). Reinwardt, professor of chemistry and natural history at the *Athanaeum illustre* in Amsterdam, was sent to the Netherlands Indies as a member of a *commissie-generaal* which was appointed by the Dutch king Willem I (1772-1843) in 1814. The delegation was instructed to organise the handover of the colony from the British to the Dutch. During his six-year field trip Reinwardt acted, on the one hand, as advisor to the colonial government, and on the other hand as travelling naturalist. The wide-ranging responsibilities he had to take on besides his work as a naturalist were defined in the following statement: “His Majesty...demands that you accompany the general committee (*commissie-generaal*) as their advisor regarding all issues, be it the school system, or the cultivation of the land.”³ To facilitate his work, the king eventually granted Reinwardt the rather long-winded title *Directeur tot de zaken van landbouw, kunsten en weten-*

schappen op Java en de naburige eilanden (Director for agriculture, arts, and sciences in Java and the adjacent islands).

A closer analysis of travelling naturalists like Reinwardt has led to several historiographical approaches. For instance, Mary L. Pratt, a literary scholar, devotes her intricate and profound study *Imperial Eyes* to the question of how those naturalists narrated the colonial empire in the form of travel books at home.⁴ For travel books, as Pratt puts it, "...gave European reading publics a sense of ownership, entitlement and familiarity with respect to the distant parts of the world that were being explored, invaded, invested in, and colonized".⁵ Drawing upon insights by Michel Foucault and Gayatri C. Spivak, Pratt assumes that asymmetrical power relations in the "contact zone", as she puts it, heavily influenced how travelling naturalists depicted and coded the colonial spaces for European *literati*. But in contradiction to other post-colonial writers, who consider history as *narrative* and not as analytical tool, Pratt embeds the travel literature and the travelling naturalists she is analysing in their historical context.⁶ Pratt's overall thesis is that travelling naturalists invented an idealised and biased discourse on nature which concealed the aggressive and economically driven European expansionism occurring in various "contact zones" around the globe. Pratt sees, for instance, Alexander von Humboldt (1769-1859) as having reinvented South America as a wild and gigantic landscape "imbued with social fantasies—of harmony, industry, liberty, unalienated *joie de vivre*—all projected onto the non-human world...The only 'person' mentioned in these 'melancholy and sacred solitudes' is the hypothetical and invisible European traveller himself."⁷

Historians of science have put forward an alternative theoretical framework to approach the "contact zone". Instead of exclusively focussing on the literary outcome, Bruno Latour and David Livingstone have suggested starting from the notion that metropolitan actors tried to use travelling naturalists as calibrated tools to bridge the epistemological and geographical gap between foreign sites where field work was done and scientific institutions at home. As Livingstone puts it: "Those *absent* from some space of knowledge production needed to find ways of assuring themselves that those *present* had gathered information in an appropriate manner."⁸ Therefore certain calibrating strategies had to be applied to guarantee that scientists in European "centres of calculation", as Latour calls them, were able to interpret the knowledge accumulated in the field.⁹ The techniques used ranged from careful preparatory training to concrete and detailed instructions of how "the field" had to be explored, observed, mapped, described, measured and pictured.¹⁰ By surveying "the field" according to such instructions, field knowledge was translated, says Latour, into stable items such as notes, descriptions, specimens, travelogues, maps, statistics, paintings and drawings which could easily be transferred to various metropolitan sites, where the field knowledge was further analysed, recombined or rearranged.

Despite all these applied strategies, it must be admitted that travelling naturalists remained unpredictable tools. Focussing on Humboldt, Michael Dettelbach has shown that the encounter between nature and society in the "contact zone" of South America allowed naturalists to present themselves as heroic figures who had faced and mastered the perils of travelling through untamed and dangerous nature. To Humboldt, as Dettelbach argues, the attention "to the effects of the tropics on

one's own physiology (including aesthetic effects) was critical to establishing one's authority as a philosophical traveller".¹¹ By introducing himself to his European readers as someone who had undauntedly exposed himself to untamed nature, Humboldt substituted and erased, for the most part, the intricate and complex process of knowledge accumulation in the "contact zone". Only glimpses of it remained in his narrative.

Humboldt used this authority to promote an approach to nature which substantially diverged from metropolitan notions.¹² While Humboldt proclaimed that only the measurement, observation and the sensual perception of nature in "the field" would unravel the laws of nature, the sedentary naturalist Georges Cuvier (1769-1832), who was attached to the *Muséum national d'histoire naturelle* in Paris, advocated a rather different view. According to Cuvier, natural history had to be carried out at the *Muséum* where field specimens were prepared, examined and carefully compared, for only the careful comparison of specimens would reveal the secrets of nature. Dorinda Outram summarises Cuvier's position as claiming that "mastery over and comprehension of nature come not from *passage over* terrain, but from the steady and immobile *gaze* of the sedentary naturalist".¹³

The case of Reinwardt seems to parallel Humboldt's story rather well. The subsequent paragraphs will show that the extensive process of calibration by metropolitan training and detailed instructions did not turn Reinwardt into a pliant tool of metropolitan science. Rather, he insisted on the primacy of his own direct encounter with nature in the wild. At the same time, his retrospective reconstructions of these encounters tended to de-emphasise or even erase the various local interactions and mediations on which his "encounters in the field" depended. Although Reinwardt depended heavily upon the colonial infrastructure, as well as on the skills and knowledge of a variety of local individuals, the naturalist presented himself in several lectures as a hero who had encountered nature directly without any local mediation. At the same time, Reinwardt used his alleged authority as intrepid naturalist to challenge his sedentary colleagues in Leiden by announcing a *new natural history* which should draw exclusively upon field research. To develop this analysis, what follows is divided into three parts. The first part deals with Reinwardt's formative years in the Netherlands and his early views on the discipline of *natural history*. The second part is devoted to Reinwardt's experiences in the "contact zone" of the Malay Archipelago. The third part examines how he eventually narrated the results of his field trip in the Netherlands.

Science in the Service of the State: Reinwardt's Formative Years

Reinwardt was born in Lüttringhausen (former Prussia) and moved to the Netherlands as a thirteen-year-old boy, in order to receive training as a chemist at his brother's pharmacy in Amsterdam.¹⁴ Together with his brother he managed to gain access to Amsterdam's learned circles where he attended lectures on medicine, botany, mathematics, chemistry and the ancient languages, and took part in botanical excursions.¹⁵ Reinwardt must have used his years in Amsterdam quite efficiently; by 1800, he was appointed as professor for chemistry, herbology (*kruidkunde*), and natural history at the University of Harderwijk, the same university where Linnaeus (1707-78) had received his medical degree in 1735. His inaugural

address, entitled *Lecture about the irresistible drive by which practitioners of natural history and botany are driven in their studies*, displays him as a fervent admirer of his famous predecessor, who had made an extensive field trip through Lapland before he came to the Netherlands.¹⁶ Using Linnaeus and other well known travelling naturalists such as Conrad Gesner (1516-65), Carolus Clusius (1526-1609), Joseph P. de Tournefort (1656-1708), Georg E. Rumphius (1627-1702), Charles Plumier (1646-1704), Albrecht von Haller (1708-77), and Johann J. Scheuchzer (1672-1733) as examples, Reinwardt defined “the field” as the major site where natural history ought to be carried out; as he put it, nature would not reveal its divine secrets everywhere. Each country and each region with its specific local circumstances showed a different flora and fauna which has to be thoroughly explored and described by naturalists. Reinwardt summarised as follows: “Natural history aims at collecting, knowing and describing available animals, plants and minerals from around the globe...and the spreading of the usefulness, which might arise from that.”¹⁷

In a second lecture given in 1803, when Reinwardt resigned as chancellor in Harderwijk, he addressed the usefulness of science more directly. In this lecture entitled *The advantages of the new chemistry over the old chemistry*, Reinwardt claimed that the “new chemistry” instigated by Antoine L. Lavoisier (1743-94) needed to be taught and practised in the Netherlands, for it allowed the forces of nature to be harnessed for various useful ends. While chemists throughout Europe had debated the meaning, validity and utility of the “new chemistry” during the previous decade, Reinwardt now chose to stress its “general and unlimited usefulness”.¹⁸ Looking perhaps to what French industrial chemists such as Jean-Antoine Chaptal (1756-1832) were achieving, he argued that its application could, for instance, contribute to the improvement of the mining industry, the development of drugs, and the more efficient production of gun powder.¹⁹

Reinwardt’s further career was marked by the application of his scientific knowledge to the needs of the state. Reinwardt became a member of several learned societies such as *Teyler’s tweede genootschap* founded in Haarlem in 1778, and the later established *Koninklijk Instituut van Wetenschappen, Letterkunde en Schoone Kunsten* (Royal Institute of Sciences, Literature, and Fine Arts).²⁰ Those learned societies were supposed to disseminate and stimulate the production of useful knowledge in order to mitigate the economic decline faced by the Netherlands during the second half of the eighteenth century.²¹ They regularly organised essay competitions (*prijsturagen*) on topics such as the improvement of dams, ships, navigation or cartography. Furthermore Reinwardt was obliged to join several committees to advance medical care and agriculture at a regional level.²² Under Lodewijk Napoleon (1778-1846), who was appointed king of the Netherlands in 1806, Reinwardt became involved in the production of indigo and the breeding of certain sheep races. After the Franco-Dutch king met Reinwardt personally in 1808, Lodewijk Napoleon eventually appointed him as director of the royal botanical garden in Soestdijk which was later transferred to Haarlem and Amsterdam. Before Lodewijk Napoleon abdicated from the throne in 1810, Reinwardt took up a professorship for chemistry and natural history at the *Athanaeum illustre* in Amsterdam while keeping his position as director of the royal cabinet or *’s Lands Kabinet voor Natuurlijke Historie*.

Encountering the *Netherlands-Indies*: Reinwardt in “the field”

Four years later, in December 1814, Reinwardt, who in the meantime had settled in Amsterdam, received the following letter from Anton R. Falck (1777-1843), secretary of the Dutch king Willem I:

It is time that we compensate for the harm we have inflicted on ourselves and the learned world. We should no longer miss the merits of knowing our colonies as thoroughly as our neighbours do. Java alone will give us the opportunity for important observations and discoveries regarding all realms of nature...We need a man who unites shrewdness and broad expertise, who has been working in the most prominent fields of science for years, and whose diligence will not be deterred and stymied by difficulties.²³

In the succeeding paragraphs, the secretary revealed that the king considered Reinwardt the suitable person for this task. Reinwardt, who in 1814 had already turned forty-two, initially doubted whether he really wanted to take on this challenge. After having expressed some doubts, Reinwardt accepted the king's offer in a reply letter dated 26 December 1814, mentioning the generous financial prospect and the predictable scientific honours:

The available knowledge of the inhabitants,...the land, and the great variety in nature of those countries [the Netherlands Indies] is too incomplete, further research would lead to new findings which would contribute to the enhancement of scientific knowledge in general as well as to the opening up of new exploitable resources, trade and prosperity...The one who first takes up this career will probably already reap the rewards...of important discoveries.²⁴

His subsequent designation as *Director for agriculture, arts, and sciences*, however, led to new responsibilities. Beside his task as naturalist to collect and ship specimens back to the Netherlands, the king requested him to take care of and to expand the school and public health systems in Java.²⁵ Furthermore Reinwardt was asked to focus his attention on “the customs, language and mentality of the inhabitants, their religion and their form of government”.²⁶ All his observations in the field had to be summarised and to be handed in as a report giving the central authorities a concise overview of the “actual state” of the colony.²⁷

A third specification of his task came in March 1815, shortly before Reinwardt departed. Johannes Goldberg (1763-1828), at that time interim secretary general of the king, handed over to Reinwardt a voluminous list of questions entitled: *Central topics which need to be considered, with regard to the statistic of the Dutch colonies in the East Indies*. The catalogue was comprised of several categories ranging from Java's geography, political situation, and inhabitants, to its different products, the possibility of processing raw materials, and questions about the state of trade relations in the region. Questions included:

What is the size of the cultivable land? Are there already factories and manufacturers, if that is the case, which kinds of factories can be found? What is the status of the inland trade? Can diamonds and other precious stone be found there? How much rice is grown every year on average? What are

the most important imports and exports? What is the present state of the sheep? Is the [sheep] race good and numerous?²⁸

The document's approximately 150 questions tellingly reveal how astonishingly little was known about the political, economical, agricultural and social situation of the colony in the Dutch kingdom.

Reinwardt received 3,500 Dutch guilders to buy various instruments.²⁹ He spent the money on glassware, barometers, thermo- and eudiometers, an air pump, a chronometer, a bathometer, drawing-paper, a hunting rifle, and a small library. He also carried exact weights, a pair of scales, and metal pieces of exactly one Dutch yard in length. The correctness of the latter was certified by a special committee of the *Koninklijk Instituut* in Amsterdam.³⁰ Moreover, the draughtsman Adrianus J. Bik (1790-1872) and a horticulturist were attached to his small division.³¹ Later, when Reinwardt was already in the Netherlands-Indies, his staff was further enlarged by Bik's brother Jannes T. (1796-1875) and the Belgium landscape painter Antoine A. Payen (1792-1853).³²

The preceding paragraphs have shown that Reinwardt was thoroughly instructed by metropolitan actors regarding how to perceive and act in the Netherlands Indies. This occurred, on the one hand, through his socialisation and training as a naturalist in the Netherlands and, on the other hand, through a set of lengthy and detailed instructions made up by the Dutch king and his ministers. Since Reinwardt headed for the colony with a hybrid identity and set of duties that brought together the tasks and talents of a naturalist and those of a colonial advisor, he perceived his new surroundings through a compound lens that somehow brought these two fields together. Though the perspectives, demands and interests encompassed by these two fields interactively overlapped in practice, they will be analysed separately in the following sections to help sketch the complex terrain through which Reinwardt moved as his activities shifted from bearing a heavier emphasis on administrative responsibilities to a more pronounced focus on local nature and society.

Reinwardt as Advisor of the Emerging Colonial State, April 1816 - May 1818

In the two years after his arrival in Java in April 1816, Reinwardt was almost completely absorbed by his new function as *Director*. Since he was attached to a delegation which was supposed to take over the colony from the British and to establish a Dutch (colonial) administration in the Archipelago, his advice was very much in demand. Until May 1818, he spent most of his time on administrative work. Besides setting up a basic school- and health system in Java, the colonial government sought his advice regarding the monetary system, smallpox and cowpox vaccination, the introduction of standardised measures and weights, the cultivation and production of tobacco, ginger, rice, indigo, cotton, nutmeg, pepper, coconut oil and saltpetre.³³ Additionally Reinwardt had to hand in reports on potential gold, coal and copper deposits in the Archipelago.³⁴ Four months after his arrival, Reinwardt realised just how broad ranging his tasks were. He reported to a friend in Amsterdam: "The responsibilities I have to meet here are large and wide-ranging; I can't even say that I have made a start with them yet."³⁵

In Reinwardt's eyes the situation in Java was in many respects a disaster. In a summary on the school system which Reinwardt must have compiled in 1819 or 1820, he put it as follows:

Well equipped schools were missing, even in densely populated cities, and the few existent [schools] here and there were run by teachers who, without having passed any exams, have chosen their profession arbitrarily and, given the lack of any supervision, guidance, reprimand...didn't even possess basic skills such as the Dutch language.³⁶

In order to establish a functioning system, Reinwardt obliged the *residents* (heads of the regional colonial administration) to look for qualified candidates in their districts. The proposed persons were then examined by Reinwardt himself or by one of the *schoolopzieners* (school supervisors) Reinwardt had installed. Furthermore Reinwardt initiated the reopening of the military school in Semarang which was originally founded by the merchants of the *Vereenigde Oost-Indische Compagnie* (VOC). Reinwardt's subsequent engagement as co-curator (*mede-curator*) let him foster the hope that, as he worded it, "my mission to the East has contributed to the dissemination of learning and civilization in this region".³⁷

The consequences of this heavy workload were foreseeable. Reinwardt fell ill for a period of two months. In spring 1818, he jotted down in his diary soberly that "a highly unfortunate event forced me to stop with my work and brought me near to death...".³⁸ In a letter sent to his friend De Vries in Amsterdam, Reinwardt described in even stronger and more radical words how he had perceived the Netherlands Indies thus far: "That I would be able to fell the eastern Hydra straight away, I must confess, I am not Hercules enough; however, I doubt whether such a Hercules could ever be found, even if he were a stronger fighter than I am."³⁹ Reinwardt's tasks within the colonial administration obviously far exceeded his capacities. It must have been an astonishing experience, since, until then, he had always been successful in applying natural history to the needs of the state. After Reinwardt's convalescence, the colonial government immediately released him from his administrative duties.⁴⁰ In the following four years, Reinwardt's focus shifted from his active involvement in the imperial project towards natural historical research in the field. The following analysis will show that the skills and knowledge of local mediators at numerous sites played a crucial role in this process.

Reinwardt as Surveying Naturalist, June 1818 - June 1822

After his recovery in June 1818, Reinwardt started to prepare a larger sea expedition to the Lesser Sunda Islands and the Moluccas, a region where the Dutch colonial authority was barely established.⁴¹ A chronological and detailed account of this expedition, which took place from January 1821 until March 1822, was made public after Reinwardt's death in 1858 by Willem H. De Vriese (1806-62), who succeeded Reinwardt as professor for botany at Leiden University. The voluminous report of the expedition, which is evidently based on Reinwardt's field notes, clearly sheds light on the various improvised and spontaneous processes of knowledge accumulation in the field. Reinwardt almost completely depended on the available colonial infrastructure and on various local informants throughout his trip.

Reinwardt travelled on the ship *Experiment*, which was chartered by the colonial government. His research crew consisted of a gardener, two draughtsmen, and a personal servant, called Philips, and someone from Borneo, who presumably had to serve as translator during the trip. Furthermore the naturalist was accompanied by three locals who were responsible for the collection of plants and insects and the preparation of specimens in the field. The ship's crew, as Reinwardt reports, consisted of twenty five persons among whom were Bengalis, people from South Africa, Javanese, and a Chinese carpenter.⁴²

Navigation in this far-flung island world was still an adventurous undertaking. Several times, the English captain of the ship did not know where he was sailing, since the region was apparently only superficially mapped. *The East India Pilot* (1778), which was the manual the captain was using, only allowed a vague positioning. On their way from Bima (Sumbawa) to Kupang (Timor), the ship even ran aground on an unexpected coral reef. Only with the assistance of indigenous people could the ship be set afloat.⁴³ Local people also regularly supplied them with sufficient fresh food which they received in exchange for flintlocks and gunpowder.⁴⁴

Travelling itself was—at least for Reinwardt—a rather comfortable endeavour, since he was either carried in a litter (*draagstoel*) or could make use of horses or carriages provided by the local colonial officials; only in special cases did he have to walk by himself. His litter was normally carried by four indigenous persons. A fifth person took care that it remained balanced. Reinwardt noted in his account that “this mode of travelling is above every other [mode] comfortable; the carriers walk very quickly and I was quite astonished that they were carrying us over steep hills, sometimes even running, particularly when the carriers of one chair spurred on those who carried another by challenging and competing with them.”⁴⁵ During his visit to Menado, the administrative capital of Celebes, Reinwardt recorded that the service of being carried for free was part of an earlier VOC agreement with the various indigenous rulers. Each of those rulers had to provide carriers when Dutch officials were crossing their district.⁴⁶

Encounters on the different islands always followed the same pattern. After having called at the respective harbour, Reinwardt was received and welcomed by the local Dutch civil servant or missionaries, who subsequently gave him an account of the local situation. This briefing comprised information on the political relations between the Dutch and the indigenous rulers, about earthquakes, volcanic eruptions, floods, agriculture, the local religion, special customs, the population, etc. After that, Reinwardt often visited the indigenous rulers in order to complete his information. Those encounters were highly ritualised. In many cases Reinwardt was accompanied by Dutch officials or a translator who mediated between him and the indigenous rulers. Reinwardt reported his meeting with the local princes in Bima as follows. During the gathering at the Raja's house,

...wine, coffee, tea, pastry, tobacco and pipes were offered, but neither the Raja nor the *Rijksbestierder* [AW: indigenous official who usually mediated between the Dutch and the Raja] smoked. Behind the Raja and me was a translator who dominated the talking since he did not always wait until the Raja had instructed him. The Raja did not talk much and said even nothing

when he was not directly asked. The *Rijksbestierder* was an old man who talked more and who eventually answered all my questions.⁴⁷

On Timor, the local Dutch resident even organised an expedition to the hinterland, where Reinwardt hoped to find gold and copper. Since the diplomatic and political relations with Timor's hinterland rulers appeared to be quite weak and uncertain, the resident had to bring together a small army (roughly 300 armed persons) which eventually accompanied the naturalist and his companions. A local Chinese served as guide to the column. During the expedition Reinwardt met several local rulers, observed and collected plants and animals and analysed rock samples. However, the expedition did not reach the river where gold and copper was assumed to be, since some of the accompanying princes refused to continue the trip inland due to a supposed lack of food.⁴⁸ Reinwardt's final judgement regarding the situation in Timor was sober, clear and obviously directed toward the interests of his imperial sponsor: "It is a great pity that this place is so much in decline. The frequent mutual wars...between small princes and rulers must be blamed for this. Those [wars] must stop. A single and uniform administration must be introduced. This would allow the safe opening and further exploration...of the metal mines."⁴⁹

Reinwardt, who used those field trips to carry out natural historical and particularly geological research, heavily profited from the colonial infrastructure and from local testimonies. Reinwardt specifically focussed his attention on the numerous volcanoes in the region. By measuring and observing the volcanoes and by comparing local information about the various eruptions, he gradually developed the idea that an unknown underground force must be assumed in the Moluccas. For instance, in Bima, which was their first stop, Reinwardt noted:

The island Sumbawa is exposed to strong activities of various volcanoes, which have often caused awful devastation so that the inhabitants of this land, and also of Bima, continually live in great fear. And indeed, Bima is situated between three prominent volcanoes: the first one is the so-called southern volcano, the second one is the Gunung Api...and the third are the volcanic mountains of the land Tambora, whose eruption in April 1815 had wiped out the land and the inhabitants of Tambora and the small northern island Papekat. Both those lands, Tambora and Papekat, are now a heap of ash; no sign of a human house can be found there yet.⁵⁰

Similarly, during their second stop in Timor, Reinwardt recorded: "It is already known from elsewhere that no volcanoes exist on Timor, but that it has regularly witnessed severe earthquakes. During the one which occurred in 1814, fire and mud which came from the ground of the sea...even caused the emergence of small islands."⁵¹

Reinwardt was astonished by these local observations, which he so carefully collected and compared, as his reflections on a short detour to the small island Kisar reveal. After having analysed several rock samples, he noted that "the origin [of that rock formation] is quite clear. Seashells and coral plants have partly maintained their shape and one is indeed astounded how the mountain (*gebergte*) has been raised up from the sea to this considerable height."⁵² The subsequent visit of the *Gunung Api*, which is still one of the most active volcanoes in the region, again con-

firmed his judgement. Reinwardt, who had been carried in his sedan chair (*draagstoel*) to the top of the volcano, summarised in his report that “the Gunung Api is curious, not only at the top, but particularly at several bottom sites along the mountain. One will never find, I believe, more distinct evidences of a terrain which has been lifted from the sea, than if one sails around the Gunung Api and carefully inspects different sites at the bottom.”⁵³

Reinwardt’s closer examination of the western part of the volcano reveals again how his field research depended on local informants. While Reinwardt assumed that some of the lava heaps there were part of belched magma, the Bandanese who had witnessed the eruption the year before correspondingly pointed out that the heaps had been directly elevated out of the ground.⁵⁴

Narrating the Encounter in the Netherlands: Reinwardt’s Years as Professor in Leiden

While still in the Netherlands Indies, Reinwardt received the message that he was offered a professorship in natural history, chemistry, and pharmaceuticals (*kruidkunde*) at Leiden University, since Sebald J. Brugmans (1763-1819) had abruptly passed away. Although Reinwardt was not fully informed about the details, he eventually accepted the offer after some hesitation. In a letter to his friend Jeronimo de Vries in Amsterdam he uttered rather unsatisfactorily: “I will take on the appointment, although I can’t really see what I gain from it; rather that I will lose much when I shift from Amsterdam to Leiden.”⁵⁵

When Reinwardt arrived in the Netherlands in October 1823, the place of natural history in the scientific setting had fundamentally changed. Under Coenraad J. Temminck’s directorate the recently founded *Rijksmuseum* gradually developed into a well-known institution. The collection which was comprised of the former’s *Lands Kabinet*, the *Academisch Cabinet* of Leiden University, and Temminck’s private bird collection continuously swelled. New specimens arrived from all over the world. In order to be able to compete with natural historical institutions in France and England, Temminck had managed to set up a global network of collectors who provided the museum in Leiden with a huge amount of new specimens; the *Natuurkundige commissie voor Nederlandsch-Indië* (Committee for Natural History in the Netherlands Indies), which continued Reinwardt’s field work in the far-flung Netherlands Indies, was Temminck’s most important project.⁵⁶

In a lecture given in Leiden in 1823, Reinwardt retrospectively narrated his field experiences to the Leiden academia. In this address entitled “*Lecture on what the research of the Netherlands Indies has contributed to the development of natural history*”, Reinwardt replaced the multi-layered process of knowledge accumulation in the field with a narrative in which he emphasised his supposedly direct and unmediated encounter with the colony’s native nature and societies. At the same time, his new identity as heroic man of science gave him the authority to scrutinise and reject metropolitan notions of a descriptive natural history, as they were advocated by Temminck.⁵⁷

Reinwardt opened his lecture by rejecting ancient imaginings of the “tropics”. He then introduced the Netherlands Indies as a harmonic space which would, according to him, lay open for European settlements and further exploration.⁵⁸ Neither the

unfavourable climate nor the supposedly barbaric societies there should keep people from visiting the Netherlands Indies. Reinwardt wordily pointed out that the climate there served as an advantage rather than a disadvantage, since it produced a unique fertility and variety in nature. Individual travellers who feared the climate could protect themselves through self-discipline and moderation, and, more practically, by wearing suitable clothes and consuming appropriate foods.⁵⁹ Furthermore, the various people there were good-natured and would welcome guests as long as they did not try to change their customs and traditions.⁶⁰ But the most important reason to visit the Netherlands Indies was, according to Reinwardt, nature itself.⁶¹ Reinwardt proclaimed that everyone who arrives from the “moderate zone” will at first be struck and overwhelmed by an incredible diversity of natural items.

First, he [the naturalist in the field] is amazed at the unusual magnitude; then he is surprised at the variety and the abundance of the forms, that he almost begins to despair if he wants to know all of them. Subsequently, he starts thinking about the origin of everything; about how nature can produce such plenitude, based either on the earth's hard and stony elementary principles (*beginselen*), or the circulating air, or the battle between those two.⁶²

Subsequently, the naturalist in the field will recognise “...that everything which exists in nature is nourished...by mutual interdependence, and that nothing, separated from the rest, can exist on its own”.⁶³ He further adds that “although the truth of all this is uncontested, it is still a major shortcoming within...natural history”,⁶⁴ especially among sedentary metropolitan naturalists who analysed natural specimens without having experienced their natural environment. He warned that their underlying assumption that nature manifested itself in every specimen separately was highly problematic. Only the meticulous observation of plants, animals, minerals and human beings *within* their local environment and the careful comparison of those observations on a global scale could lead to a new type of natural history. And only this new and insightful natural history which also took climate (*luchtgesteldheid*), soil, water, and other factors into account would be able to unravel the hidden causes and the mutual interdependence of nature.⁶⁵

In an unpublished text which was apparently meant to serve as an introduction to a larger monograph about his expedition to the East, Reinwardt repeated his point. There he stated that it must be considered a great aberration when naturalists who want to know about the natural products of remote countries believe that specimens collected in the field can be properly analysed in Europe—those remote analyses would not at all contribute to the “great building of science”.⁶⁶

To validate his point, Reinwardt referred to coral plants (*koraalgewassen*) which he had thoroughly investigated in the Archipelago. The naturalist, as he put it, who had not experienced and seen the corals in their environment, would consider them as rigid stony lumps which have never changed their shape. Only the naturalist who had observed the corals in the sea water would recognise that they were created and continuously reshaped by marine animals. At the same time, Reinwardt continued, corals tellingly reveal that there is no clear boundary between earth and sea. One must even assume, as he put it, that the entire earth had apparently been lift-

ed out of the sea—a fact which sedentary metropolitan naturalists could never realise.⁶⁷

Beside his activities as lecturer in Leiden, Reinwardt became a member of several natural historical societies throughout Europe such as the *Kaiserlich Leopoldinisch-Carolinische Deutsche Akademie der Naturwissenschaftler*, the *Société philomatique Paris* and the *Koninklijke Akademie van Wetenschappen Antwerpen*.⁶⁸ In lectures on the origin of limestone, coral reefs, and on the different soils in the Malay Archipelago held in the Netherlands and abroad, Reinwardt tried to develop and communicate his scientific ideas.⁶⁹ His most important lecture was given during a gathering of the *Versammlung deutscher Naturforscher und Ärzte* (German Association of Naturalists and Physicians) organised by Humboldt in Berlin in 1828. In the lecture entitled *On the character of the vegetation on the islands of the Indian archipelago*, Reinwardt introduced the Malay Archipelago again as a place where nature had remained largely untouched by human beings, particularly the hinterland of the Archipelago, which was, as he put it, “a country... as it has emerged from the lap of the Creation (*Schoße der Schöpfung*), where everything has remained untouched and everything has been left to itself”.⁷⁰ Reinwardt further pointed out that hidden and still unknown “juices” were at work in certain trees, causing the growth and the development of knots, leaves, roots and the trunk. Moreover, since the trees were all connected with each other underground, they formed an interconnected whole. In the remaining parts of the lecture Reinwardt gave a rough overview of the plant geography of the Archipelago. He eventually concluded his lecture by putting forward an analysis of the volcanic soil which he counted as the most important factor for the extreme growth and diversity in the Archipelago.⁷¹

Conclusion

The preceding case study started out from the notion that metropolitan actors sought to use naturalists such as Reinwardt as calibrated tools to bridge the epistemological and geographical gap between them and various sites abroad. An analysis of Reinwardt's life and career has revealed the strategies which were applied to “domesticate” the naturalist in order to gain reliable and interpretable information from the field. Before Reinwardt departed for the Netherlands Indies, he was thoroughly instructed as to how to survey the colony. Furthermore, he was obliged to help the central colonial authorities set up a functioning colonial administration. Moreover, he had to find practical and feasible solutions to pressing issues such as the production of saltpetre or the introduction of standardised weights and measures of length. This heavy workload eventually led to his breakdown. After his recovery, Reinwardt's responsibilities shifted from the actual establishment and improvement of empire toward natural historical and geological field work. An in-depth analysis of his expedition to the Lesser Sunda Islands and the Moluccas has shown that Reinwardt, who heavily relied upon the colonial infrastructure and locally available support in the field, used every means to gain a broad range of knowledge at the sites he visited. The accumulated knowledge was in many cases the product of an intricate interplay with and dependence on the skills and knowledge of local officials, translators, guides and witnesses. Back in Europe, Reinwardt

obscured or replaced these complex local mediations with a narrative which put him into the limelight as a heroic figure who had encountered the, as he puts it, wild, manifold and fertile nature of the Malay Archipelago. The various attempts to “domesticate” the naturalist as a malleable tool of metropolitan science had thus failed. Reinwardt instead used his self-constructed authority as a fearless travelling naturalist to call metropolitan notions of the discipline of natural history into question. In contradiction to established sedentary naturalists such as Temminck, Reinwardt promoted and announced a new type of natural history which should focus exclusively on the interconnectedness and forces in nature by surveying, measuring, and experiencing nature *in situ*. Thus true natural historical knowledge had to be produced abroad and not in the secluded spaces of the natural historical institutions at home.

Bibliography of Works Cited

Archival Sources

National Archives, The Hague (NA):

– Ministerie van Koloniën 1814-1849

– Ministerie van Koloniën 1850-1900

– Collection Reinwardt

Leiden University, University Library (UL):

– Collection Reinwardt, BPL 2425, 3, 5 and 20.

Koninklijke Bibliotheek, Den Haag (KB):

– Letter collection, 121 B 8

Published Sources

Dettelbach, M. “The Stimulations of Travel: Humboldt’s Physiological Construction of the Tropics”. In *Tropical Visions of Empire*, edited by Felix Driver et al., 43-58. Chicago: The University of Chicago Press, 2005.

———. “Humboldtian Science”. In *Cultures of Natural History*, edited by Nicholas Jardine et al., 287-304. Cambridge: Cambridge University Press, 1996.

De Vriese, W.H., ed. *Reinwardt’s reis naar het oostelijk gedeelte van den Indischen Archipel in het jaar 1821*. Amsterdam: Frederik Muller, 1858.

Doel, W. van den. *Het rijk van Insulinde. Opkomst en ondergang van een Nederlandse kolonie*. Amsterdam: Prometheus, 1996.

Farber, P. L. *Finding Order in Nature: the Naturalist Tradition from Linnaeus to E.O. Wilson*. Baltimore, MD: Johns Hopkins University Press, 2000.

Gassó Miracle, M.E. “The Significance of Temminck’s work on Biogeography: Early Nineteenth Century Natural History in Leiden, The Netherlands”. *Journal of the History of Biology* 41 (2008): 677-716.

Gijzen, A. *’s Rijks museum van natuurlijke historie, 1820-1915*. Rotterdam: W.L. & J. Brussels, 1938.

Holthuis, L.B. *1820-1958: Rijksmuseum van Natuurlijke Historie*. Leiden: Nationaal Natuurhistorisch Museum, 1995.

Horn, J. and C. Jacob. “Jean-Antoine Chaptal and the Cultural Roots of French Industrialization”. *Technology and Culture* 39 (1998): 671-98.

Kennedy, D. “Imperial History and Post-Colonial Theory”. *The Journal of Imperial and Commonwealth History* 24 (1996): 345-63.

Latour, B. *Science in Action. How to Follow Scientists and Engineers Through Society*. Cambridge, Mass.: Harvard University Press, 1987.

Lennepe, J. van, ed. *Het leven van Mr. C. van Lennepe en Mr. David Jacob van Lennepe*. Amsterdam: Frederik Muller, 1862.

Livingstone, D. *Putting Science in its Place*. Chicago: University of Chicago Press, 2003.

- Mijnhardt, W.W. *Tot Heil van 't Menschdom. Culturele genootschappen in Nederland 1750-1815*. Amsterdam: Radopi, 1987.
- Outram, D. "New Spaces in Natural History". In *Cultures of Natural History*, edited by Nicholas Jardine et al., 249-65. Cambridge: Cambridge University Press, 1996.
- Pratt, M.L. *Imperial Eyes. Travel Writing and Transculturation. Second Edition*. New York: Routledge, 2008.
- Reinwardt, C.G.C. "Redevoering over de onwederstaanbaare drift, met welke de beöffenaars der natuurlijke historie, en vooral der kruidenkunde, tot hunne studie aangezet worden". In *Vaderlandsch magazijn van wetenschap, kunst en smaak* (1803): 817-58.
- . "Redevoering, over de voortreflijkheid der nieuwe scheikunde boven de oude in het verklaren der verschijnselen van natuur en kunst". In *Vaderlandsch magazijn van wetenschap, kunst en smaak* (1805): 185-208.
- . *Redevoering van C.G.C. Reinwardt, over hetgeen het onderzoek van Indie tot uitbreiding der natuurlijke historie heeft toegebracht*. Amsterdam, 1823.
- . *Über den Charakter der Vegetation auf den Inseln des Indischen Archipels: Vortrag, gehalten in der Versammlung deutscher Naturforscher und Ärzte in Berlin am 20. Sept. 1828*. Berlin: Königliche Akademie der Wissenschaften, 1828.
- Roberts, L. "Science Dynamics: The Dutch Meet the 'New' Chemistry". In *Lavoisier in European Context: Negotiating a New Language for Chemistry*, edited by B. Bensaude-Vincent et al., 87-112. Canton, Mass.: Science History Publications, 1995.
- Snelders, H.A.M. "The New Chemistry in the Netherlands". *Osiris*, 2nd Series, 4 (1988): 121-45.
- Scalliet, M.-O. "'Back to Nature' in the East Indies". In *Pictures from the Tropics. Paintings by Western Artists During the Dutch Colonial Period in Indonesia*, edited by Marie-Odette Scalliet et al., 39-89. Wijk en Aalburg: Pictures Publisher, 1999.
- . "Beelden van Oost-Indië: de collectie Bik in het Rijksprentenkabinet". *Bulletin van het Rijksmuseum* 49 (2001): 343-78.
- Sirks, M.J. *Indisch Natuuronderzoek*. Amsterdam: Koloniaal Instituut, 1915.
- Smit, P. "The Rijksherbarium and the Scientific and Social Conditions which Influenced its Foundation". *Blumea* 25 (1979): 5-11.
- Visser, R. "Het Rijksmuseum van Natuurlijke Historie in de 19de eeuw". In *Het verdwenen museum. Natuurhistorische verzamelingen 1750-1850*, edited by B.C. Sliggers et al., 175-86. Haarlem: Teylers Museum, 2002.
- Veth, P.J. "C.G.C. Reinwardt". In *Handelingen en geschriften van het Indisch Genootschap te 's Gravenhage* (1856): 185-225.
- Vrolik, W. "Levensberigt van C.G.C. Reinwardt". In *Verlagen en mededeelingen van de Koninklijke Akademie van Wetenschappen* (1854): 214-31.

Notes

- * Andreas Weber is writing his dissertation at the Research Institute for History, Leiden University. The title of his dissertation is “Naturalists as mediators of knowledge in an expanding Dutch colonial empire, 1815-1850”.
- 1 I would like to thank Lissa Roberts for commenting on earlier drafts of this paper.
 - 2 On the *Rijksmuseum* see Holthuis, *Rijksmuseum van Natuurlijke Historie*; Gijzen, *'s Rijksmuseum van Natuurlijke Historie*; and Visser, “Het Rijksmuseum van Natuurlijke Historie in de 19de eeuw”. On the *Rijks-herbarium* see Smit, “The Rijksherbarium and the Scientific and Social Conditions which Influenced its Foundation”.
 - 3 UL, BPL, 2425, 20, Letter Falk to Reinwardt, 13 December 1814.
 - 4 Pratt, *Imperial Eyes*, 3.
 - 5 Ibid.
 - 6 A concise overview of the discussion can be found here: Kennedy, “Imperial History and Post-Colonial Theory”.
 - 7 Pratt, *Imperial Eyes*, 123.
 - 8 Livingstone, *Putting Science in its Place*, 147.
 - 9 Latour, *Science in Action*, 232.
 - 10 Livingstone, *Putting Science in its Place*, 148-71; and Latour, *Science in Action*, 223-8.
 - 11 Dettelbach, “The Stimulations of Travel”, 45.
 - 12 See Outram, “New Spaces in Natural History”, 259-63; and Dettelbach, “Humboldtian Science”, 287-91.
 - 13 Outram, *New Spaces in Natural History*, 262.
 - 14 Biographical details can be found here: De Vriese, *Reinwardt's reis*, 1-98; Veth, *C.G.C. Reinwardt*, 185-225; Vrolik, *Levensbericht*, 214-31.
 - 15 Reinwardt, “Redevoering over de onwederstaanbare drift”, 854.
 - 16 Farber, *Finding Order in Nature*, 8.
 - 17 Reinwardt, “Redevoering over de onwederstaanbare drift”, 825.
 - 18 Reinwardt, “Redevoering over de voortreffelijkheid”, 205. On the introduction of the “new chemistry” in the Netherlands, see Snelders, “The New Chemistry in the Netherlands”; and Roberts, “Science Dynamics: The Dutch Meet the ‘New’ Chemistry”.
 - 19 Ibid., 206-7. On Chaptal, see Horn and Jacob, “Jean-Antoine Chaptal and the Cultural Roots of French Industrialization”.
 - 20 De Vriese, *Reinwardt's reis*, 23-24.
 - 21 See Mijnhardt, *Tot Heil van 't Menschdom*.
 - 22 De Vriese, *Reinwardt's reis*, 17-18.
 - 23 UL, BPL 2425, 20, Letter Falk to Reinwardt, 13 December 1814.
 - 24 De Vriese, *Reinwardt's reis*, 30, Reinwardt to Falck, Amsterdam, 26 December 1814.
 - 25 UL, BPL, 2425, 3: Royal decision, 11 January 1815, no. 28, art. 2 and 4.
 - 26 Ibid., art. 5.
 - 27 Ibid.
 - 28 De Vriese, *Reinwardt's reis*, 37-48.
 - 29 UL, BPL, 2425, 3, Royal decision, 11 January 1815, no. 28, art. 11.
 - 30 UL, BPL, 2425, 20, unpublished manuscript: *Verslag van zijn reis naar Indië (Report of his journey to the Netherlands Indies)*
 - 31 Scalliet, “Beelden van Oost-Indië”, 343-5.
 - 32 Scalliet, “‘Back to Nature’ in the East Indies”, 46-57.
 - 33 See NA, Ministerie van Koloniën 1849-1900, 368 in *verbaal* 23 September 1854, where parts of Reinwardt's official correspondence and field notes are stored.
 - 34 NA, collectie Reinwardt, 7.
 - 35 KB, 121 B 8, Letter Reinwardt to De Vries, 14 September 1816.
 - 36 De Vriese, *Reinwardt's reis*, 249.
 - 37 Ibid., 251.
 - 38 UL 2425 BPL, 5, travelogue, entry: 22 March - 31 May 1818.
 - 39 KB, 121 B 8, Letter Reinwardt to De Vries, 20 May 1818.
 - 40 Van Lennep, *Het leven van Mr C. van Lennep en Mr. David Jacob van Lennep*, 156-7, Letter Elout to Van Lennep, 24 April 1818.
 - 41 See Van den Doel, *Het rijk van Insulinde*, 24-26.
 - 42 De Vriese, *Reinwardt's reis*, 307-8.
 - 43 Ibid., 328-30.
 - 44 Ibid., 333.
 - 45 Ibid., 376.
 - 46 Ibid., 544.
 - 47 Ibid., 320.
 - 48 Ibid., 349-59.
 - 49 Ibid., 361.
 - 50 Ibid., 317.
 - 51 Ibid., 340.
 - 52 Ibid., 370.
 - 53 Ibid., 413.
 - 54 Ibid., 415-6.
 - 55 KB, 121 B 8, Letter Reinwardt to De Vries, 30 June 1820.
 - 56 For a history of the committee see: Sirks, *Indisch Natuuronderzoek*.
 - 57 For a detailed study on Temminck see Gassó

- Miracle, "The Significance of Temminck's Work on Biogeography".
- 58 Reinwardt, *Redevoering over hetgeen het onderzoek*, 10-14.
- 59 Ibid., 18-19.
- 60 Ibid., 20-21.
- 61 Ibid., 22-27.
- 62 Ibid., 42-43.
- 63 Ibid., 28-29.
- 64 Ibid.
- 65 Ibid., 23.
- 66 UB Leiden, 2425, 20, unpublished manuscript: *Verslag van zijn reis naar Indië*.
- 67 Reinwardt, *Redevoering over hetgeen het onderzoek*, 31-33.
- 68 An entire list can be found here, De Vriese, *Reinwardt's reis*, 89-90.
- 69 De Vriese, *Reinwardt's reis*, 99-177.
- 70 Reinwardt, *Über den Charakter der Vegetation*, 4.
- 71 Ibid., 15-18.