

# Reinventing the Kebun Raya in the New Republic: Scientific Research at the Bogor Botanical Gardens in the Age of Decolonization

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## ABSTRACT

This essay discusses the efforts of Dutch, Japanese, and Indonesian scientists and officials to decolonize the scientific institutions in Indonesia through the reinvention of scientific research and education at the Botanical Gardens in Buitenzorg (now the Kebun Raya Bogor). The essay describes successive efforts to rethink the science in Bogor between 1931 and 1955, first during the global economic depression, then during the Japanese occupation and the Revolution, and finally during the beginning of the Indonesian Republic. I examine this process by analyzing debates about the centralization of scientific authority, the internationalization of scientific collaboration, and the place of education within scientific institutes. I argue that political changes created new opportunities for the reinvention of science at the Botanical Gardens, with a focus on international collaboration such as the Flora Malesiana project, and by the mid-1950s, an educational mission to train the first generation of Indonesian researchers.

*Keywords:* Indonesia; Botanical Gardens; Decolonization; Flora Malesiana; Bogor

Between 1940 and the early 1950s, the Botanical Gardens in Bogor changed hands numerous times, as a result of war and revolution. As Buitenzorg was renamed Bogor, and 's Lands Plantentuin became the Kebun Raya Indonesia, the Gardens grew quickly into the flagship of an independent Indonesian science. And with this came an explicit need to reinvent what had been a colonial institution. Yet despite the new scientists and new educational initiatives, the institutions did not rebuild from scratch. The footprint of the Gardens proper, and the scientific buildings with their natural collections, did not change, and there was continuity of personnel as well, as many Dutch scientists remained in Bogor in the 1950s. And with very few Indonesian scientists at the Gardens, the pre-1949 research agendas had

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Fig. 1: Queen Juliana and prince Bernhard during a visit of the Botanical Gardens in Bogor in the early 1970s. In light suit, to the left of the queen, stands Didin Sastrapradja, Head of the Botanical Gardens. Nationaal Archief, Den Haag, image collection, 924–8788.

momentum. Scientists in the early Republic were challenged to generate Indonesian science in this famous colonial vessel. I argue that far from leading to a decline in science at the Bogor Gardens, this created new opportunities and goals, including international engagement, meaningful national research, and scientific training. These initiatives, which became the mission of the Kebun Raya Indonesia after 1955, were created after almost 25 years of scientific reinvention which sought to de-colonize natural science at the Botanical Gardens.

The Indonesian Revolution has been conceived as a definitive watershed, a hard line between colonialism and independence. To be sure the revolution was a contest for governing power – and historians have justifiably tried to understand the new political and economic possibilities created for and by Indonesia during the late 1940s. However, treating the Indonesian revolution as the end of Dutch power has tended to reinforce rupture over continuity and change. This narrative, of endings and departures, frames decolonization as tragedy and loss, from which there can be no return.<sup>1</sup> This suggests a narrative of decline

<sup>1</sup> Reference the recent theatrical production *Daar werd wat groots verricht*, a phrase that originated as the title of a 1945 publication, as evidence that this emotional response to the end of the empire still lives on. This expressive retelling of the colonial past goes back to the late 1950s, when Tjalie Robinson and Rob Nieuwenhuys began a long-standing tradition of publishing first hand, subjective accounts, of colonial life. Andrew Goss, 'From Tong-Tong to Tempo Doeloe: Eurasian Memory Work and the Bracketing of Dutch Colonial History 1957–1961', *Indonesia* 70 (2000) 9–36. Recent scholarship has begun to seriously examine the effect of decolonization on European societies and cultures, see in particular Elizabeth Buettner, *Europe after Empire: Decolonization, Society, and Culture* (Cambridge 2016).

rather than change, especially at iconic colonial institutions such as 's Lands Plantentuin. But did the end of the Dutch empire really mean the end of 's Lands Plantentuin? My goal is to challenge that perception, and to suggest a different history of decolonization at the Kebun Raya.

In this paper I argue that in the years between 1931 and 1955, successive efforts at reinventing Dutch colonial science, carried out by Dutch, Japanese, and Indonesian scientists and officials, created a new scientific culture at the Botanical Gardens. In a process of near continuous reinvention, scientists created research and scientific missions that sought to put distance between themselves and the pre-1931 colonial past. I characterize these two-and-a-half decades as a period of decolonization, a time during which older systems of scientific authority were contested, and scientists and officials sought ways to create links to the world of science which were not controlled or even tainted by institutions and structures of colonial power. Starting in the early 1930s when Dutch colonial science came under attack as a result of the economic depression, the meaning and mission of science in Buitenzorg came to be challenged from within the Indies, and scientists began to explore ways science could be more than a functional appendage to colonial agriculture. In the early 1930s the old reasons for the Botanical Gardens – in particular in assisting the colonial export-crop economy – were considered better accomplished in other institutions. What appears in retrospect to be a straightforward transition from a science devoted to serving colonial needs to an independent Indonesian scientific tradition, was in fact a complex effort in which scientists and officials sought to reinvent science at the Botanical Gardens as a dispassionate form of knowledge, not beholden to imperial capitalism or colonial authority. Between 1931 and 1955, actors in Buitenzorg and Bogor looked for ways to strip away the colonial orientation in which Dutch scientific research was used to control and exploit natural resources, and create a science integrated into global networks of science. This led eventually in the mid-1950s to the creation of an independent and autonomous Indonesian scientific tradition. While there were a multitude of factors driving decolonization, all the scientists were reacting to a Gardens in crisis, and they improvised new scientific goals and practices at the Botanical Gardens. This process of decolonizing the Botanical Gardens was contradictory, interrupted, chaotic, and unguided, and with the sudden change in governing regimes throughout the 1940s, included the creation of numerous rival plans for decolonizing Dutch colonial science, only some of which reached fruition.

From the early 1930s, when severe budget cuts caused by the depression led to deliberate efforts to rethink what the Botanical Gardens was doing, until the mid-1950s, when the ex-colonial Dutch scientists left Indonesia, leading officials and scientists at the Botanical Gardens implemented new visions opportunistically, but in many cases haphazardly and incompletely. I examine this process by looking at the debates around the centralization of scientific authority, the internationalization of scientific collaboration, and the place of scientific education at the Gardens. What changed least, despite long simmering disagreements aired throughout this period about the leadership role of the Gardens, was the continued flagship status of the Botanical Gardens, as the first institute of natural science, with all other biology institutes subordinate to it. What changed most, and was most difficult for many of the Dutch scientists, was the emphasis on using the Botanical Gardens to link Indonesian science with global networks of expertise, through international cooperation and collaboration. And finally I show how scientific education, scorned in Buitenzorg throughout the 1930s, was integrated into the mission of the Botanical Gardens. My paper

further argues that there are no neat divides between Dutch, Japanese, and Indonesian scientists; the agents of reinvention at the Botanical Gardens worked side-by-side, even when their nationalities divided them, when they were together committed to change. The most acrimonious debates, not just in the 1930s, but in the late 1940s and early 1950s as well, were between Dutch scientists who wished to maintain the pre-1931 colonial science orientation, and those who envisioned a new way of doing science at the Botanical Gardens. When the new Botanical Gardens, the Kebun Raya Indonesia, emerged in the 1950s, it was the result of a collaborative effort, in particular between the director Kusnoto Setyodiwiryo and other Dutch and Indonesian scientists. Even while housed in the same buildings, science had changed dramatically in Buitenzorg, which had shed its identity as the institution of colonial science.

### *Dutch reinventions*

The Botanical Gardens became, at the beginning of the 20<sup>th</sup> century, a center of agricultural research, formally linking the pure science of the laboratory with the growth of the export-crop economy.<sup>2</sup> By the 1920s, however, when autonomous and independent crop experiment stations handled most routine tasks, scientists at the Botanical Gardens increasingly emphasized the importance of pure, non-practical research. With the onset of the depression, and the budget cuts that began in 1931, the scientists at the Plantentuin realized rapidly that they needed new arguments enumerating their value to the colony.<sup>3</sup> In the face of withering criticism, much of which insisted that the research at the Gardens be more tailored to practical needs, Gardens director W.H. Docters van Leeuwen and especially his successor K.W. Dammerman doubled down on their commitment to research for research's sake, not always directly tied to an economic dividend.<sup>4</sup> They appear to have lost this battle, especially when Director of Economic Affairs H.J. van Mook replaced Dammerman with L.G.M. Baas Becking in early 1939, but as I will show, the emphasis on decoupling the Gardens from agricultural research continued in the 1940s and 1950s. This was one part of a larger plan by Van Mook to centralize scientific authority in Buitenzorg, with Baas Becking and the scientists at the Gardens orchestrating scientific policy and research broadly for the Dutch colony. Van Mook's plans for a new colonial science were formally approved by the Volksraad in 1940, meaning it had an official imprimatur which remained relevant after 1945. Van Mook's vision of a technocratic Plantentuin was not universally shared by the scientific staff at the Gardens, but they all could get behind the Gardens as flagship of colonial science, as Van Mook proposed: "The solution of these issues is only possible if good cooperation exists between applied and pure science, and this cooperation will be best, and will develop most fruitfully, if its link is an institution which has an independent and general

2 Robert-Jan Wille, *De stationisten: laboratoriumbiologie, imperialisme en de lobby voor nationale wetenschapspolitiek, 1871–1909* (dissertation Nijmegen 2015) 313–353 and Andrew Goss, *The Floracrats: State-Sponsored Science and the Failure of the Enlightenment in Indonesia* (Madison, WI 2011) 59–95. See also Wille in this issue.

3 Docters van Leeuwen to Went, 19 December 1931, in Boerhaave Museum collections, Docters van Leeuwen Correspondence Archive.

4 K.W. Dammerman, 'Algemeene Beschouwingen', 1932, in National Archive The Hague (=NA), Indische Comité voor Wetenschappelijke Onderzoekingen collection (=ICWO), no. 188. V.V.J. Koningsberger, 'Het werk van Melchior Treub na 25 jaren', *Koloniale Studiën* 18,1 (1934) 249–258; W. Dammerman, 'Het werk van Melchior Treub na 25 jaren een antwoord aan Dr. V.J. Koningsberger', *Koloniale Studiën* 18,2 (1934) 402–412 and K.W. Dammerman, 's Lands Plantentuin te Buitenzorg', *Koloniale Studiën* 22,1 (1938) 33–57.

natural scientific mission – that is, the 's Lands Plantentuin.'<sup>5</sup> The timing of this proposal, early 1940, meant that these plans were not implemented in any real way, but all subsequent efforts to reinvent the Gardens included the idea that the Botanical Gardens would be the central hub of natural science, linked but not beholden to economic demands.

Van Mook's plan, it should be emphasized, squarely assumed continued Dutch leadership of both the colony and of science, under scientific leadership held by scientists with a broad natural science outlook. Notably, education and scientific training are completely missing from any of the pre-war vision for the Gardens – scientists were to be trained in Europe and then brought to the colony. For Van Mook and other Dutch scientists and officials, it went without saying that meaningful science was done by European scientists. This was consistent with a broader colonial policy as it related to scientific education – one estimate has it that there were five Indonesian research scientists, in any field, active before 1939.<sup>6</sup> Although by the 1930s there were hundreds of Indonesians with a higher education degree, almost all were in practical, applied areas: law, medicine, veterinary medicine, and engineering. This hierarchy was affirmed in Van Mook's reorganization plans for the Botanical Gardens; higher learning was a Dutch prerogative, although application, in forestry or agriculture, could in some cases be done by natives. And even though this reorganization proposal was approved at the same time that an agricultural university in Buitenzorg was being opened, scientists at the Gardens successfully lobbied against creating a biology department at the proposed university.<sup>7</sup>

The lack of Indonesian scientists should not suggest that Indonesian nationalists were uninterested in science. Far from it – in particular the moderate Indonesian nationalists who remained part of the Dutch colonial system advocated building a comprehensive university in the Indies that taught modern science to Indonesians. This was linked to both the continued intellectual emancipation of the Indonesian nation, as well as the emergence of Indonesia as a nation of consequence. The nationalist writer G.S.S.J. Ratulangie wrote in 1938:

Every nation who wants to be counted in the international appreciation, must also have its disciples in the scientific world. In order to maintain its national rank, all aspects of the human spirit must be directed to develop the human intellect. And this cannot be one-sided, but it must encompass all the sciences, the humanities and the natural sciences, the technical as well as the philosophical.<sup>8</sup>

Moreover, this was an issue of national stature. The moderate nationalist Soetardjo Kartohadikoesoemo wrote in 1939, 'a country needs its colleges in order to keep its national

5 Van Mook, 'Memorie van Inlichting', Volksraad, zittingsjaar 1939–1940, 'Zevende aanvullende begrooting betreffende afdeling VI der begrooting van Nederlandsch-Indie voor 1940', Onderwerp 126, February 1940, in NA, Ministerie van Koloniën Geheim Archief 1901–1940, Geheim Verbaal, 30 March 1940/Y19, no. 580. See also Van Mook to Tjarda van Starckenborgh Stachouwer, 28 December 1939/4614 Geheim in same folder.

6 Adam Messner, 'Effects of the Indonesian National Revolution and Transfer of Power on the Scientific Establishment', *Indonesia* 58 (1994) 41–68, m.n. 41. A 1970 study claimed that during the colonial period there was not a single Indonesian with formal training in biology. D. Dwidjoseptro, *Review of the State of Biology in Indonesia as a Scientific Discipline* (Malang: Institut Keguruan dan Ilmu Pendidikan, 1970) 2.

7 Van Steenis, 'Memorandum Herbarium in zake de landbouwfaculteit', 8 November 1940, in NA, Collection Van Steenis, no. 256; Van Steenis to E. de Vries, 17 December 1940, NA, Collection Van Steenis, no. 54.

8 G.S.S.J. Ratu Langie, 'De Indonesische Universiteit', *Nationale Commentaren* 1,20 (24 May 1938) 340–2, m.n. 341.

prestige compared to foreign countries. For Indonesia it shall mean that our colleges must deliver the men who we can send to international scientific congresses.<sup>9</sup> While the Japanese occupation altered the political realities of these moderate nationalists, it did not alter the sentiments that science was a road to Indonesia's developing an international reputation.

### *War and Revolution*

In 1942, the Dutch colonial *Beamtenstaat* collapsed, virtually overnight, and this created new research directions at the Botanical Gardens. By late 1942, about 100 Dutch scientists worked in Japanese-occupied Buitenzorg, at the various scientific institutes, with the agricultural experiment stations now beginning to assist the Japanese colonial economy.<sup>10</sup> The Botanical Gardens, however, was under no pressure to produce economic work, and Prof. R. Kanehira, the Japanese chief of the herbarium, was interested in writing general taxonomic pieces about the flora of the Indies, as well as a history of botanical research in the Indies. All of this was the basis of general texts about the Malay flora and its history, and Kanehira was preparing a three-volume work about the botany of Indonesia.<sup>11</sup> Kanehira, alongside two other Japanese botanists, worked with the Dutch botanists to produce material for scientific and popular audiences in the Japanese Empire. Available evidence suggests that the Japanese management kept a light touch. Shortly after the war, Kees van Steenis wrote that he had spent almost the entire period working on his own research, what would become the basis of the *Flora Malesiana*.<sup>12</sup> And because none of the Japanese spoke or read Dutch, English became the common language of the Botanical Gardens. While some scientists in Buitenzorg had published in English in the 1920s and 1930s, overwhelmingly the language of scientific publication was Dutch. The irony of the Gardens using English during the Japanese occupation should not blind us of the significant shift towards international communication within science that began during the war.<sup>13</sup>

While the Japanese occupation created new research goals at the Gardens, the Indonesian Revolution, and the conflict between Dutch and revolutionary agendas, opened new possibilities for Indonesian research scientists. Buitenzorg, so quiet during the Japanese occupation, was on the front lines during the first few months of the revolution. Following the Allied landings in Jakarta on September 29, 1945, many of the young revolutionaries — known as the *pemuda* — moved their agitation to cities surrounding the capital, including Bogor as Buitenzorg was now known, which was tense in October and November.<sup>14</sup> On October 14<sup>th</sup>, British troops from the 23<sup>rd</sup> Indian Division occupied Bogor, which allowed

9 Soetardjo Kartohadikoesoemo, 'Ons Hoogeronderwijs', *Nationale Commentaren* 2,22 (3 April 1939) 1396–8, m.n. 1396.

10 See A. Hoogerwerf, 'De natuurwetenschappelijke instituten tijdens den bezettingstijd', *Natuurwetenschappelijke Tijdschrift voor Nederlandsch-Indië* 102,3 (1946) 44–52, and M.J. van Steenis-Kruseman, *Verwerkt Indisch Verleden* (Oegstgeest 1988).

11 Van Steenis, 'Blown by the Wind, learnings through the years. Autobiographical notes', March 1986, in NA, Collection Van Steenis, no. 30.

12 Van Steenis to Verdoorn, September 12, 1945, and Van Steenis to Verdoorn, 5 November 1945, in Descartes Centre collections, Van Steenis file.

13 This was the case elsewhere as well. During the war, the Sugar Industry Experiment Station in Pasuruan produced its bulletin, for the first and only time, in English. 'Bulletin of the Experiment Station of the Java-Sugarindustry, Volume 2602, No. 1,' in T.F.H. Postma, J.W. d'Hane, and J.A. von Meijenfheldt, *De Javasuikeerindustrie gedurende de Japansche bezetting* (Batavia 1946).

14 Benedict Anderson, *Java in a Time of Revolution: Occupation and Resistance* (Ithaca, NY 1972) 168.

Dutch scientists to begin thinking about restarting colonial science.<sup>15</sup> In December the British Indian troops occupied the Governor General's palace and established the Botanical Gardens as a military camp.<sup>16</sup> There was heavy fighting in Bogor during the middle of December, and Indian troops drove the republican military units out of the center of town, although pemuda and Republican units still held territory in Bogor, including the old herbarium building.<sup>17</sup> With a complex balance between British, Dutch, and various revolutionary groups in Bogor, the city became a place for inventing new revolutionary identities.<sup>18</sup> As is suggested by oral history evidence described by James Siegel, Indonesians took shelter in the scientific and government institutions where they worked, finding ways to reinvent those institutions' hierarchies as Republican, while linking them to the outside world. Some went to the Netherlands on scholarships; others began high schools for the Indonesian adolescents. At times they risked themselves for the revolution, but not if it meant stopping their own work.<sup>19</sup>

Notwithstanding the progression of decolonization in Bogor, including at the Gardens, once Dutch colonial officials began returning in late 1945, there were concerted efforts to implement the centralization plans laid out by Van Mook in 1940. This began already in October of 1945, when Van Mook charged Baas Becking with coordinating scientific efforts in the Indies, and by the beginning of 1946 there was a coordinating commission under the control of the reformulated Department of Economic Affairs.<sup>20</sup> Baas Becking believed that his mission was to establish science at the heart of the new Federal Indonesia, where scientists such as himself would 'maintain the balance between man and earth.'<sup>21</sup> On paper, this commission had even wider powers than Van Mook's pre-war plan. In December of 1945, in one of the first meetings of the new coordinating committee, Van Mook was explicit that the reorganization of 1940 be followed in organizing science, and that the Dutch stay firmly in charge. The minutes of the meeting report that Baas Becking, comparing the situation to the Philippines 10 years earlier, argued, 'if we get an independent republic here it will probably go the same direction; first the ground will be frittered away and a generation later, slavery. The Indonesians cannot yet stand on their own feet.'<sup>22</sup> In this way, coordinating and centralizing science was explicitly linked to continued Dutch colonial control, justified through the civilizing mission. And Van Mook meant to go much further in his centralization efforts than his 1940 plan, and decreed that the private experiment stations, which had previously been independent of government control, be brought under state management.<sup>23</sup> He pushed aggressively for a central institution which would control

15 Van Steenis-Kruseman, *Verwerkt Indisch Verleden* (n. 10) 31–34.

16 Van Steenis to Baas Becking, 17 December 1945, in National Archive of the Republic of Indonesia, Jakarta (=ANRI), Algemeene Secretarie (=AS) 1944–1950, no. 872.

17 Anderson, *Java in a time* (n. 14) 297.

18 A more recent historiography about the Indonesian revolution has stressed the hybrid nature of Indonesian revolutionary experiences. See P.J. Drooglever and M.J.B. Schouten, *De leeuw en de banteng* (Den Haag 1997).

19 James Siegel, *Fetish, Recognition, Revolution* (Princeton 1997) 183–186.

20 Baas Becking to Van Mook, 30 October 1945, in ANRI, AS 1944–1950, no. 871; 'Resume van de Besprekingen inzake de Coördinatie-Commissie van Natuurwetenschappelijke Zaken op Donderdag 17 Januari 1946 op het Departement van Economische Zaken', in NA, ICWO, no. 205.

21 L.G.M. Baas Becking, 'Coördinatie van Natuurwetenschappen', 10 March 1946, in ANRI, AS 1944–1950, no. 871.

22 'Bespreking op 5 December 1945 ten kantore van Prof. Baas Becking om 2.5 u. n.m.', in NA, ICWO, no. 249.

23 'Bespreking over de Coördinatie-Commissie op Zaterdag, 9 Maart 1946 's morgens om 10 uur ten Paleize Koningsplein', in NA, ICWO, no. 206.

and coordinate all science in the Indies.<sup>24</sup> Although this centralized scientific bureau was successfully opposed by many Dutch scientists and officials, colonial science still meant Dutch scientific leadership. In a June 1947 letter to the minister in charge of Indonesia, V.J. Koningsberger and 61 other ex-colonial scientists (including many of the Gardens' former scientific staff) exhorted the government to take strong action against the Republic to avert disaster to the scientific institutions of Indonesia.

All indications, coming from leaders of the offices and institutes, are that the government of the Republic is in no way willing to take any step in the direction of cooperating with the Netherlands-Indies authorities. It refuses to return institutes and their equipment of the Netherlands Indies, thus the future United States [of Indonesia], and tries to exploit them itself with help from workers mostly far out of their league. Herein it causes the deterioration of these institutions, of which the results cannot be undone for years. Everything shows that there is no sense of normalcy and that the government of the Republic is not at all aware of the above-mentioned disastrous results to the entire population.<sup>25</sup>

The Dutch civilizing mission continued to be a powerful justification for opposing decolonization. And it is apparent how for these former colonial scientists, the take-over of science by the Republic would mean an end to the colonial institutions they had created. The Indonesian officials and scientists, who were about to be put in charge of these institutes, could never, in their eyes, succeed. Notwithstanding this dramatic effort to roll back colonial science to an earlier model, and keep the Dutch in charge, the clock would not be wound back to a pre-war colonial science. By late 1947, science had become a way to chart a forward path, towards a decolonized Indonesia, and that meant breaking from the past.

### *Independence*

Already by late 1948 there was Indonesian leadership over the Botanical Gardens, as Wisaksono Wirjodihardjo at the Department of Agriculture and Fisheries had oversight over the Gardens.<sup>26</sup> Putting Indonesians in charge of scientific operations was an important priority for a decolonized Indonesia – and in late 1949, Kusnoto Setyodiwiryō was appointed director of the Botanical Gardens. Kusnoto was an agricultural engineer trained in Wageningen and with years of research experience at the Agricultural Experiment Station, was one of the few Indonesian natural scientists.<sup>27</sup> For Kusnoto and the other Indonesian scientific leaders, there was a need to quickly create an Indonesian research culture, by linking Indonesia to the global world of science. And because there were so very few Indonesian scientists – Kees van Steenis in 1946 wrote that there was only one Indonesian forester and a handful of agriculturalists, and no Indonesian zoologists or biologists – that meant that Indonesian science would continue to need outside help to run the scientific institutes in Buitenzorg.<sup>28</sup>

24 Baas Becking and Hart to Van Mook, 12 August 1946/3661/XX and 'Nota betreffende: Een Nederlandsch-Indischen Natuurwetenschappelijken Dienst', in ANRI, AS 1944–1950, no. 871.

25 V.J. Koningsberger et al. to Minister van Overzeesche Gebiedsdelen, 10 June 1947, in ANRI, AS 1944–1950, no. 871.

26 Wisaksono Wirjodihardjo to Hoofd van de Dienst voor Algemeen Personele Zaken, 11 December 1948, in ANRI, AS 1944–1950, no. 869.

27 M.A. Rifai, 'In Memoriam, Prof. Ir. Kusnoto Setyodiwiryō', *Reinwardtia* 10,1 (1982) 1–4.

28 Kees van Steenis, 'Report on the State of the Scientific Institutes Buitenzorg', 25 January 1946, in NA, ICWO, no. 243.

At the same time that Indonesians were culling Dutch scientific leadership, for example by replacing Dutch members of the Organization for Scientific Research with Indonesians, Indonesian scientists in Bogor plotted how to build Indonesian science without Indonesian scientists.<sup>29</sup> Kusnoto, in a 1951 speech celebrating the centennial of Treub's birth, sketched a three-pronged approach to establishing an Indonesian scientific and research reputation: maintaining the presence of Dutch scientists, cooperation with UNESCO, and eventual education of young Indonesian scientists.

The Government and the Community in this county must acknowledge, that the interest in natural science research – especially in the biology field – is sadly limited. When we further acknowledge that a position at the research institutes is not attractive, then Indonesia cannot hope that qualified Indonesian academics will fulfill the leading responsibilities at these institutes. The current occupation of these positions by European personnel is possible, because, in the first place, of the idealistic commitments these loyal staff members take in order to honor the holy *tradition* of the *great pioneers* of the past – and only as long as the circumstances will allow this. Still today the eyes of the international world look to Bogor as the scientific center of Indonesia. This is apparent from the expressed wish of the UNESCO representative in Indonesia to establish their office here in Bogor.<sup>30</sup>

The research mission, front-and-center for Kusnoto, was also reflected in the official name of the Botanical Gardens in the early 1950s, Lembaga Pusat Penyelidikan Alam, or the Central Institute for the Research of Nature, although the name Kebun Raya Indonesia remained in popular usage.

In 1951, Kusnoto stressed continuity of both mission and personnel at the Kebun Raya Indonesia. Although he pointed to the lack of suitable Indonesian personnel, he suggested a gradual transition to Indonesian scientific leadership. And notably, he did not indicate that teaching students would be within the mission of the Kebun Raya. In the short-term there was a lot of optimism that the Kebun Raya could be a center of Indonesia science, relying on Dutch scientists. M.A. Lieftinck was chief of the Zoological Museum, and Koba Ruinen and Rien Donk headed the Treub Laboratory and the Herbarium Bogoriense respectively. By late 1950, the herbarium was loaning out 25,000 specimens a year. In 1951, Donk wrote that 'we have come again into the lime-light of the international forum and I dare say that again people are realizing faster and faster that Bogor, perhaps more than ever, is developing once more into one of the most important centers of Systematic Botany.'<sup>31</sup> Kusnoto, in his 1951 annual report, was highly optimistic especially about the herbarium, arguing that 'it has reached the pre-war standard, and that it has stabilized at a generally higher level.'<sup>32</sup> Available evidence from letters written by the Dutch scientists suggest that Kusnoto was well-liked, and initially there was no real strife between the Dutch scientists and Indonesian management.

Kusnoto and the new government officials of Indonesia also quickly launched a novel international scientific project, the Flora Malesiana. The Flora Malesiana was a collaborative

29 'Annual Report of the General Secretary to the President of the Board of the Organization for Scientific Research in Indonesia for 1951', *Journal for Scientific Research* 1, 6/7 (1952) 1–11.

30 Kusnoto, 'De toekomst van de Regeringsinstellingen voor natuurwetenschappelijk onderzoek te Bogor', 13 July 1951, in NA, Collection Van Steenis, no. 246.

31 In a speech given to celebrate the 134<sup>th</sup> year of the Botanical Gardens. Donk, 'Herbarium Bogoriense', 17 May 1951, in NA, Collection Van Steenis, no. 92.

32 Kusnoto, 'Jaarverslag, 1951', in NA, Van Steenis collection, no. 245.

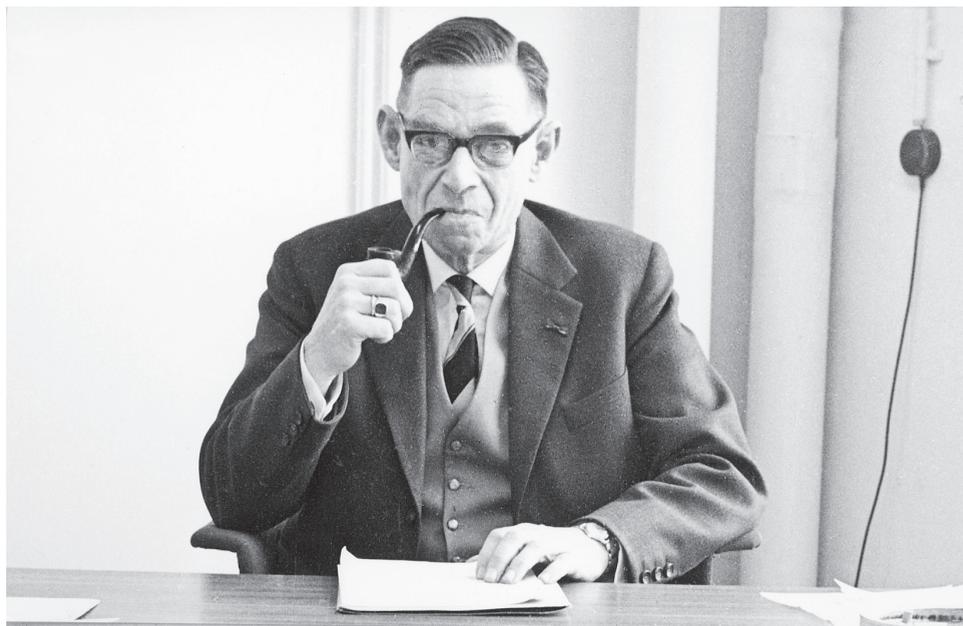


Fig. 2: C.G.G.J. van Steenis at his desk in the old Rijksherbarium, collection: Naturalis Biodiversity Center, Leiden.

project with involvement from botanists in Asia, Australia, Europe and North America to write and publish a comprehensive taxonomy of the Southeast Asian flora. A few months after the transfer of sovereignty, the government of Indonesia authorized the Flora Malesiana, and began funding Kees van Steenis about f100,000 per year to manage the editing of a grand flora of the Indonesian archipelago, from his home in a suburb of Leiden. Van Steenis had been part of the Botanical Gardens for over 20 years, but in the 1930s his official duties were as the economic botanist. His dream of writing and editing a grand flora of the entire archipelago had been out of step with the economic orientation of colonial science. Furthermore, as he later found out by reading archival letters, H.J. Lam and others in both the Netherlands and Buitenzorg had been actively working against him and the Flora Malesiana in the years leading up to the war.<sup>33</sup> Although he was able to work on it during the Japanese occupation, he failed to convince most Dutch political or scientific leaders of its importance, and by the middle of 1948, Dutch colleagues in Buitenzorg were actively trying to stop it from getting off the ground.<sup>34</sup> However, Van Steenis found out in late 1949 and early 1950, while he was back in Indonesia after an absence of three years, that Indonesian officials were not opposed to continued Dutch participation in Indonesian science, as long as it was clear that the Buitenzorg gardens and its scientific initiatives were under Indonesian governance.<sup>35</sup> As a result, when the Flora Malesiana Foundation was created in

33 Van Steenis to Van Slooten, 16 October 1946, in NA, Collection Van Steenis, no. 8.

34 Van Slooten to Van Steenis, 8 June 1948, in NA, Collection Van Steenis, no. 8.

35 Van Steenis to De Wit, 16 March 1950, in NA, Collection Van Steenis, no. 9.

late 1950 to house the project, it was an Indonesian foundation with Kusnoto in charge.<sup>36</sup> Van Steenis had figured out by then, that what really appealed to Indonesian administrators and government officials was an assertion to both nationalism and internationalism. He wrote a senior Indonesian agricultural official that ‘The possibility offered to the Gardens of Indonesia to carry-out, in the most efficient way, such a project shall not escape notice in international circles of science, and will certainly be received enthusiastically. For the large general floras, which have been written about tropical areas, the Flora Malesiana is the first one that is directly initiated by a Government, and in this case the Government of the country for whom it is being written.’<sup>37</sup> This Flora Malesiana was a great point of pride during Kusnoto’s tenure as director, which he hailed as the prime example of participating in international science.<sup>38</sup>

Kusnoto was optimistic he could reach his goal of using science as a bridge between Indonesia and the international community. In early 1951 he wrote ‘it appears that the Indonesian Botanical Gardens shall spread its wings wider than the Gardens ever has before.’<sup>39</sup> Kusnoto sent M.A. Donk, herbarium director, on a sanctioned research trip to Leiden and other European herbaria, where he was also to search for foreign scientists interested in positions in Bogor.<sup>40</sup> The Botanical Gardens was active in exchanging journals and herbarium materials with other institutions; in 1953 it swapped journals with 521 unique addresses.<sup>41</sup> From 1952 onward, there certainly were financial challenges, especially due to Kusnoto’s inability to offer salaries that kept up with inflation. While Kusnoto was not shy about the lack of resources, he continued to be optimistic about the future of the Gardens, because the budget numbers remained stable through 1954, even as its real value declined. The Ministry of Agriculture kept supporting Kusnoto and the Kebun Raya. In late 1952, the Department of Agriculture made the Gardens a chief institute of the department, with Kusnoto receiving a rank equivalent to secretary general.<sup>42</sup> In 1954, the budget request for the Gardens was Rp. 6,920,600.<sup>43</sup> Through 1954, most of the mid-career Dutch biologists who had committed after independence to staying were still there; the herbarium alone had at least four Dutch botanists working under M.A. Donk.<sup>44</sup> The evidence suggests that until early 1955, Kusnoto believed that he could turn things around by relying on Dutch scientific researchers.

An ugly personnel disagreement in January of 1955, between Dutch employees, pushed Kusnoto towards a new model of running the Botanical Gardens. The conflict started over a dispute about who should lead the new branch of the Kebun Raya in Padang, Sumatra, and boiled over at a staff meeting when a tearful Donk launched into a critical lament about the sorry state of science in Buitenzorg. The European gardening chief of the Gardens,

36 Van Steenis to De Wit, 27 August 1950, in NA, Collection Van Steenis, no. 9.

37 Van Steenis to Hermen Kartowisastro, 1 October 1950, in NA, Collection Van Steenis, no. 176.

38 Kusnoto Setyodiwiryo, ‘Kebun Raya Indonesia (Lembaga Pusat Penyelidikan Alam)’, *Berita M.I.P.I.* 1, 1 (1957) 5–29.

39 Kusnoto to Van Steenis, 31 January 1951, in NA, Collection Van Steenis, no. 178.

40 Kusnoto, ‘Laporan tahun 1953 dari Djawatan Penyelidikan Alam (Kebun Raya Indonesia)’, (1957) 66.

41 *Ibidem* 9–13.

42 Kusnoto to Van Steenis, 22 December 1952, in NA, Collection Van Steenis, no. 7

43 Kusnoto, ‘Laporan Tahun 1954 dari Djawatan Penyelidikan Alam’, (Bogor: n.d.) 2–3. If using the official exchange rate of the 1950s, this would roughly translate to a four million Euros budget request, in today’s currency.

44 Kusnoto to Van Steenis, 9 November 1954, in NA, Collection Van Steenis, no. 7.



Fig. 3: A.J.G.H. Kostermans on the right with a Dutch scientist and Estiti Harti Sujono, then an Indonesian biology student c. 1970, collection: Naturalis Biodiversity, Leiden.

J. Douglas, questioned Donk about labeling authority, and Donk lost his temper in the meeting, making further accusations the next day. Donk then sent an emotional letter of grievance to Kusnoto, indicting the Indonesian Government for failing to take care of the valuable science in Bogor and threatening to quit. Kusnoto responded by firing Donk, and replacing him with the Indonesian forester Anwar Dilmay.<sup>45</sup>

This act, of an Indonesian firing an established Dutch scientist in early 1955, was the beginning of the end of Dutch involvement in Indonesian science. In Kusnoto's letter to the minister of agriculture, which he sent shortly after receiving Donk's complaint, he began by pointing out that in the 137 year history of the Gardens there had never been an Indonesian appointed as an academic botanist or zoologist. He explained that the departure of Donk would mean a loss of international stature, and that in the future, likely only inexperienced academics would take an appointment at the Herbarium.<sup>46</sup> This set in motion a new institutional strategy — Kusnoto would no longer rely on Dutch research scientists, but would turn towards training his own Indonesian students and staff to become world-class researchers. He did not abandon the belief in international cooperation, and he continued to support the *Flora Malesiana*, but in the future it would be Indonesian scientists who represented the Kebun Raya. In secret, and without telling the Dutch scientists, he began planning a biology academy, housed in the Gardens, which would teach young Indonesians

45 Koba Ruinen to Van Steenis, 1 February 1955; Donk to Kusnoto, 18 January 1955, no. C1/11, and Kusnoto to Van Steenis, 17 February 1955, in NA, Collection Van Steenis, no. 51.

46 Kusnoto to Menteri Pertanian, 24 January 1955, no. 40/secret, in NA, Collection Van Steenis, no. 51.

right out of high school to become research biologists.<sup>47</sup> The Dutch research scientists were appalled that their research jobs were being transformed into teaching positions. Koba Ruinen, the Dutch chief of the Treub Laboratory, drafted her letter of resignation shortly thereafter.<sup>48</sup> She was not persuaded by Kusnoto's calling upon on their sense of mission to the Kebun Raya, and that its future lay in training young Indonesian biological researchers. Most of the Dutch staff left in the next eighteen months, and although there were stray Dutch visitors and scientific staff in the next few years, and the Flora Malesiana still had funding from the Indonesian government officially until 1957, and unofficially until 1959, there was little Dutch exchange to the Gardens until the early 1970s, when Van Steenis began to rekindle the Flora Malesiana ties between Leiden and Bogor.<sup>49</sup>

Nobody illustrates decolonized science at the Kebun Raya better than A.J.G.H. Kostermans.<sup>50</sup> Kostermans became one of the most prominent scientists of the Indonesian Gardens, despite being openly homosexual and an Indo-European – many visitors to the Gardens will have remembered seeing his grave near the entrance of the Kebun Raya. Kostermans, a Utrecht PhD from the late 1930s, was attached to the Forestry Service after the war, and was not liked personally or respected professionally by the Dutch scientists in Bogor.<sup>51</sup> But after 1955, Kostermans thrived at the Kebun Raya, where he was the great impresario of Indonesian biology, finding funding, patronage, and meaning in the reinvented Gardens. He navigated the multiple personal and professional identities expertly: he became an Indonesian citizen in the late 1950s when Dutch citizens were given the choice of leaving or changing citizenship. Kostermans embraced the educational mission of the Biology Academy, and during the lean years in the 1960s helped sustain the herbarium and its staff in creative ways — he has been credited with inventing the project system, in which foreign funds for a research project augment Indonesian staff salaries. He mentored the early graduates of the Biology Academy, and they treated him as a father-figure in later years, even after a number of personal and professional scandals in the 1970s. Van Steenis stayed on mostly cordial terms with Kostermans, despite a strong personal distaste for him, something he recorded for the posterity in 1986, but did not publish.<sup>52</sup> Kostermans' ability to negotiate between the global scientific networks, the Indonesian scientists, and even the New Order generals, was one reason the Botanical Gardens emerged in the 1970s as the center for Indonesian 'research fever.'<sup>53</sup>

### Conclusion

In 1950, at the birth of the Indonesian Republic, Bogor seemed on the verge of becoming an international scientific city, with planning being done for a UNESCO office, a steady

47 Kusnoto, 'Pendirian Akademi Biologi', 18 May 1955/416, in NA, Collection Van Steenis, no 232.

48 Ruinen to van Steenis, 28 May 1955, in NA, Collection Van Steenis, no. 232.

49 Van Steenis to Sarwono Prawirohardjo, 10 November 1970, in NA, Collection Van Steenis archive, no 116.

50 For biographical information see Mien Rifai, 'Kostermans: The Man, His Work, His Legacy', in *Plant Diversity in Malesia III* (Kew 1997) 225–30 and Michele Horne, 'AJGH Kostermans: Journeys with plants, science and grass soup', <http://historynet.anu.edu.au/ajgh-kostermans>.

51 Ruinen to Van Steenis, 1 February 1955 (note 45).

52 It seems likely that Van Steenis' homophobia also drove some of his judgment, Van Steenis, 'Biographische notities over AJGH Kostermans', 23 March 1986, in Naturalis, National Herbarium Nederlands Leiden archive, vertrouwelijke correspondentie doos 1946–1976.

53 Mien Rifai, Setijati Sastrapradja, Soenartono Adisoemarto, 'Demam Penelitian', *Berita LIPI* 17,1 (1973) 3–9.

stream of foreign visiting scientists, and expanded possibilities of international collaboration along the lines of the Flora Malesiana. Even some of the Dutch scientists thought that Republican leadership would lead to positive changes after nearly two decades of crisis, war, and revolution. In the early 1950s, there was still broad budgetary support for the efforts of scientific research in Indonesia; the 1950 budget for the Organization for Scientific Research was f. 447,050.<sup>54</sup> Kusnoto took over the reins of the Botanical Gardens, and sought to make it a world-class center of natural science research connected to global networks of science. Although he maintained the physical structures of the colonial 's Lands Plantentuin, the research agendas were to be connected to global developments, while still being recognizably an Indonesian contribution. There was no pressure, at that point, to produce useful or practical knowledge, and with the absence of any competing institutions, the Kebun Raya Indonesia became the site for reinventing how science was done.

As decolonized science took shape at the Kebun Raya Indonesia in the late 1950s, Kusnoto's decision to train and educate researchers helped turn the Gardens into the flagship of Indonesian biology. Many of the students from the first two cohorts stayed in the orbit of the Kebun Raya, even after Kusnoto was replaced as director in 1959, and almost half of them went on to graduate education abroad. And when in the 1960s, scientific centralization in Indonesia finally took shape with the creation of the Indonesian Institute of Sciences, along the lines initially sketched by Van Mook and Baas Becking, the Kebun Raya Indonesia came, as the Lembaga Biologi Nasional (National Biological Institute), to direct the natural science research culture of Indonesia. While a full discussion of these developments is beyond the scope of this essay, I do want to emphasize how efforts to decolonize science at the 's Lands Plantentuin in the years between 1931 and 1955 – by decoupling it from agricultural development, through centralization of scientific authority, by focusing on scientific research training, and by emphasizing international cooperation – reinvented the Botanical Gardens and created what would become an Indonesian flagship of research. In an article marking the 150-year anniversary of the Botanical Gardens in 1967, the then director Didin Sastrapradja pointed to the long history of research at the Gardens, arguing that in the previous few years, research had again blossomed at the Gardens.<sup>55</sup> At the time the New Order regime was promoting economic development, the Gardens became fully integrated into government initiatives as the scientific research arm for natural science, opening up access to funding. By then it was possible to point to the Dutch antecedents of the Gardens without any concern that the Gardens were thought of as negative colonial legacy.

54 'Begrooting O.N.O. – 1950', in ANRI, AS 1944–1950, no. 872.

55 Didin S. Sastrapradja, 'Peranan Kebun Raya Bogor Dalam Perkembangan Ilmu Biologi di Indonesia', *Berita MIPPI* 11, 3–4 (1967) 18–24.