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**Germanophone Physicians in the Dutch East Indies:
Transimperial Histories of Medicine between
Europe and Colonized Indonesia, c. 1873–1920s**

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Zusammenfassung

Germanophone Physicians in the Dutch East Indies ist die erste umfassende Studie, die sich mit den Ärzten aus den deutschsprachigen Teilen der deutschen Staaten und des Kaiserreichs, der Schweiz und Habsburg Österreich befasst, die von 1873 bis in die 1920er Jahre im militärischen und zivilen Gesundheitsdienst der niederländischen Kolonialmacht in Niederländisch-Ostindien tätig waren. Durch den Fokus auf Ärzte aus Regionen ohne, mit späten oder kurzlebigen ‘formalen’ Überseekolonien in ‘fremden’ imperialen Diensten verfolgt die Studie drei miteinander verbundene Ziele.

Erstens reiht sich die vorliegende Dissertation in einen vielversprechenden Forschungsstrang ein, der die Kolonialgeschichte aus einer transimperialen Perspektive untersucht, die vermeintlich getrennten nationale und imperiale Kontexte im ‘gleichen analytischen Feld’ vereint. Indem sie die diversen Beiträge schweizerischer und österreichischer Ärzte zur niederländischen Kolonialmedizin hervorhebt und aufzeigt, wie der medizinische Diskurs in der Schweiz und im Habsburgerreich von Ärzten ‘im kolonialen Feld’ geprägt wurde, beleuchtet die Studie die kolonialen Verflechtungen europäischer Regionen, die keine eigenen ‘formalen’ Kolonialreiche besaßen. Darüber hinaus erweitert sie den räumlichen und zeitlichen Rahmen der konventionellen niederländischen und deutschen Kolonialgeschichte, indem sie den Werdegang von Ärzten aus den deutschen Staaten und dem Kaiserreich in niederländischen Kolonialdiensten vor, während und nach der Gründung des deutschen Kolonialreichs nachzeichnet.

Zweitens untersucht diese Studie die Rolle kolonialer Kontexte in der Selbstwahrnehmung und -behauptung europäischer Mittelschichtsmänner. Ein Anliegen dabei ist es, aufzuzeigen, wie der Beitritt in ‘fremde’ imperiale Dienste Ärzten dazu dienen konnte, nach sozialer Mobilität, finanzieller Sicherheit oder der Verkörperung hegemonialer Männlichkeitsideale zu streben. Wie verschiedene im Rahmen dieser Studie analysierte Beispiele zeigen, nutzten deutschsprachige Ärzte, die in den niederländischen kolonialen Gesundheitseinrichtungen in Südostasien tätig waren, das durch ihren Kolonialdienst erworbene symbolische Kapital, um wissenschaftliche Autorität in hochaktuellen medizinischen Teilgebieten des späten 19. Jahrhunderts – etwa der Bakteriologie oder der Tropenmedizin – zu behaupten. Andere verbreiteten ihre vermeintlichen Abenteuer im Fernen Osten durch veröffentlichte Memoiren oder Briefe an ihre Verwandten ‘zu Hause’ und stellten sich dadurch als abenteuerlustige, mutige und weitgereiste Männer dar, die Ideale imperialer Männlichkeit verkörperten.

Drittens ergänzt die vorliegende Arbeit neuere Ansätze zur Geschichte der Kolonialmedizin, die Darstellungen der europäischen Medizin als allmächtiges ‘Werkzeug des Imperiums’ in Frage stellen. Zu diesem Zweck konzentriert sich die Studie auf ‘Männer vor Ort’, d. h. auf Ärzte, die in den kolonialen Militär- und Zivilspitälern tätig waren, um die verschiedenen Arten zu beleuchten, in denen medizinisches Wissen in kolonialen Kontexten geformt und angefochten wurde. Dieser Fokus auf medizinische Praktiken ‘vor Ort’ anstelle von Theorien weist darauf hin, dass europäische Ärzte mit dem Widerstand ihrer Patient:innen, mit der Konkurrenz indigener, medizinischer Traditionen oder mit zuvor unbekannten Krankheiten und Umweltbedingungen konfrontiert waren, und ihre eine hegemoniale Position in der komplexen sozialen Formation in Niederländisch-Ostindien zutiefst umstritten war. Darüber hinaus wird aufgezeigt, wie medizinische Disziplinen des späten 19. Jahrhunderts wie die Bakteriologie oder die Tropenmedizin, die sich selbst als ‘objektiv’ und ‘universell’ darstellten, zutiefst von den Interessen kolonialer Institutionen und der kolonialen Ideologie geprägt waren, und wie rassifizierte Vorstellungen des menschlichen Körpers und seiner Neigung zu Krankheiten die europäische Medizin auch im 20 prägte.

Das erste Kapitel befasst sich mit den transimperialen Arbeitsmärkten für ‘ausländische’ medizinische Experten aus dem deutschsprachigen Europa im 19. Jahrhundert. Es zeigt, wie die niederländische Kolonialarmee, die ein Monopol auf das Gesundheitssystem in Niederländisch-Ostindien innehatte, zur wichtigsten Arbeitgeberin für medizinisch ausgebildete Männer aus dem deutschsprachigen Europa wurde. Das zweite Kapitel befasst sich mit den Berichten deutschsprachiger Ärzte, die im späten 19. Jahrhundert in der Provinz Aceh im Nordwesten Sumatras stationiert waren, wo die gegen den achinesischen Widerstand. Durch die Analyse ihrer Berichte aus einer intersektionalen Perspektive verortet das Kapitel diese ‘ausländischen’, medizinisch ausgebildeten Mittelschichtsmänner in niederländischen Kolonialdiensten in der komplexen sozialen Formation in Niederländischen-Ostindien. Das dritte Kapitel beleuchtet, wie deutschsprachige Ärzte ihre Erfahrungen mit Krankheiten und Patient:innen in den Tropen dazu nutzten, wissenschaftliche Autorität im bakteriologischen Diskurs des späten 19. Jahrhunderts zu behaupten. Das letzte Kapitel setzt schliesslich den Fokus auf deutsche und Schweizer Ärzte, die in den zivilen Krankenhäusern auf dem Plantagengürtel Sumatras tätig waren. Das Kapitel verweist auf die verschiedenen biopolitischen Implikationen der sogenannten ‘Plantagenhygiene’ hin und zeigt, wie die Ärzte aus ihren Erfahrungen in Sumatra Kapital schlugen, um wissenschaftliche Karrieren in Europa und darüber hinaus zu initiieren.

Summary

Germanophone Physicians in the Dutch East Indies is the first comprehensive study to examine the case of physicians from the German-speaking parts of the German States and Empire, Switzerland, and Habsburg Austria employed with the Dutch East Indies' military and civil health services from 1873 to the 1920s. By focusing on medical professionals from regions with no, late, or short-lived colonial overseas possessions of their own in 'foreign' imperial services, the study pursues three interrelated aims.

First, this thesis is situated within a large and growing body of research that investigates the history of empire from a transimperial perspective, attempting to unite seemingly distinct national and imperial settings within 'the same analytical field'. On the one hand, by highlighting the various contributions of Swiss and Austrian physicians to Dutch colonial medicine and revealing how medical discourse in Switzerland and the Habsburg Empire was shaped by medical professionals 'in the colonial field', this study further elucidates the colonial entanglements of European regions that did not possess their own 'formal' colonial empires. On the other hand, by tracing the trajectories of physicians from the German States and Empire in Dutch imperial services before, during, and after the establishment of the German Colonial Empire, it further expands the spatial and temporal framework of conventional Dutch and German colonial history.

Second, this study contributes to a burgeoning strand of historiography exploring the role of empire in the self-perception and -fashioning of European, middle-class men. A key objective is to shed light on the ways in which joining 'foreign' imperial services could serve as a valuable means for physicians striving for upward social mobility, financial security, or the embodiment of hegemonic masculinity ideals. As various examples analyzed in the framework of this study demonstrate, Germanophone physicians serving the Dutch colonial health care institutions in Southeast Asia effectively leveraged the symbolic capital acquired through their colonial service to claim scientific authority in highly topical medical subfields of the late 19th century such as bacteriology or tropical medicine, or to launch a medical research career in Europe – and beyond. Others chose to disseminate their purported Far Eastern adventures through published memoirs or letters to their relatives 'at home', portraying themselves and adventurous, brave, and widely traveled men embodying ideals of imperial masculinity.

Third, the present thesis adds to recent approaches to the history of colonial medicine that question portrayals of the European medical sciences as an omnipotent 'tool of empire'. For

this purpose, it chooses to focus on ‘men on the spot’, i.e. medical practitioners employed with the colonial military and civil hospitals, to illuminate the various ways in which medical knowledge was shaped and contested in colonial contexts. This focus on medical practices ‘in the field’ rather than theories reveals that European physicians, when confronted with resistance from their patients, with the competition posed by indigenous medical treatments, or with previously unknown diseases and environmental conditions, struggled to claim a hegemonic position in the complex social formation in the Dutch East Indies. Moreover, it points to the ways in which late 19th century medical disciplines such as bacteriology or tropical medicine, that portrayed itself as ‘objective’ and ‘universal’, were deeply shaped by the interests of colonial institutions as well as colonial ideology, and racialized notions of the human body and its predisposition to disease continued to shape European medicine in the 20th century.

The first chapter expands on the transimperial labor markets for ‘foreign’ medical experts from Germanophone Europe in the 19th century. It demonstrates how the Dutch Colonial Army, holding a monopoly on the Dutch East Indies’ health care system, emerged as the most important employer for medically educated men from Germanophone Europe. The second chapter zooms in on the accounts of Germanophone physicians stationed in Aceh in northwestern Sumatra in the late 19th century. By closely analyzing their testimonies from an intersectional perspective, the chapter situates these ‘foreign’, middle-class, medically educated men in Dutch imperial services in the complex ‘imperial social formation’. The third chapter focusses on the ways in which Germanophone medical officers claimed scientific authority in late 19th century bacteriological discourse by pointing to their first-hand experience with diseases and patients in the tropics. The chapter highlights the deep contestedness and transimperial dissemination of colonial medical knowledge as much as it points to the significance of colonial contexts and ideology in the making of the ‘modern’ European medical sciences. The last chapter finally shifts the attention to German and Swiss physicians employed in the civil plantation hospitals in Sumatra’s ‘plantation belt’. The chapter points to the various biopolitical implications of ‘plantation hygiene’ and demonstrates how physicians capitalized on their experiences in Sumatra to forge scientific careers in Europe and beyond.

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Note on Spellings and Translations

The present study is based on sources in German, French, English, Dutch, and Malay. Acknowledging the border-crossing nature of the topic chosen, I decided to write exclusively in English – regrettably, still the hegemonic language in academic discourse – to open the discussion to scholars from the German-speaking world, the Netherlands, Indonesia, and beyond. All translations of source quotes are my own, except for the excerpts from Pavel Durdík’s memoirs, which were originally published in Czech but were accessible to me in an edited, French translation. Despite the inherent coloniality of name-giving in the Dutch East Indies, I have retained historical names and spellings from the colonial era (e.g., Soerakarta not Surakarta), while also including the modern-day names of individual places in parentheses.

Introduction: The Dutch Empire and Germanophone Europe

“It is remarkable”, Dutch officer Bloys van Treslong Prins greeted the Batavia branch of the German Society for Natural History and Anthropology of East Asia in his 1935 speech, “how many Germans one encounters when studying [...] the history of the Dutch East Indies. In early years, they were mostly adventurers and desperados, the same kind of people you find in the foreign legions today [...]. However, dating back to the 18th century, the very best of the best travelled from Germany to [...] this *Wunderland*;¹ thus there are quite a few Germans who owe a lot to the Indies, but there are also quite a few Germans to whom the Indies owe a lot.”²

“Physicians, clergymen, soldiers, merchants, planters, sailors, carters, musicians, cooks, butchers” – from the era of the Dutch East India Company (*Verenigde Oostindische Compagnie*; VOC), founded in 1602, to the late colonial period in the early 20th century “all kinds of people” found their way from German-speaking Europe to the Far East *Wunderland* in the Dutch East Indies.³ That they contributed in manifold ways manifold to the Dutch imperial project was a well-known fact among contemporaries like van Treslong Prins. What the Dutch officer, who held his speech in 1935, had overlooked, however, was that for a majority of the time-period he refers to (it reaches back to the 17th century) modern-day “Germany” did not exist. The individuals he described were born in Prussia, parts of which today belong to Poland, in the Habsburg Empire, the German-speaking parts of Bohemia or the (Old) Swiss Confederacy. What these historical actors had in common was not a national identity, but rather a common social, educational, or linguistic background. As pointed out by the historian Chen Tzoref-Ashkenazi, even contemporary sources did not always distinguish between German-speakers from the Holy Roman Empire, French Alsace, or the Old Swiss Confederacy, referring to all of them alike as “Germans”.⁴

From the 17th century onwards, the German-speaking parts of the Swiss Confederacy and Federal State, Habsburg Austria, and the German States and Empire were the most important areas for the Dutch Empire to recruit ‘foreign’ European soldiers, administrators, physicians, and scientists for colonial services. The global labor markets that connected non-Dutch Europeans with the Dutch Empire in Southeast Asia endured well into the 20th century,

¹ Emphasis added.

² Van Treslong Prins, Bloys: *Die Deutschen in Niederländisch-Indien. Vortrag, gehalten in der Ortsgruppe Batavia [der deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens] am 30. Sept. 1935*, Leipzig: Otto Harrassowitz 1937, p. 1.

³ Ibid.

⁴ Tzoref-Ashkenazi, Chen: *German Soldiers in Colonial India*, London: Routledge 2016, p. 13.

continuing to operate even after the respective regions transformed into ‘proper’ nation states. Surprisingly, it is only in recent years that historians have started to investigate these deep, historical entanglements between Germanophone Europe and the Dutch East Indies.⁵

One potential reason for this historiographical research lacuna can be traced to what the sociologists Ulrich Beck and Edgar Grande have termed “methodological nationalism”.⁶ To borrow the words of historian Sebastian Conrad, methodological nationalism resulted in the tendency that historians have inadvertently presented “the nation state [...] as the fundamental unit of investigation, a territorial entity that served as a ‘container’ for a society’.”⁷ Hence, by centering the nation state as their main spatial framework of historical analysis, historians have overlooked flows of people, money, or goods that transcended the clear-cut boundaries of individual political entities. The 19th century, when most modern nation states were originally founded was, however, simultaneously an “Age of Empire” as has been convincingly asserted by global historians such as Jürgen Osterhammel, Christopher Bayly, and others.⁸ This meant that also regions who had no formal colonial overseas possessions could not possibly disregard the existence of empires. Rather, these regions, too, became progressively enmeshed in the worldwide exchange of commodities and the intellectual and ideological currents shaped by the colonial exploration, exploitation, and conquer of Asia, the Americas, and the African continent. The European imperial powers, in turn, could not ignore countries such as Switzerland, the German States and Empire, the Habsburg Empire, or Scandinavia who ruled over no, late, or scattered colonies of their own, in particular the expertise and manpower these

⁵ The literature on the global labour markets connecting the Dutch Empire with Germanophone Europe is discussed in more detail in chapter 1. For now, see Schär, Bernhard C. (2019): ‘Introduction. The Dutch East Indies and Europe, ca. 1800-1930. An Empire of Demands and Opportunities’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 4–20; See Krauer, Philipp: *Colonial Mercenaries. Swiss Military Labour and the Dutch East Indies, c. 1848–1914*, PhD thesis, ETH Zurich, Zurich 2022; Van Lottum, Jelle/Lucassen, Jan/Heerma van Voss/Lex: ‘Sailors, National and International Labour Markets and National Identity, 1600-1850’, in: *Shipping and Economic Growth 1350-1850*, Leiden: Brill 2011, pp. 309–351; Reyes, Raquel: ‘German Apothecaries and Botanists in Early Modern Indonesia, the Philippines, and Japan’, in: Berghoff, Hartmut/Biess, Frank/Strasser, Ulrike (eds): *Explorations and Entanglements. Germans in Pacific Worlds from the Early Modern Period to World War I*, New York: Berghahn 2019, pp. 35–54; Van Gelder, Roelof: *Het Oost-Indisch Avontuur. Duitsers in Dienst van de VOC (1600-1800)*, Nijmegen: Sun 1997; Blussé, Leonard/De Moor, Jaap: *Een Zwitsers Leven in de Tropen. De Lotgevallen van Elie Ripon in Dienst van de VOC (1618-1626)*, Amsterdam: Prometheus 2016; Bossenbroek, Martin (1995): ‘The Living Tools of Empire: The Recruitment of European Soldiers for the Dutch Colonial Army, 1814–1909’, in: *The Journal of Imperial and Commonwealth History* 23, pp. 26–53.

⁶ See Beck, Ulrich/Grande Edgar (2010): ‘Jenseits des Methodologischen Nationalismus. Aussereuropäische und Europäische Variationen der Zweiten Moderne’, in: *Soziale Welt* 61 (3/4), pp. 187–216.

⁷ Conrad, Sebastian: *What is Global History?*, Princeton: Princeton University Press 2016, p. 3.

⁸ See Bayly, Christopher: *The Birth of the Modern World, 1789-1914. Global Connections and Comparisons*, Oxford: Blackwell 2004; Osterhammel, Jürgen: *Die Verwandlung der Welt. Eine Geschichte des 19. Jahrhunderts*, Munich: CH Beck 2020; Ballantyne, Tony/Burton, Antoinette: *Empires and the Reach of the Global 1870-1945*, Cambridge: The Belknap Press of Harvard University Press 2012. Also see Conrad, *What is Global History?*.

regions had to offer.⁹ This holds just as much true for European imperial powers such as the British, French, or Dutch as it does for the Ottoman or Japanese Empires.¹⁰ It is in light of the high presence of ‘foreign’ European experts in the British and French Empires that the historian David Arnold proposes the concept of “contingent colonialism”, or the “complementarity between what the imperial power could itself provide (not least in administrative infrastructure) and what outsiders could offer by way of additional skills, expertise and commodities [...]”¹¹

As has been alluded to above, soldiers, merchants, physicians, and scientists from Germanophone Europe were the largest group of European ‘foreigners’ in Dutch imperial services. In his exploratory study on German physicians serving the *Koninklijk Nederlandsch-Indisch Leger* (Dutch Colonial Army; KNIL) between 1814 and 1884, the historian Philipp Teichfischer has demonstrated that Germans provided the largest share of non-Dutch European medical experts in the KNIL’s medical corps, even outnumbering their Dutch colleagues at times.¹² The present study builds on Teichfischer’s preliminary findings by focusing on physicians from the German-speaking regions of the German States and Empire, Switzerland, and the Habsburg Empire in Dutch East Indies’ military and civil medical services between 1873 and the 1920s. In contrast to Teichfischer’s focus on ‘Germans’ in the KNIL, this study extends its scope significantly to encompass physicians from ‘Germanophone Europe’ in both the military and the civil health services. By doing so, it seeks to challenge the conventional

⁹ See Hennessey, John/Lahti, Janne (2023): ‘Nordics in Motion. Transimperial Mobilities and Global Experiences of Nordic Colonialism’, in: *The Journal of Imperial and Commonwealth History* 51 (3), pp. 409–420; Blaser, Claire Louise/Ligtenberg, Monique/Selander, Josephine (2021): ‘Introduction. Transimperial Webs of Knowledge at the Margins of Imperial Europe’, in: *Comparativ* 31 (5/6), pp. 527–539; Barth, Volker/Cvetkovski, Roland (eds): *Imperial Co-operation and Transfer, 1870-1930. Empires and Encounters*, London: Bloomsbury Publishing 2015.

¹⁰ For the Ottoman Empire, see, for example, Martykánová, Darina/Kocaman, Meltem: ‘A Land of Opportunities. Foreign Engineers in the Ottoman Empire’, in: Roldán, Concha/Brauer, Daniel/Rohbeck, Johannes (eds): *Philosophy of Globalization*, Berlin: De Gruyter 2018, pp. 237–252; Biçer-Deveci, Elife/Brandenburg, Ulrich (eds): ‘The Ottoman Empire and the “Germansphere” in the Age of Imperialism’, special issue in: *Comparativ* 32 (3-4), 2022; Isom-Verhaaren, Christine (2004): ‘Shifting Identities. Foreign State Servants in France and the Ottoman Empire’, in: *Journal of Early Modern History* 8 (1/2), pp. 109–134. For the Japanese Empire, see Kim, Hoi-eun (2015): ‘Made in Meiji Japan. German Expatriates, German-Educated Japanese Elites and the Construction of Germanness’, in: *Geschichte und Gesellschaft* 41 (2), pp. 288–320; Ravina, Mark: *To Stand with the Nations of the World. Japan's Meiji Restoration in World History*, New York: Oxford University Press, 2017; Gooday, Graeme/Low, Morris (1999): ‘Technology Transfer and Cultural Exchange. Western Scientists and Engineers Encounter Late Tokugawa and Meiji Japan’, in: *Osiris* 13 (1), pp. 99–128; Heé, Nadin: *Imperiales Wissen und koloniale Gewalt. Japans Herrschaft in Taiwan 1895-1945*, Frankfurt am Main: Campus 2012.

¹¹ Arnold, David (2015): ‘Globalization and Contingent Colonialism. Towards a Transnational History of “British” India’, in: *Journal of Colonialism and Colonial History* 16 (2), online, DOI: [10.1353/cch.2015.0019](https://doi.org/10.1353/cch.2015.0019). See also Manjapra, Kris: ‘The Semiperipheral Hand. Middle-Class Service Professionals of Imperial Capitalism’, in: Dejung, Christof/Motadel, David/Osterhammel, Jürgen (eds): *The Global Bourgeoisie. The Rise of the Middle Classes in the Age of Empire*, Princeton: Princeton University Press 2019, pp. 184–204.

¹² See Teichfischer, Philipp (2016): ‘Transnational Entanglements in Colonial Medicine. German Medical Practitioners as Members of the Health Service in the Dutch East Indies (1816-1884)’, in: *Histoire, Médecine et Santé* 10, pp. 63–78.

framework that centers the nation state as one of the prime analytical categories and, instead, underscores the importance of academic cultures, interpersonal connections, common languages and educational systems in connecting the German-speaking regions of Europe with the Dutch imperial project in Southeast Asia. Moreover, rather than ending the investigation in 1884, when the German Empire acquired its own colonial overseas possessions, this study chooses to cover the time period from the early 1870s to roughly the first decade after the First World War, attempting to identify ruptures and continuities in transimperial¹³ collaborations between Germanophone Europe and the Dutch Empire between the 19th and the early 20th centuries.

On a broader scale, the case of Germanophone physicians in the Dutch East Indies accentuates the “contingent” character of colonial rule in three distinct ways. First, the positioning of medicine at the crossroads of ‘practical’ and ‘theoretical’ knowledge emphasizes the role of ‘foreigners’ as more than mere “living tools of empire”;¹⁴ instead, they emerge as active agents deeply involved in the production and contestation of colonial knowledge. Germanophone physicians in Dutch services did not merely contribute their medical expertise to the imperial agenda aimed at safeguarding the lives of European settlers and soldiers; they also grappled with previously unencountered diseases, unfamiliar environments, and alternative epistemologies, which fundamentally reshaped and challenged their pre-existing understandings of the human body and its predispositions to disease as well as the alleged superiority of their own position as European medical practitioners. Second, and relatedly, ‘foreigners’ serving European empires often pursued their very own agenda in collaborating with colonial institutions. While the Dutch colonial government provided them with financial security, research infrastructures, or transport systems to further the production and application of ‘useful’ medical knowledge, many physicians from Germanophone Europe utilized their colonial experiences as a means of upward social mobility, to launch a scientific career back home, or to claim and perform hegemonic ideals of imperial, bourgeois masculinity. Third, in response to the meanwhile classic call articulated by Ann Laura Stoler and Frederick Cooper to “treat metropole and colony in a single analytic field”,¹⁵ the present study delves into the ways in which European regions with allegedly little to no involvement in European

¹³ The transimperial approach chosen for this study is discussed in the section on methodological reflections below.

¹⁴ The expression “Living Tools of Empire” was put forward by the Dutch historian Martin Bossenbroek to grasp the crucial role of (foreign) European soldiers for Dutch colonial warfare. See Bossenbroek, ‘The Living Tools of Empire’.

¹⁵ Stoler, Ann Laura/Cooper, Frederick: ‘Between Metropole and Colony. Rethinking a Research Agenda’, in: idem (eds): *Tensions of Empire. Colonial Cultures in a Bourgeois World*, Berkeley: University of California Press 1997, pp. 1–56, here p. 4.

colonialism were deeply shaped by colonial cultures and patterns of thought and vice-versa. Tracing the careers of Austrian, German, and Swiss physicians between the Dutch East Indies, the Netherlands, and their respective regions of origin allows to explore the dissemination, circulation, reception, appropriation, and transformation of colonial (medical) knowledge in Germanophone Europe and beyond. More specifically, their case further sheds light on the ways in which the seemingly ‘universal’ and ‘objective’ laboratory, (bio)medical sciences emerging in the German-speaking academic discourse at the turn of the 20th century shaped and were shaped by colonial research contexts and the racialized ideologies underpinning colonial rule.

State of Research

By tracing the histories of German-speaking Austrian, Swiss, and German physicians in Dutch colonial medical services in Southeast Asia in the late 19th and early 20th century, this study contributes to three distinct strands of research: First, the history of ‘colonialism without colonies’ or ‘colonialism from the margins’, second, global and transnational approaches to German and Dutch colonial history, and third the history of colonial medicine. In what follows, I will briefly outline the state of research in these respective historical sub-fields and highlight the original contribution of my own research within them.

‘Colonialism without Colonies’

In recent years, a large and growing number of historians have employed the expression ‘colonialism without colonies’ to explore the colonial entanglements of European regions who at no point in their history ruled over ‘formal’ colonial overseas territories of their own.¹⁶ On the one hand, scholars from these regions have increasingly incorporated analytical viewpoints from Postcolonial Studies, aiming to challenge the phenomenon of ‘colonial amnesia’ or ‘colonial aphasia’¹⁷ that lingers in modern-day European nation states which, within their national cultures of remembrance, are thought to lack a colonial history. A specific emphasis has centered on investigating the contemporary continuities of colonialism, manifested in the form of everyday racism, exclusionary border regimes, and exotified images of people of color in educational materials, advertising and public discourse.¹⁸ On the other hand, historians have

¹⁶ See Purtschert, Patricia/Falk, Francesca/Lüthi, Barbara (2016): ‘Switzerland and “Colonialism without Colonies”. Reflections on the Status of Colonial Outsiders’, in: *International Journal of Postcolonial Studies* 18 (2), pp. 286–302; Delfs, Tobias (2022): ‘Kolonialismus ohne Kolonien? Deutsche Naturforscher im Südasien des 18. und 19. Jahrhunderts’, in: *Südasien Chronik* 12, pp. 389–407; Lüthi, Barbara/Falk, Francesca/Purtschert, Patricia (2016): ‘Colonialism without Colonies. Examining Blank Spaces in Colonial Studies’, in: *National Identities* 18 (1), pp. 1–9; Fur, Gunlög: ‘Colonialism and Swedish History. Unthinkable Connections?’, in: Naum, M./Nordin, J. (eds): *Scandinavian Colonialism and the Rise of Modernity. Contributions to Global Historical Archaeology*, New York: Springer 2013, pp. 17–36; Telesko, Werner: ‘Colonialism without Colonies. The Civilizing Missions in the Habsburg Empire’, in: Falser, Michael (ed): *Cultural Heritage as Civilizing Mission. From Decay to Recovery*, Cham: Springer 2015, pp. 35–48; Purtschert, Patricia/Lüthi, Barbara/Falk, Francesca (eds): *Postkoloniale Schweiz. Formen und Folgen eines Kolonialismus ohne Kolonien*, Bielefeld: Transcript 2012.

¹⁷ For a theoretical discussion of ‘colonial aphasia’, see Stoler, Ann Laura (2011): ‘Colonial Aphasia. Race and Disabled Histories in France’, in: *Public Culture* 23 (1), pp. 121–156. See also the same author’s *Duress. Imperial Durabilities in our Times*, Durham: Duke University Press 2016, chapter 4.

¹⁸ See, for example, Dos Santos Pinto, Jovita et al. (ed): *Un/doing Race. Rassifizierung in der Schweiz*, Zürich: Seismo 2022; Purtschert/Lüthi/Falk (eds), *Postkoloniale Schweiz*; Vuorela, Ulla: ‘Colonial Complicity. The “Postcolonial” in a Nordic Context’, in: Keskinen, Suvi et al. (eds): *Complying with Colonialism. Gender, Race and Ethnicity in the Nordic Region*, London: Routledge 2009, pp. 19–33; Loftsdóttir, Kristín (2015): ‘The Exotic

also referred to colonialism ‘from’, ‘in’, or ‘at the margins’ in “trying to come to terms with the different ways of participating in, profiting from and supporting colonial endeavors by countries that were not formally involved in colonial expansion.”¹⁹ By understanding colonialism beyond its ‘bureaucratic’ dimension – as in the establishment of a government and administration with a distinct set of laws and policies – scholars have demonstrated how merchants, missionaries, scientists, or soldiers from regions without colonial overseas possessions of their own were implicated in the imperial projects of neighboring European countries. Pioneering research in this field has mainly focused on the colonial entanglements of Swiss and Scandinavian/Nordic actors and institutions so far.²⁰

In a recently published special issue in the *Journal of Imperial and Commonwealth History* on “Nordic Colonialism”, the historians John L. Hennessey and Janne Lahti argue that Nordics “often had access, and could frequently rely on cultural proximity, perceived racial membership, and personal connections to colonizers from the imperial metropole to actively engage with colonial spaces and projects, make claims to authority, and reap personal benefits” which allowed them to “actively par[take] in inter-imperial circulations and transfers of peoples, commodities and knowledge.”²¹ The individual contributions zoom in on case studies of Icelandic, Norwegian, Danish, Swedish, and Finnish settlers, missionaries, merchants, and slave traders, pointing to the various opportunities and frictions these ‘colonial outsiders’ encountered when moving across and between ‘foreign’ empires.²² In a similar vein, scholars investigating Switzerland’s colonial past have pointed to the manifold ways Swiss individuals and institutions collaborated with and profited from colonialism. While earlier research has

North. Gender, Nation Branding and Post-colonialism in Iceland’, in: *NORA – Nordic Journal of Feminist and Gender Research* 23 (4), pp. 246–260; Jain, Rohit: ‘Bollywood, Chicken Curry – and IT. The Public Spectacle of the Indian Exotic, and Postcolonial Anxieties in Switzerland’, in: Purtschert, Patricia/Fischer-Tiné, Harald (eds): *Colonial Switzerland. Rethinking Colonialism from the Margins*, Basingstoke: Palgrave Macmillan 2015, pp. 133–154.

¹⁹ Purtschert, Patricia/Fischer-Tiné, Harald: ‘Introduction: The End of Innocence. Debating Colonialism in Switzerland’, in: idem (eds), *Colonial Switzerland*, pp. 1–26, here p. 7

²⁰ See Røge, Pernille (2021): ‘Colonialism and Abolitionism from the Margins of European Empires. Paul Erdmann Isert, Carl Bernhard Wadström, and the Structures of Transimperial Knowledge Production, c. 1780-1800’, in: *Comparativ* 31 (5/6), pp. 540–554; Purtschert/Fischer-Tiné (eds): *Colonial Switzerland*; Fur, Gunlög: *Colonialism in the Margins. Cultural Encounters in New Sweden and Lapland*, Leiden: Brill 2006; Hägerdal, Hans (2020): ‘On the Margins of Colonialism. Contact Zones in the Aru Islands’, in: *The European Legacy* 25 (5), pp. 554–571; Loftsdóttir, Kristín (2012): ‘Colonialism at the Margins. Politics of Difference in Europe as seen through two Icelandic Crises’, in: *Global Studies in Culture and Power* 19 (5), pp. 597–615; Blaser/Ligtenberg/Selander, ‘Introduction’; Schär, Bernhard C./Toivanen, Mikko (eds): *Integration and Collaborative Imperialism in Modern Europe. At the Margins of Empire, 1800-1950*, London: Bloomsbury, forthcoming 2024.

²¹ Hennessey/Lahti, ‘Nordics in Motion’, pp. 410f.

²² See contributions in: Hennessey, John L./Lathi, Janne (2023): ‘Nordics in Motion: Transimperial Spaces and Global Experiences of Nordic Colonialism’, special issue in: *The Journal of Imperial and Commonwealth History* 51 (3). Also see the contributions in Högland, Johan/Andersson Burnett, Linda (2019): ‘Nordic Colonialisms’, special issue of: *Scandinavian Studies* 91 (1/2).

mainly focused on Swiss overseas emigration and Swiss involvements in the transatlantic slave trade,²³ scholarship emerging over the past decade has yielded a growing number of promising case studies on Swiss missionaries, scientists, merchants, and mercenaries collaborating with ‘foreign’ European empires.²⁴ Others have focused on the ways in which individuals and institutions within Switzerland profited financially, culturally, or scientifically from these global entanglements, even in cases where they did not directly cultivate their own colonial overseas connections.²⁵ This thesis is particularly indebted to the pioneering work of Philipp Krauer, who shed light on the history of the roughly 5800 Swiss mercenaries joining the Dutch Colonial Army between 1848 and 1914.²⁶ Considering that most physicians from Germanophone Europe initially sought employment with the Dutch Colonial Army when travelling to the Dutch East Indies, his findings, support and guidance has been of invaluable importance.

More recently, the analytical frameworks developed to study the colonial pasts of Switzerland and various Scandinavian countries have been applied to an expanding geographic scope, encompassing an increasing number of European regions. Historians of ‘colonial Habsburg’,²⁷ for example, have touched upon the short-lived attempts of the Habsburg monarchy to colonize the Nicobar Islands in the 18th and 19th century,²⁸ the “symbolic

²³ See Thomas, David/Emad, Bouda/Schaufelbuehl, Jannick: *La Suisse et l’Esclavage des Noirs*, Lausanne: Ed. Antipodes 2005; Ziegler, Beatrice: *Schweizer statt Sklaven. Schweizerische Auswanderer in den Kaffee-Plantagen von Sao Paulo (1852-1866)*, Stuttgart: Steiner 1985; Siegrist, Stefan: *Schweizer im Fernen Osten. Viele Loyalitäten, eine Identität*, Munich: Iudicium 2011.

²⁴ See, for example, Pfäffli, Lea: *Arktisches Wissen. Schweizer Expeditionen und dänischer Kolonialhandel in Grönland (1906-1913)*, Frankfurt am Main: Campus 2021; Pavillon, Olivier: *Des Suisses au Coer de la Traite Négrière. De Marseille à l’Île de France, d’Amsterdam aux Guyanes (1770-1840)*, Lausanne : Ed. Antipodes 2017; Schär, Bernhard C.: *Tropenliebe. Schweizer Naturforscher und niederländischer Imperialismus in Südostasien um 1900*, Frankfurt am Main: Campus 2015; Harries, Patrick: *Butterflies & Barbarians. Swiss Missionaries & Systems of Knowledge in South-East Africa*, Oxford: J. Currey 2007; Zangger, Andreas: *Koloniale Schweiz. Ein Stück Globalgeschichte zwischen Europa und Südostasien (1860-1930)*, Bielefeld: Transcript 2014; Dejung, Christof: *Die Fäden des globalen Marktes. Eine Sozial- und Kulturgeschichte des Welthandels am Beispiel der Handelsfirma Gebrüder Volkart 1851-1999*, Köln: Böhlau 2013; Veyrassat, Béatrice: *De l’Attirance é l’Expérience de l’Inde. Un Vaudois à la Marge du Colonialisme Anglais, Antoine-Louis-Henri Polier (1741-1795)*, Neuchâtel : Ed. Livreo-Alphil 2022; Schär, Bernhard C. (2019): ‘From Batticaloa via Basel to Berlin. Transimperial Science in Ceylon and Beyond around 1900’, in: *The Journal of Imperial and Commonwealth History* 48 (2), pp. 230–262.

²⁵ See Krauer, Philipp/Schär, Bernhard C. (2023): ‘Welfare for War Veterans. How the Dutch Empire Provided for European Mercenary Families, c. 1850 to 1914’, in: *Itinerario* 1 (17), online, DOI: 10.1017/S0165115323000141; Blaser, Claire Louise (2021): ‘Sanskrit Roots in the Swiss *Idiotikon*. Early Indology in Switzerland between National Identity Formation and European Imperial Imaginaries’, in: *Comparativ* 31 (5-6), pp. 591–611.

²⁶ See Krauer, *Colonial Mercenaries*.

²⁷ For the state-of-the-art of current debates, see Rupnow, Dirk/Singerton, Jonathan: ‘Habsburg Colonial Redux. Reconsidering Colonialism and Postcolonialism in Habsburg/Austrian History’, in: *Journal of Austrian Studies* 56 (2), pp. 9–20.

²⁸ See Loidl, Simon: *“Europa ist zu enge geworden” Kolonialpropaganda in Österreich-Ungarn 1885-1918*, Wien: Promedia Verlag 2017. ‘For Austrian ‘colonial fantasies’ see also Bach, Ulrich: *Tropics of Vienna. Colonial Utopias of the Habsburg Empire 1870-1900*, New York: Berghahn 2016.

colonies” established in China in the early 20th century,²⁹ or the ‘informal’ colonization efforts driven by Austrian-Habsburgian and Austrian-Hungarian *emigrés* and trading companies.³⁰ Others have pointed to research expeditions to colonized territories under the patronage of the Habsburg monarchy,³¹ or published case studies on Austrian travel writers documenting their journeys through various European empires.³² Moreover, particular attention has been directed towards the question as to what extent the 19th and 20th century Habsburg Empire can be regarded as an example of inner-European colonialism.³³ In close connection to this, an emerging yet promising line of research has begun to explore the colonial histories of Eastern Europe and the Balkans. Historians have, for example, investigated to what extent regions in the East of Europe were themselves ‘colonized’, in particular in the context of the Third Reich’s Eastern expansion.³⁴ Moreover, a growing number of case studies have traced Eastern European engagements with imperial overseas projects. Marta Grzechnik, for example, has unearthed the aspirations of the Polish Maritime and Colonial League to acquire colonies in Africa.³⁵ Others

²⁹ See Falser, Michael: *Habsburg going Global. The Austro-Hungarian Concession in Tientsin/Tianjin in China (1901-1917)*, Vienna: Austrian Academy of Sciences Press 2022.

³⁰ See Sauer, Walter (2012): ‘Habsburg Colonial. Austria-Hungary’s Role in European Overseas Expansion Reconsidered’, in: *Austrian Studies* 20, pp. 5–23; Loidl, Simon (2012): ‘Colonialism through Emigration. Publications and Activities of the Österreich-Ungarische Kolonialgesellschaft (1894-1918)’, in: *Austrian Studies* 20, pp. 161–175.

³¹ See Morrison, Heather (2017): ‘Open Competition in Botany and Diplomacy. The Habsburg Expedition of 1783’, in: *Studies in Eighteenth-Century Culture* 46, pp. 107–119.

³² Feichtinger Johannes/Heiss Johann: ‘Interactive Knowledge-Making. How and Why Nineteenth-Century Austrian Scientific Travelers in Asia and Africa Overcame Cultural Differences’, in: Feichtinger J., Bhatti A., Hülmbauer C. (eds) *How to Write the Global History of Knowledge-Making* Springer: Cham, 2020, pp. 45–69.

³³ See contributions in Feichtinger, Johannes/Prutsch, Ursula/Csáky, Moritz (eds): *Habsburg postcolonial. Machtstrukturen und kollektives Gedächtnis*, Innsbruck: StudienVerlag 2003 as well as Telesko, ‘The Civilizing Missions in the Habsburg Empire’; Ruthenr, Clemens (2002): ‘Central Europe goes Postcolonial. New Approaches to the Habsburg Empire around 1900’, in: *Cultural Studies* 16 (6), pp. 877–883; Kasumović, Amila (2023): ‘Understanding Colonial Archives. Reflections on Records from Habsburg Times in the Archives of Bosnia and Herzegovina’, in: *Comparative Southeast European Studies* 70 (4), online, DOI: <https://doi.org/10.1515/soeu-2022-0038>.

³⁴ See Nelson, Robert L. (ed): *Germans, Poland, and Colonial Expansion to the East. 1850 Through the Present*, New York: Palgrave Macmillan 2009; Njaradi, Dunja (2013): ‘The Balkan Studies. History, Post-Colonialism and Critical Regionalism’, in: *Journal of Contemporary Central and Eastern Europe* 20 (2/3), pp. 185–201; Bernhard, Patrick (2016): ‘Hitler’s Africa in the East. Italian Colonialism as a Model for German Planning in Eastern Europe’, in: *Journal of Contemporary History* 51 (1), pp. 61–90; Guettel, Jens-Uwe (2013): ‘The US Frontier as Rationale for the Nazi East? Settler Colonialism and Genocide in Nazi-occupied Eastern Europe and the American West’, in: *Journal of Genocide Research* 15 (4), pp. 401–419; Boatcă, Manuela: ‘Die östlichen Ränder des Empire. Kolonialität in Rumänien’, in: Conrad, Sebastian/Randeria, Shalini/Römhild, Regina (eds): *Jenseits des Eurozentrismus. Postkoloniale Perspektiven in den Geschichts- und Kulturwissenschaften*, Frankfurt am Main: Campus 2002, pp. 322–344; Madley, Benjamin (2005): ‘From Africa to Auschwitz. How German South West Africa Incubated Ideas and Methods Adopted and Developed by the Nazis in Eastern Europe’, in: *European History Quarterly* 35 (3), pp. 429–464.

³⁵ See Grzechnik, Marta (2020): “‘Ad Maiorem Poloniae Gloriam!’ Polish Inter-colonial Encounters in Africa in the Interwar Period”, in: *The Journal of Imperial and Commonwealth History* 48 (5), pp. 826–845.

have analyzed the histories of Polish and Serbian travelers or soldiers moving through ‘foreign’ empires,³⁶ or the role of zoological gardens for Eastern European “colonial encounters”.³⁷

By centering its attention on ‘foreigners’ hailing from regions with no or late³⁸ colonial overseas territories of their own in Dutch imperial services, this study contributes to the burgeoning strand of research that seeks to reveal colonial entanglements between the ‘margins’ of Europe and the ‘formal’, ‘hegemonic’ European empires. Unlike the prevalent approach adopted by most existing scholarship, which primarily concentrates on a singular European region or nation-state deemed ‘marginal’ by historians of colonialism, the present thesis takes a broader perspective, delving into the experiences of ‘foreigners’ with different national origins (i.e., the German States and Empire, Switzerland, and the Habsburg Empire) within the same imperial configuration. Through this approach, I hope to extend the boundaries of prior research by comparing and evaluating the significance of national and regional background in transimperial settings. Moreover, I wish to illuminate the transimperial interconnections between distinct regions in Germanophone Europe, the Dutch East Indies, and the Netherlands that have remained largely unexplored in historiography to this day. Lastly, the fact that most actors studied in the existing scholarship on ‘colonialism without colonies’ were comparatively mobile, (excluding colonial mercenaries) mostly middle-class, and male has largely been taken for granted so far. With a few important exceptions,³⁹ most studies have so far not explicitly addressed the inherently gendered and class-related nature of such colonial collaborations ‘from the margins.’ A further contribution of this study is thus to shed new light on the role transimperial careering in shaping (imperial) masculinities as well as their place in the emerging ‘Global Bourgeoisie’ of the 19th century.⁴⁰

³⁶ See Ewertowski, Tomasz (2022): ‘Javanese Mosaic. Three Polish Representations of Java from the Second Half of the 19th Century’, in: *Indonesia and the Malay World* 50 (147), pp. 211–233; Wood, Nathaniel D. (2022): ‘Vagabond Tourism and a Non-Colonial European Gaze. Kazimierz Nowak’s Bicycle Journey Across Africa, 1931-1936’, in: *Journal of Tourism History* 14 (3), pp. 291–314.

³⁷ See Szczygielska, Marianna (2020): ‘Elephant Empire. Zoos and Colonial Encounters in Eastern Europe’, in: *Cultural Studies* 34 (5), pp. 789–810.

³⁸ The German Empire is a ‘special’ case as it did exercise power over colonial overseas territories between 1884 and 1914. The German case as well as my reasons to include it in discussions surrounding ‘colonialism without colonies’ is discussed in more detail below.

³⁹ See Purtschert, Patricia: *Kolonialität und Geschlecht im 20. Jahrhundert. Eine Geschichte der weissen Schweiz*, Bielefeld: Transcript 2019; Loftsdóttir, ‘The Exotic North’; Keskinen et al. (eds) *Complying with Colonialism*.

⁴⁰ For the rise of the bourgeoisie and its connections to empire see Dejung/Motadel/Osterhammel (eds), *The Global Bourgeoisie*. For “imperial careering” see in Lambert, David/Lester, Alan (eds): *Colonial Lives Across the British Empire. Imperial Careering in the Long Nineteenth Century*, Cambridge: Cambridge University Press 2011.

Global Approaches to German and Dutch Colonial History

By including individuals from the German-speaking parts of the German States and Empire in Dutch imperial services, the present study also contributes to recent approaches to German and Dutch colonial history.

First, it is important to explicitly address that, other than Habsburg Austria and Switzerland, the German Empire did indeed rule over formal, colonial overseas territories in Africa and the Pacific from 1884 to 1914. However, due to the short-lived character and comparatively small scope of the German Colonial Empire, colonialism has for a long time appeared as a mere ‘footnote’ in German history at large. “German national history” has thus “to grapple with its own forms of ‘colonial aphasia’.”⁴¹ In the past two decades, quite a number of historians have started to bridge this gap in German history. A flourishing body of historiography has uncovered the racist, violent and exploitative nature of German colonial rule that was unleashed, for example, in the genocide of the Herero and Nama in German South West Africa (Namibia) between 1904 and 1908.⁴² More recently, scholars such as Sebastian Conrad, Jürgen Osterhammel, and others have emphasized the importance of comprehending German colonial history within a wider global context.⁴³ This approach, inspired by Global History and Postcolonial Studies, opened a variety of new themes and avenues to the historiographical reappraisal of Germany’s colonial past. Historians have shed light on various forms of indigenous agency and resistance that German colonizers encountered.⁴⁴ Others have pointed

⁴¹ Blaser/Ligtenberg/Selander, ‘Introduction’, p. 531. For the lack of historiographical reappraisal of German colonial history, see also Eckert, Andreas/Wirz, Albert: ‘Wir nicht, die Anderen auch. Deutschland und der Kolonialismus’, in: Conrad/Randeria/Römhild (eds), *Jenseits des Eurozentrismus*, pp. 506–525; Perraudin, Michael/Zimmerer, Jürgen: ‘Introduction. German Colonialism and National Identity’, in: idem (eds): *German Colonialism and National Identity*, New York: Routledge 2011, pp. 1–8 and Albrecht, Monika: ‘(Post-) Colonial Amnesia? German Debates on Colonialism and Decolonization in the Post-War Era’, in: Perraudin/Zimmerer, *German Colonialism*, pp. 187–196.

⁴² Good overviews of German colonial history are Conrad, Sebastian: *Deutsche Kolonialgeschichte*, Munich: CH Beck 2008; Zimmerer, Jürgen: *German Rule, African Subjects. State Aspirations and the Reality of Power in Colonial Namibia*, New York: Berghahn 2021; Speitkamp, Winfried: *Deutsche Kolonialgeschichte*, Ditzingen: Reclam 2021; Jefferies, Matthew: *Contesting the German Empire, 1871-1918*, Malden: Blackwell Publishing 2008; Van Laak, Dirk: *Über alles in der Welt. Deutscher Imperialismus im 19. und 20. Jahrhundert*, Munich: CH Beck 2005; Hiery, Hermann Joseph (ed): *Die deutsche Südsee 1884-1914. Ein Handbuch*, Paderborn: F. Schöningh 2001.

⁴³ See Conrad, Sebastian: *Globalisation and the Nation in Imperial Germany*, Cambridge: Cambridge University Press 2006; Conrad, Sebastian/Osterhammel, Jürgen (eds): *Das Kaiserreich transnational. Deutschland in der Welt 1871-1914*, Göttingen: Vandenhoeck & Ruprecht 2004; Osterhammel, *Die Verwandlung der Welt*; Naranch, Bradley/Eley, Geoff (eds): *German Colonialism in a Global Age*, Durham: Duke University Press 2014.

⁴⁴ See Greiner, Andras: *Human Portage and Colonial State Formation in German East Africa, 1880s-1914. Tensions of Transport*, Cham: Palgrave Macmillan 2022; Walther, Daniel J.: *Sex and Control. Venereal Disease, Colonial Physicians, and Indigenous Agency in German Colonialism, 1884-1914*, New York: Berghahn 2015; Berman, Nina/Mühlhahn, Klaus/Nganang, Patrice (eds): *German Colonialism Revisited. African, Asian, and Oceanic Experiences*, Ann Arbor: The University of Michigan Press 2014; Apoh, Wazi/Lundt, Beat (eds):

to the ways in which German trading companies were embedded in global networks of exchange of colonial goods and commodities or served as suppliers of people and animals for human zoos and zoological gardens; thereby connecting German consumers ‘at home’ with colonial modes of economic exploitation and the racist ideologies justifying colonial rule.⁴⁵ Scholars have further explored these cultural dimensions of German colonialism by including perspectives from human animal history or gender studies into their analysis,⁴⁶ or by discussing the provenance of human remains, looted art and so-called ethnographica located in German museums.⁴⁷

Despite these recent efforts to globalize and pluralize German colonial history, Sebastian Conrad has observed that a majority of historiographies on Germany’s colonial past remain “wedded to a national-history paradigm, hardly cognizant of other empires and of the broader world around them.”⁴⁸ In other words, while the themes and perspectives within German colonial history have considerably expanded, the majority of studies still find themselves confined within ‘national containers’, predominantly concentrating on German actors,

Germany and Its West African Colonies. “Excavations” of German Colonialism in Post-Colonial Times, Zurich: Lit Verlag 2013; Zimmerman, Andrew (2006): “‘What do you Really Want in German East Africa, Herr Professor?’” Counterinsurgency and the Science Effect in Colonial Tanzania’, in: *Comparative Studies in Societies and History* 48 (2), pp. 419–461; Zimmermann, Andrew: ‘A German Alabama in Africa. The Tuskegee Expedition to German Togo and the Transnational Origins of West African Cotton Growers’, in: *The American Historical Review* 110 (5), pp. 1362–1398.

⁴⁵ See Todzi, Kim Sebastian: *Unternehmen Weltaneignung. Der Woermann-Konzern und der deutsche Kolonialismus 1837-1916*, Göttingen: Wallstein Verlag 2023; Oestermann, Tristan: *Kautschuk und Arbeit in Kamerun unter deutscher Kolonialherrschaft 1880-1913*, Göttingen: Böhlau 2022; Ames, Eric: *Carl Hagenbeck’s Empire of Entertainments*, Seattle: University of Washington Press 2008; Ciarlo, David: *Advertising Empire. Race and Visual Culture in Imperial Germany*, Cambridge: Harvard University Press 2011; Honold, Alexander/Simons, Oliver (eds): *Kolonialismus als Kultur. Literatur, Medien, Wissenschaft in der deutschen Gründerzeit des Fremden*, Basel: A. Franke Verlag 2002.

⁴⁶ See Dietrich, Anette: *Weisse Weiblichkeiten. Konstruktionen von “Rasse” und Geschlecht im deutschen Kolonialismus*, Bielefeld: Transcript 2007; Walgenbach, Katharina: “Die weisse Frau als Trägerin deutscher Kultur”. *Koloniale Diskurse über Geschlecht, “Rasse” und Klasse im Kaiserreich*, Frankfurt am Main: Campus 2005; Bischoff, Eva: *Kannibale-Werden. Eine postkoloniale Geschichte deutscher Männlichkeit um 1900*, Bielefeld: Transcript 2011; Gissibl, Bernhard (2010): ‘Das kolonisierte Tier. Zur Ökologie der Kontaktzonen des deutschen Kolonialismus’, in: *Werkstatt Geschichte* 56, pp. 7–28; Krüger, Gesine: ‘Das koloniale Tier. Natur – Kultur – Geschichte’, in: Forrer, Thomas/Linke, Angelika (eds): *Wo ist Kultur? Perspektiven der Kulturanalyse*, Zürich: vdf Hochschulverlag 2013, pp. 73–94.

⁴⁷ See Penny, H. Glenn: *Objects of Culture. Ethnology and Ethnographic Museums in Imperial Germany*, Chapel Hill: The University of North Carolina Press 2010; Zimmerman, Andrew: *Anthropology and Antihumanism in Imperial Germany*, Chicago: The University of Chicago Press 2001. For current debates on how to deal with such material legacies, see Garsha, Jeeremiah J. (2020): ‘Expanding *Vergangenheitsbewältigung*? German Repatriation of Colonial Artefacts and Human Remains’, in: *Journal of Genocide Research*, 22 (1), pp. 46–61; Krüger, Gesine: ‘Wem gehört Afrikas Kulturerbe? Die Rückgabe der Benin-Bronzen und die Zukunft des Museums’, in: *Geschichte der Gegenwart*, 17 May 2023, online: <https://geschichtedergewegenwart.ch/wem-gehört-afrikas-kulturerbe-die-rueckgabe-der-benin-bronzen-und-die-zukunft-des-museums/> [accessed: 31.08.2023]; Habermas, Rebekka: ‘Restitutionsdebatten, koloniale Aphasie und die Frage, was Europa ausmacht’, in: *Bundeszentrale Politische Bildung*, 27.09.2019, online: <https://www.bpb.de/shop/zeitschriften/apuz/297595/restitutionsdebatten-koloniale-aphasie-und-die-frage-was-europa-ausmacht/> [accessed: 31.08.2023].

⁴⁸ See Conrad, Sebastian (2013): ‘Rethinking German Colonialism in a Global Age’, in: *The Journal of Imperial and Commonwealth History* 41 (4), pp. 543–566, here p. 544.

institutions, and sites. Consequently, scholars have started to ‘transnationalize’ German colonial historiography by exploring German colonial entanglements before the German Empire formally entered the colonial race in 1884. Earlier studies have already established terms such as “proto-colonialism” or “colonial fantasies” to account for 18th and early 19th century ‘imaginary’ encounters of Germans with colonial patterns of thought or expressions of colonial ambitions.⁴⁹ More recently, an emerging and promising body of research has revealed that German colonialism *avant la lettre* extended beyond ‘mere’ fantasies, highlighting the strong German presence in ‘foreign’ imperial settings from the 17th century onwards. Historians have, for example, investigated early German involvements in transatlantic slavery.⁵⁰ In his pioneering study, Chen Tzoref-Ahskhenazi has traced the history of two German regiments serving the British East India Company (EIC) between 1782 and 1781.⁵¹ German scientists and intellectuals serving the British Empire in the early 19th century, as we learn from Kris Majapra, laid ground for more than a century of Indo-German intellectual exchanges.⁵² German botanists and naturalists were highly present in the Pacific World around 1800, as various contributions in the edited volume *Explorations and Entanglements* demonstrate.⁵³ The high esteem of German scientific expertise also prompted the British Empire to enlist German forestry experts into the Indian Forest service,⁵⁴ or the EIC to support the survey expeditions of the German Schlagintweit brothers through South and Central Asia in the 1850s.⁵⁵ What all of

⁴⁹ See Zantop, Susanne: *Colonial Fantasies. Conquest, Family, and Nation in Precolonial Germany, 1770-1870*, Durham: Duke University Press 1997; Noyes, John (2006): ‘Goethe on Cosmopolitanism and Colonialism. Bildung and the Dialectic of Critical Mobility’, in: *Eighteenth-Century Studies* 39 (4), pp. 443–462; Conrad, Sebastian: *German Colonialism. A Short History*, Cambridge: Cambridge University Press 2011, pp. 15–20.

⁵⁰ See Roth, Julia (2017): ‘Sugar and Slaves. The Augsburg Welser as Conquerors of America and Colonial Foundational Myths’, in: *Atlantic Studies* 14 (4), pp. 436–456 and Raphael-Hernandez, Heike (2017): ‘The Right to Freedom. Eighteenth-century Slave Resistance and Early Moravian Missions in the Danish West Indies and Dutch Suriname’, in: *ibid.*, pp. 457–475.

⁵¹ See Tzoref-Ashkenazi, *German Soldiers in Colonial India*. For German soldiers and officers in ‘foreign’ imperial services, also see Kamissek, Christoph (2016): ‘German Imperialism before the German Empire. Russo-Prussian Military Expeditions to the Caucasus before 1871 and the Continuity of German Colonialism’, in: *Journal of Modern European History* 14 (2), pp. 183–201. That high ranking German mercenary officers could make a lasting impact is evident from Rothermund, Dietmar: ‘August Schlegel’s Military Geography of the Carnatic’, in: Ahuja, Ravi/Füchsle, Christoph Martin (eds): *A Great War in South India. German Accounts of the Anglo-Mysore Wars, 1766-1799*, Berlin: De Gruyter 2021, pp. 79–92. Besides, there is an ongoing research project on “Soldiering for a Living: German Soldiers in Africa and India, c. 1750-1800” conducted by Michael Mann at HU Berlin.

⁵² See Manjapra, Kris: *Age of Entanglement. German and Indian Intellectuals across Empire*, Cambridge: Harvard University Press 2014, pp. 17–40. For elite German migration to British India, see also Panay, Panikos: *The Germans in India. Elite European Migrants in the British Empire*, Manchester: Manchester University Press 2017.

⁵³ See Berghoff/Biess/Strasser (eds), *Explorations and Entanglements*, in particular the contributions by Raquel A. G. Reyes, Ulrike Strasse, and Andreas Daum.

⁵⁴ See Kirchberger, Ulrike: ‘Between Transimperial Networking and National Antagonism. German Scientists in the British Empire During the Long Nineteenth Century’, in: Goss, Andrew (ed): *The Routledge Handbook of Science and Empire*, London: Routledge 2021, pp. 138–147; *idem* (2001): ‘German Scientists in the Indian Forest Service. A German Contribution to the Raj?’, in: *The Journal of Imperial and Commonwealth History* 29 (2), pp. 1–26.

⁵⁵ Von Brescius, Moritz: *German Science in the Age of Empire. Enterprise, Opportunity and the Schlagintweit Brothers*, Cambridge: Cambridge University Press 2019.

these contributions have in common is that they significantly expand the temporal extent of German colonial history. At the same time, with only a few exceptions,⁵⁶ most of these studies focus on German entanglements with the British Empire, thereby reproducing the Anglo-centric tendencies in Global History at large. The present study thus contributes both to the temporal and spatial extension of German colonial history by including the Dutch East Indies as a space of German imperial entanglements both before, during, and after the German Empire conquered vast regions in Africa and the Pacific.

By doing so, I also aim to gain fresh insights on Dutch colonial history. While Postcolonial and Global History approaches have been prominent in British and American academic discourse since the late 1980s, these fields have only recently begun to play a significant role in discussions related to historiographic scholarship on the Dutch Empire. According to the historian Remco Raben “Dutch colonial history writing has retained a thoroughly empiricist and ‘unproblematic’ attitude and fosters a strong skepticism towards postcolonial theorization.”⁵⁷ Raben explains this by stating that “‘Empire’ was more central in the making of Britain than it ever was in the Netherlands”, and thus never formed an integral part of Dutch identity. Because of the allegedly more modest extent of the Dutch Empire, aggressive expansionism and violence are not deeply rooted in the collective memory of the country’s colonial past. Besides, the territories under Dutch rule (apart from the Cape Colony) never transformed into actual settler colonies, “retained a strong business-oriented and technocratic bent” and were – other than their British or French counterparts – only marginally affected by cultural interventions.⁵⁸ Moreover, just like the history of the German Empire, a majority of Dutch colonial history writing had remained strongly embedded within the geographical confines of the Netherlands and their empire.⁵⁹ Raben thus proposes to globalize “Dutch imperial spaces” and to “examine specific networks across (and transgressing) the Dutch

⁵⁶ See, for example, Von Brescius, Moritz/Dejung, Christof (2021): ‘The Plantation Gaze: Imperial Careering and Agronomic Knowledge between Europe and the Tropics’, in: *Comparativ* 31 (5/6), pp. 572–590; Reyes, ‘German Apothecaries and Botanists in Early Modern Indonesia, the Philippines, and Japan’; Van Gelder, *Het Oost-Indisch Avontuur*.

⁵⁷ Raben, Remco (2013): ‘A New Dutch Imperial History? Perambulations in a Prospective Field’, in: *BMGN – Low Countries Historical Review* 128 (1), pp. 5–30, here p. 8.

⁵⁸ *Ibid.*, pp. 9f.

⁵⁹ Even recent historiographic overviews of the Dutch Colonial Empire focus predominantly on developments within the borders of the Netherlands and its Empire. See, for example, Bossenbroek, Martin: *De Wraak van Diponegoro. Begin en Einde van Nederlands-Indië*, Amsterdam: Athenaeum 2020; Schulte Nordholt, Henk: *Südostasien*, Frankfurt am Main: Fischer Verlag 2018; Vickers, Adrian: *A History of Modern Indonesia*, Cambridge: Cambridge University Press 2005; Brown, Colin: *A Short History of Indonesia. The Unlikely Nation?*, Crows Nest: Allen & Unwin 2003. In his popular-scientific book on the Indonesian independence movement, David van Reybrouck does discuss the global dimension of the newly founded Indonesian Republic. His chapters on the colonial era are however solely focused on Dutch-Indonesian entanglements. See Van Reybrouck, David: *Revolusi. Indonesia and the Birth of the Modern World*, Antwerp: Flanders Literature 2021.

imperial world would enhance our understanding of what empire was about.”⁶⁰ It is only fairly recently that scholarship has started to explore Dutch imperialism in the broader context of European expansion and globalization.⁶¹ In an attempt to overcome methodological nationalism in Dutch colonial historiography, Susan Legêne has called for the acknowledgement of the “European character” of Dutch imperial intellectual history to “explore how imperialism shaped nations including the Netherlands and how it correspondingly shaped our understanding of an intellectual history that does not necessarily take the nation, or even Europe, as its frame of reference.”⁶² Building on Legêne’s suggestions, the historian Bernhard C. Schär has called to understand the Dutch empire as a “pan-European endeavor” rather than an exclusively national project.⁶³ Thus, in the past couple of years, a promising body of research has emerged demonstrating that the Dutch Empire was deeply enmeshed in global or transimperial networks extending beyond the Netherlands and their colonies. Historians have pointed, for example, to the high presence of non-Dutch Europeans on board of the VOC ships and in early modern Dutch settlements,⁶⁴ the transnational composition of the Dutch colonial army,⁶⁵ merchants and planters from all across Europe migrating to the Dutch East Indies in search of economic opportunities,⁶⁶ the activities of ‘foreign’ European naturalists in the Dutch East Indies,⁶⁷ or the transimperial exchanges of knowledge between the Dutch, British, French, and other Empires.⁶⁸

⁶⁰ Raben, ‘A New Dutch Imperial History?’, pp. 29.

⁶¹ For an overview, see the excellent volume by Antunes, Catia/Gommans, Jos (eds): *Exploring the Dutch Empire. Agents, Networks and Institutions, 1600-2000*, London: Bloomsbury 2015 and Van den Doel, Wim (2010): ‘The Dutch Empire. An Essential Part of World History’, in: *Bijdragen en Mededelingen Betreffende de Geschiedenis der Nederlanden 125 (2/3)*, pp. 179–208.

⁶² Legêne, Susan (2017): ‘The European Character of the Intellectual History of Dutch Empire’, in: *BMGN – Low Countries Historical Review 132 (2)*, pp. 110–120, here p. 119.

⁶³ Schär, ‘The Dutch East Indies and Europe’, pp. 7–9.

⁶⁴ See, Hoyer, Francesca: *Relations of Absence. Germans in the East Indies and Their Families, c. 1750-1820*, Uppsala: Acta Universitatis Upsaliensis 2020; Fatah-Black, Karwan (2013): ‘A Swiss Village in the Dutch Tropics. The Limitations of Empire-Centred Approaches to the Early Modern Atlantic World’, in: *BMGN – Low Countries Historical Review 128 (1)*, pp. 31–52; Van Gelder, *Het Oost-Indisch Avontuur*; Blussé/De Moor, *Een Zwitsers Leven in de Tropen*.

⁶⁵ See Krauer, *Colonial Mercenaries*; Bossenbroek, Martin: *Volk voor Indië. De Werving van Europese Militairen voor de Nederlandse Koloniale Dienst 1814-1909*, Amsterdam: Van Soeren 1992; Bossenbroek, ‘The Living Tools of Empire’.

⁶⁶ See Toivanen, Mikko: ‘A Nordic Colonial Career Across Borders. Hjalmar Björling in the Dutch East Indies and China’, in: *The Journal of Imperial and Commonwealth History 51 (3)*, pp. 421–441; Zangger, *Koloniale Schweiz*.

⁶⁷ See Schär, *Tropenliebe*; Reyes, ‘German Apothecaries and Botanists in Early Modern Indonesia, the Philippines, and Japan’; Weber, Andreas (2019): ‘Collecting Colonial Nature. European Naturalists and the Netherlands Indies in the Early Nineteenth Century’, in: *BMGN – Low Countries Historical Review 134 (3)*, pp. 72–95.

⁶⁸ Boomgaard, Peter: *Empire and Science in the Making. Dutch Colonial Scholarship in Comparative Global Perspective, 1760-1830*, Basingstoke: Palgrave Macmillan 2013; Huigen, Siegfried/De Jong, Jan L./Kolfin, Elmer (eds): *The Dutch Trading Companies as Knowledge Networks*, Leiden: Brill, 2010; Menger, Tom (2022): “‘Press the Thumb onto the Eye’”. Moral Effect, Extreme Violence, and the Transimperial Notions of British, German, and Dutch Colonial Warfare, ca. 1890-1914’, in: *Itinerario 46 (1)*, pp. 84–108. For the cultural, religious, and political heritage formation connecting (post-)colonial Indonesia within a broader South and Southeast Asian context, see

Others have highlighted the repercussions of Dutch imperialism in various European regions outside the Netherlands that were connected with the Dutch Empire through transimperial flows of people, money, and goods. The historians Philipp Krauer and Bernhard C. Schär, for example, have shed light on the ways in which the Dutch Colonial Army emerged as an important welfare provider for lower-class European families across Europe by offering pension payments to KNIL veterans and their relatives.⁶⁹ Caroline Driënhuizen has zoomed in on the case of two Eurasian art collectors from the Dutch East Indies who claimed their status as “Europeans” by donating ethnographic artifacts to museums in Berlin, Dresden, and Vienna, thereby pointing to the border-crossing cultural exchanges between the Indies and various European countries.⁷⁰

By analyzing the case of German-speaking physicians in the Dutch East Indies’ military and civil medical services, this thesis adds to this promising strand of research aiming at expanding the spatial dimension of Dutch imperialism beyond the Netherlands and their colonies. A first objective is to carefully investigate and compare the positionality of ‘foreign’, middle-class, medically educated, European men within the broader context of the Dutch “imperial social formation.”⁷¹ By doing so, I hope to add new layers of complexity to the understanding of “Europeanness” in the Dutch East Indies, considering factors such as regional and national background alongside class, race, religion, and masculinity.⁷² Moreover, while scholars of (colonial) medicine have repeatedly pointed to the particularly transnational nature of the discipline (see following section),⁷³ historians of Dutch colonial medicine have so far largely

Bloembergen, Marieke/Eickhoff, Martijn: *The Politics of Heritage in Indonesia. A Cultural History*, Cambridge: Cambridge University Press 2020.

⁶⁹ See Krauer/Schär, ‘Welfare for War Veterans’. A particularly interesting case is the Swiss KNIL veteran Loius Wyrsh whose Indo-Swiss son would become an important figure in the foundation of the Swiss nation state. See Schär, Bernhard C. (2022): ‘Switzerland, Borneo and the Dutch Indies. Towards a New Imperial History of Europe, c.1770–1850’, in: *Past & Present* 257 (1), pp. 134–167.

⁷⁰ See Driënhuizen, Caroline (2019): ‘Being “European” in Colonial Indonesia. Collectors and Collections between Yogyakarta, Berlin, Dresden and Vienna in the Late Nineteenth Century’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 21–46.

⁷¹ For intersectionality and “Imperial Social Formations”, see Sinha, Mrinalini (2000): ‘Mapping the Imperial Social Formation. A Modest Proposal for Feminist History’, in: *Signs* 25 (4), pp. 1077–1082.

⁷² For the so far most elaborate account of “hybridity” and “Europeanness” in the Dutch East Indies, see Bosma, Ulbe/Raben, Remco: *Being ‘Dutch’ in the Indies. A History of Creolisation and Empire, 1500-1920*, Singapore: NUS Press 2008. For intersectional approaches to Dutch colonial history, also see Protschky, Susie (2008): ‘Seductive Landscapes. Gender, Race and European Representations of Nature in the Dutch East Indies in the Late Colonial Period’, in: *Gender & History* 20 (2), pp. 372–398; Stoler, Ann Laura: *Race and the Education of Desire. Foucault’s History of Sexuality and the Colonial Order of Things*, Durham: Duke University Press 1995, pp. 155–158.

⁷³ See, for example, Foster, Anne L.: ‘Medicine to Drug, Opium’s Transimperial Journey’, in: Hoganson, Kristin L./Sexton, Jay (eds): *Crossing Empires. Taking U.S. History into Transimperial Terrain*, Durham: Duke University Press 2020, pp. 112–134; Neill, Deborah: *Networks in Tropical Medicine. Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890-1930*, Stanford: Stanford University Press 2012; Bennet, Brett M.: ‘Science and Empire. An Overview of the Historical Scholarship’, in: Bennet, Brett M./Hodge, Joseph

disregarded the transnational or transimperial dimensions of medical knowledge produced in and about the Dutch East Indies.⁷⁴ A second aim is thus to investigate to what extent medicine in the Dutch East Indies shaped and was shaped by German-speaking medical practitioners and discourses of the late 19th and early 20th centuries. The next section discusses in more detail to what extent the present study thereby contributes to the history of colonial medicine more broadly.

History of Colonial Medicine

The significance of medicine in the making of modern empires (and vice versa) has been established by scholars since the 1970s. The historian Daniel Headrick has gone so far as to attribute medicine with the status of being one of the indispensable “tools of empire.” Alongside railway technologies and modern weaponry, he claims, medicine was a crucial asset in the European conquest of the colonized world.⁷⁵ Additionally, scholars such as Roy MacLeod or Philip Curtin have pointed to the high death rates of Europeans in the colonies, further elevating the standing of medicine in European colonial contexts by pointing to the various ‘revolutions’ in European tropical medicine, parasitology, bacteriology, and hygiene towards the turn of the 20th century.⁷⁶ Beneath these earlier studies, however, lies a diffusionist perspective on medicine, assuming that the production of medical knowledge was predominantly rooted in Europe from where it is subsequently disseminated across the colonized world. Attempting to counter these Eurocentric tendencies in the history of medicine, historians have thus

M. (eds): *Science and Empire. Knowledge and Networks of Science across the British Empire, 1800–1970*, Basingstoke: Palgrave Macmillan 2011, pp. 3–29; Digby, Anne/Ernst, Waltraud/Mukharji, Projit B. (eds): *Crossing Colonial Historiographies. Histories of Colonial and Indigenous Medicines in Transnational Perspective*, Newcastle upon Tyne: Cambridge Scholars Publishing 2010.

⁷⁴ The body of research on colonial medicine in the Dutch East Indies is comparatively small. Recent publications include Van Bergen, Leo: *The Dutch East Indies Red Cross, 1870-1950. On Humanitarianism and Colonialism*, New York: Lexington Books 2019; Pols, Hans: *Nurturing Indonesia. Medicine and Decolonisation in the Dutch East Indies*, Cambridge: Cambridge University Press 2018; Van Bergen, Leo: *Uncertainty, Anxiety, Frugality. Dealing with Leprosy in the Dutch East Indies, 1816-1942*, Singapore: NUS Press 2018; Hesselink, Liesbeth: *Healers on the Colonial Market. Native Doctors and Midwives in the Dutch East Indies*, Leiden: KITLV Press, 2011. For an (slightly dated) overview of themes and perspectives in the Dutch East Indies’ history of medicine, see Van Heteren, G.M/De Knecht-Van Eekelen, A./Pulissen, M.J.D. (eds): *Dutch Medicine in the Malay Archipelago 1816-1942*, Amsterdam: Rodopi 1989.

⁷⁵ See Headrick, Daniel: *The Tools of Empire. Technology and European Imperialism in the Nineteenth Century*, New York: Oxford University Press 1981.

⁷⁶ See MacLeod, Roy/Lewis, Milton (eds): *Disease, Medicine and Empire. Perspectives on Western Medicine and the Experience of European Expansion*, London: Routledge 1988; Curtin, Philip: *Death by Migration. Europe’s Encounter with the Tropical World in the Nineteenth Century*, Cambridge: Cambridge University Press 1989.

increasingly shifted their focus to medical practices and discourses in the colonies themselves.⁷⁷ Scholars have, for example, unveiled how colonial medicine both informed and was informed by perceived gendered, class-related and racial differences,⁷⁸ how Europeans (violently) intervened into the everyday lives of indigenous populations through vaccination campaigns and public health policies,⁷⁹ or how medicine served as a legitimization strategy of colonial rule as a part of a greater ‘civilizing mission.’⁸⁰ Others have pointed to the various European and indigenous interlocutors or ‘go-betweens’ involved in medical knowledge production.⁸¹ A

⁷⁷ Pioneering studies in this field are Tilley, Helen: *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*, Chicago: University of Chicago Press 2011; Chakrabarti, Pratik: *Medicine and Empire, 1600-1960*, Basingstoke: Palgrave Macmillan 2014; Arnold, David: ‘Introduction. Disease, Medicine and Empire’, in: idem (ed), *Imperial Medicine and Indigenous Societies*, Manchester: Manchester University Press 1988, pp. 1–26; Arnold, David: *Science, Technology and Medicine in Colonial India*, Cambridge: University of Cambridge Press 2000; Worboys, Michael: ‘Colonial Medicine’, in: Cooter, Roger/Pickstone, John (eds): *Medicine in the Twentieth Century*, London: Taylor & Francis 2000, pp. 67–80; Arnold, David: *Colonizing the Body. State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press 1993; Worboys, Michael (1996): ‘Germs, Malaria and the Invention of Mansonian Tropical Medicine. From “Diseases in the Tropics” to “Tropical Diseases”’, in: *Clio Medica* 35, pp. 181–207; Harrison, Mark: *Public Health in British India. Anglo-Indian Preventive Medicine 1859-1914*, Cambridge: Cambridge University Press 1994; Vaughan, Megan: *Curing their Ills. Colonial Power and African Illness*, Cambridge: Polity Press 1991.

⁷⁸ See, for example, Downs, Jim: *Maladies of Empire. How Slavery, Imperialism, and War Transformed Medicine*, Cambridge: The Belknap Press of Harvard University Press 2021; Seth, Suman: ‘Race and Science’, in: Hudson, Nicholas (ed): *A Cultural History of Race in the Reformation and Enlightenment (Volume 5)*, London: Bloomsbury Academic 2021, pp. 71–86; Lockley, Tim: *Military Medicine and the Making of Race. Life and Death in the West India Regiments, 1795-1874*, New York: Cambridge University Press 2020; Seth, Suman: *Difference and Disease. Medicine, Race and the Eighteenth-Century British Empire*, Cambridge: Cambridge University Press 2018; Marks, Shula (1997): ‘What is Colonial about Colonial Medicine?’, in: *Social History of Medicine* 10, pp. 205–219; Lorcin, Patricia (1999): ‘Imperialism, Colonial Identity, and Race in Algeria, 1830–1870. The Role of the French Medical Corps’, in: *Isis* 90 (4), pp. 653–679; Schiebinger, Londa (1990): ‘The Anatomy of Difference. Race and Sex in Eighteenth-Century Science’, in: *Eighteenth-Century Studies* 23, pp. 387–405.

⁷⁹ For colonial public health see Bhattacharya, Nandini: *Contagion and Enclaves. Tropical Medicine in Colonial India*, Liverpool: Liverpool University Press 2012; Serahwat, Samiksha: *Colonial Medical Care in North India. Gender, State, and Society, c. 1830-1920*, Oxford: Oxford University Press 2013; Anderson, Warwick: *Colonial Pathologies. American Tropical Medicine, Race, and Hygiene in the Philippines*, Durham: Duke University Press 2008; Webel, Mari K.: *The Politics of Disease Control. Sleeping Sickness in Eastern Africa, 1890-1920*, Athens: Ohio University Press 2019; Bashford, Alison: *Imperial Hygiene. A Critical History of Colonialism Nationalism and Public Health*, Basingstoke: Palgrave Macmillan 2005; Echenberg, Myron: *Black Death, White Medicine. Bubonic Plague and the Politics of Public Health in Colonial Senegal, 1914-1945*, Oxford: J. Currey 2002; Manderson, Lenore: *Sickness and the State. Health and Illness in Colonial Malaya, 1870-1940*, Cambridge: Cambridge University Press 1996. For colonial vaccination campaigns see Brig, Kristin (2022): ‘Stabilising Lymph. British East and Central Africa, “Tropical” Climates, and the Search for Effective Smallpox Vaccine Lymph, 1890s–1903’, in: *The Journal of Imperial and Commonwealth History* 50 (5), pp. 890–914; Velmet, Aro: *Pasteur’s Empire. Bacteriology and Politics in France, its Colonies, and the World*, New York: Oxford University Press 2020; Bhattacharya, Sanjoy/Harrison, Mark/Worboys, Michael: *Fractured States. Smallpox, Public Health and Vaccination Policy in British India, 1800-1947*, New Delhi: Orient Longman 2005; Arnold, David: ‘Smallpox and Colonial Medicine in Nineteenth-Century India’, in: idem (ed), *Imperial Medicine and Indigenous Societies*, pp. 45–65.

⁸⁰ See, for example, Chakrabarti, *Medicine and Empire*, pp. 122–140 and pp. 164–181; Neill, Deborah: ‘Science and Civilizing Mission. Germans and the Transnational Community of Tropical Medicine’, in: Naranch/Eley (eds), *German Colonialism in a Global Age*, pp. 74–92; Arnold, *Colonizing the Body*; Vaughan, *Curing their Ills*.

⁸¹ For the hybridity of colonial knowledge and intercultural knowledge exchanges more broadly, see Raj, Kapil (2023): ‘William Jones and Intercultural Knowledge Production’, in: *Global Intellectual History*, online, DOI: [10.1080/23801883.2023.2184405](https://doi.org/10.1080/23801883.2023.2184405); Raj, Kapil: ‘Go-Betweens, Travelers, and Cultural Translators’, in: Lightman, Bernard (ed): *A Companion to the History of Science*, Malden: Wiley Blackwell 2016, pp. 39–57; Schaffer, Simon

major contribution of this research is that it moves beyond dichotomies such as center/periphery, Western/indigenous, or practical/theoretical. On the one hand, historians have highlighted the hybrid nature of medical knowledge production, in particular the deep impact of indigenous medical traditions in shaping European medical sciences.⁸² On the other hand, scholars have significantly expanded the scale and scope of actors involved in the making of ‘modern’ European medical knowledge. More specifically, historians have demonstrated that a substantial portion of the individuals engaged in generating and spreading medical knowledge in the colonies did not possess a ‘formal’, European-style *theoretical* training as medical scientists, or, if they did, conducted their research outside of ‘formal’ scientific institutions. Rather, European and indigenous medical *practitioners* such as nurses, so-called shamans, naval doctors, medical officers, or missionaries played a significant a role in contesting, shaping, and circulating medical knowledge.⁸³ According to the historian Warwick Anderson, it was precisely the activities of such interlocutors that constituted “what is colonial about colonial medicine.”⁸⁴ Anderson argues that shifting the focus from theories established in the European laboratories to practitioners in the colonies allows to shed light on the ways in which the medical sciences were shaped and contested within colonial contexts. Such a shift in perspective reveals, for example, how racial presumptions underpinning colonial rule found their way into the allegedly objective, European medical sciences. Moreover, centering on medical *practices* rather than *theories* enables historians to move away from deterministic accounts of the European medical sciences that present the various ‘advances’ in bacteriology,

et al. (eds): *The Brokered World. Go-Betweens and Global Intelligence, 1770-1820*, Sagamore Beach: Science History Publications 2009.

⁸² See, for example, Alberts, Tara/Fransen, Sietske/Leong, Elaine (2022): ‘Translating Medicine, ca. 800-1900. Articulations and Disarticulations’, in: *Osiris* 37, pp. 1–21; Pols, Hans/Thompson, C. Michele/Harley Warner, John (eds): *Translating the Body. Medical Education in Southeast Asia*, Singapore: NUS Press 2017; Fischer-Tiné, Harald: *Pidgin-Knowledge. Wissen und Kolonialismus*, Zürich: Diaphenes 2018; Schiebinger, Londa: *Secret Cures of Slaves. People, Plants, and Medicine in the Eighteenth-Century Atlantic World*, Stanford: Stanford University Press 2017; Mukharji, Projit Bihari: *Doctoring Traditions. Ayurveda, Small Technologies, and Braided Science*, Chicago: The University of Chicago Press 2018; Ernst, Waltraud (ed): *Plural Medicine, Tradition and Modernity*, London: Routledge 2002; Arnold, *Imperial Medicine and Indigenous Societies*.

⁸³ See, for example, Anderson, *Colonial Pathologies*; Tilley, *Africa as a Living Laboratory*; Ratschiller, Linda: *Medical Missionaries and Colonial Knowledge in West Africa and Europe, 1885-1914. Purity, Health and Cleanliness*, Basingstoke: Palgrave Macmillan, forthcoming 2023; Mukherjee, Sujata: *Gender, Medicine, and Society in Colonial India. Women’s Healthcare in Nineteenth- and Early Twentieth-century Bengal*, New Delhi: Oxford University Press 2017; Osborne, Michael A.: *The Emergence of Tropical Medicine in France*, Chicago: University of Chicago Press 2014; Ratschiller, Linda/Weichlin, Siegfried (eds): *Der Schwarze Körper als Missionsgebiet. Medizin, Ethnologie und Theologie in Afrika und Europa 1880-1960*, Köln: Böhlau Verlag 2016; Mukharji, Projit Bihari: *Nationalizing the Body. The Medical Market, Print and Daktari Medicine*, London: Anthem Press 2011; Hesselink, *Healers on the Colonial Market*; Digby/Ernst/Mukharji (eds), *Crossing Colonial Historiographies*; Digby, Anne/Sweet, Helen: ‘Nurses as Cultural Brokers in Twentieth-Century South Africa’, in: Ernst, *Plural Medicine*, pp. 113–129; Allman, Jean (1994): ‘Making Mothers. Missionaries, Medical Officers and Women’s Work in Colonial Asante, 1924-1945’, in: *History Workshop* 38, pp. 23–47.

⁸⁴ Anderson, Warwick (1998): ‘Review. Where is the Postcolonial History of Medicine?’, in: *Bulletin of the History of Medicine* 72 (3), pp. 522–530. Also see Shula, ‘What is Colonial about Colonial Medicine?’.

parasitology, and tropical medicine at the turn of the 20th century as a ‘revolution’ that allegedly ‘proved’ the universality and superiority of European medicine and replaced older theories that bound the spread of diseases to local conditions.⁸⁵ Rather, a large and growing body of research points to the contestedness of late 19th-century laboratory medicine, in particular within colonial contexts.⁸⁶ By focusing on ‘men on the spot’, i.e. physicians who practiced medicine within the Dutch East Indies’ military and civil health services, the present study aims at contributing to this promising strand of research that centers the contested and hybrid character of medical knowledge in the colonies in an attempt to overcome Eurocentric, teleological notions of scientific ‘revolutions’ in medicine. Furthermore, most previous studies start their investigation in the 1890s and 1900s when the major bacteriological laboratories and institutes for tropical medicine were founded.⁸⁷ Hence, a further contribution of this study lies in its focus on the period spanning from the 1870s, just prior to the ‘bacteriological revolution,’ through the 1920s, a time when the bacteriological paradigm had firmly entrenched itself in European medical discourse. The objective is to thereby uncover continuities and disruptions during this ‘transitional’ phase from observation-based, environmental determinism to laboratory-based, bacteriological, and parasitological universalism in colonial medicine.

Lastly, a large and growing body of research has highlighted the transnational character of medical knowledge production that defied the presumably rigid boundaries of individual nation states and empires. In her seminal study, the historian Deborah Neill, for example, showcased how the institutionalization of tropical medicine fostered the emergence of an epistemic community of medical experts who were connected across national borders through a shared commitment to scientific progress in the early 20th century.⁸⁸ Moreover, in their edited volume *Crossing Colonial Historiographies*, the historians Anne Digby, Waltraud Ernst and Projit

⁸⁵ For the transition from localism to universalism in colonial medicine, see the contributions in Arnold, David (ed): *Warm Climates and Western Medicine. The Emergence of Tropical Medicine, 1500-1900*, Amsterdam: Rodopi 1996.

⁸⁶ See, for example, Van Bergen, *Uncertainty, Anxiety, Frugality*; Velmet, *Pasteur’s Empire*; Chakrabarti, Pratik: *Bacteriology in British India. Laboratory Medicine and the Tropics*, Suffolk: Boydell & Brewer 2012; Ogawa, Mariko (2000): ‘Uneasy Bedfellows: Science and Politics in the Refutation of Koch’s Bacterial Theory of Cholera’, in: *Bulletin of the History of Medicine* 74 (4), pp. 671–707; Mann, Michael (2017): ‘Kolonialismus in den Zeiten der Cholera. Zum Streit zwischen Robert Koch, Max Pettenkofer und James Cuninghame über die Ursachen einer epidemischen Krankheit’, in: *Comparativ* 15 (5/6), pp. 80–106. For a concise critique of notions of the bacteriological “revolution” more generally, see Worboys, Michael (2007): ‘Was there a Bacteriological Revolution in Late Nineteenth-Century Medicine?’, in: *Studies in History and Philosophy of Biological and Biomedical Sciences* 38 (1), pp. 20–42.

⁸⁷ See, for example, Anderson, *Colonial Pathologies*; Velmet, *Pasteur’s Empire*; Chakrabarti, *Bacteriology in British India*; Chakrabarti, *Medicine and Empire*. While Pratik Chakrabarti’s study on *Medicine and Empire* differs from aforementioned monographies in that it covers the period from 1600 to 1960, it primarily provides an overview that only occasionally highlights continuities and disruptions between the various periods it explores.

⁸⁸ See Neill, *Networks in Tropical Medicine*; Neill, ‘Science and Civilizing Mission’. Also see Osborne, *The Emergence of Tropical Medicine*.

Mukharji have called for the investigation of the “*trans*-local, *trans*-regional and, in particular since the nineteenth century, *trans*-national connections” in the history of colonial medicine.⁸⁹ The individual contributions in the volume give inspiring insights into the potential of writing the histories of medicine across regions and disciplines. I aim to extend the arguments presented by historians in the field of transnational colonial medicine by introducing a transimperial dimension, as detailed in the upcoming chapter on methodology. Through this approach, I hope to shed light on the circulation of medical knowledge between the Dutch East Indies, the Netherlands, and different areas in German-speaking Europe, including regions that had no or limited colonial overseas holdings of their own. At the same time, a transimperial perspective allows me to overcome the shortfalls of historiographies that reduce the history of German colonial medicine to the history of medicine during German colonial rule.⁹⁰ Instead, I shed light on the ways in which German physicians conducted medical research in the ‘colonial field’ both before and after the German Empire entered and exited the ‘colonial race’, and to what extent German colonial medicine *avant la lettre* benefited the German Empire’s own imperial ambitions.

⁸⁹ Digby, Anne/Ernst, Waltraud/Mukharji, Profit B.: ‘Introduction. Crossing Colonial Historiographies, Connecting Histories and their Historians’, in: idem (eds): *Crossing Colonial Historiographies*, pp. ix–xxii, here p. xii. For an equally original approach to the border-crossing history of colonial medicine, see Foster, ‘Medicine to Drug. Opium’s Transimperial Journey’ and Dewhurst, Lewis: *Divided Rule. Sovereignty and Empire in French Tunisia, 1881-1938*, Berkeley: University of California Press 2014.

⁹⁰ See for example Eckart, Wolfgang: *Medizin und Kolonialimperialismus. Deutschland 1884-1945*, Paderborn: Schöningh 1997; Gradmann, Christoph (2016): ‘Africa as a Laboratory. Robert Koch, Tropical Medicine and Epidemiology’, in: Vögele, Jört/Knöll, Stefanie/Noack, Thorsten (eds): *Epidemien und Pandemien in historischer Perspektive*, Springer: Wiesbaden 2016, pp. 325–335; Wedekind, Klemens: *Impfe und herrsche. Veterinärmedizinisches Wissen und Herrschaft im kolonialen Namibia 1887-1929*, Göttingen: Vandenhoeck & Ruprecht 2021; Eckart, Wolfgang (2002): ‘The Colony as Laboratory. German Sleeping Sickness Campaigns in German East Africa and in Togo, 1900-1914’, in: *History and Philosophy of the Life Sciences* 24 (19), pp. 69–89.

Aims, Scope, and Methodology

Aims & Scope

Germanophone Physicians in the Dutch East Indies is the first comprehensive study to analyze the high presence of physicians from the German-speaking parts of the German States and Empire, Switzerland, and Habsburg Austria in Dutch imperial services from 1873 to the 1920s. The year 1873 has been chosen as a starting point as it marks the beginning of the Dutch War against the Sultanate of Aceh in northwestern Sumatra, and with that the last major recruitment wave of ‘foreign’ medical officers. At the same time, the period between the 1870s and 1900 gave rise to ‘modern’ laboratory medicine. The ‘discovery’ of universally occurring, pathogenic microorganisms, in particular, challenged colonial physicians’ previous understandings that tied the spread of disease to the tropical environment. Despite the significant controversies associated with this transformation, the dominant narrative in medical history presents bacteriology and tropical medicine as the prevailing paradigms around 1900. Furthermore, in the Dutch East Indies, the early 1900s witnessed a notable shift in the official colonial government policy with the introduction of the ‘ethical policy,’ which, at least on the surface, bolstered the provision of civil health care services to the indigenous populations. While the health care system in the Dutch East Indies had been under military control throughout the 19th century, the early 20th century saw a growing number of German-speaking physicians seeking opportunities within the civil medical sector. A first aim of this thesis is thus to explore the contingent relationship between 19th century colonial medicine – often presented as ‘ineffective’ and ‘ideological’ – and ‘modern’, ‘objective’ laboratory medicine around 1900, on the one hand, as well as the connections and disconnections between military and civil medicine in the Dutch East Indies, on the other. Moreover, examining the time frame spanning from 1873 to the 1920s allows to compare German colonial entanglements before, during, and after the German Empire’s forceful acquisition of its own colonial territories in Africa and the Pacific.

The spatial framework chosen for the present investigation encompasses the Netherlands, the Dutch East Indies, and Germanophone Europe. By defining Germanophone physicians as the main group of actors under examination, united by their shared language, gender, and medical background rather than by national belonging, a further objective of this study is to carefully reassess the role of nationality, class, masculinity, and education in transimperial

collaborations around 1900. Moreover, this study aims at contributing to a social history of the medical profession by assessing how experiences in the colonies could function as symbolic capital, enabling individual physicians to assert their epistemic authority within European medical discourse and thereby advancing their careers and upward social mobility. In turn, I explore to what extent medical discourse in Switzerland, the German Empire, and the Habsburg Empire, thus in regions with no or late colonial overseas empire of their own, was shaped by colonial ideology and categories along the lines of race, class, and gender. In doing so, I also aim to further illuminate the wider impact of the Dutch Empire beyond the borders of the Netherlands.

To pursue these goals, my investigation is guided by two sets of distinct yet interrelated research questions. The first concerns the broader concern of **situating these ‘foreign’, medically educated, middle-class men** within the broader Dutch East Indies context. In what ways did Germanophone physicians contribute to Dutch empire building? How and in relation to whom did they position themselves within the colonial situation? What was the role of race, gender, class, and national belonging within this process of positioning? And what was the role of medicine? To what extent did the colonial experience serve as a means of negotiating hegemonic masculinity ideals and bourgeois respectability? In what ways did it facilitate upward social mobility and transimperial careers? The second set of questions aims at gaining fresh insights into the relationship between **medicine and empire**. How did medicine serve to solidify colonial hierarchies and categories and what were the boundaries of the alleged hegemony of European medicine? What was the role of colonial institutions beyond formalized scientific establishments in funding and advancing medical research in the colonies? How did medical men ‘on the spot’ shape and contest colonial medical discourse? What insights can we gain from their case regarding the relationship between dichotomies such as medical practice and theory, the field and the laboratory, or ‘European’ and ‘colonial’ medicine? How were the medical sciences in Germanophone Europe shaped by the colonial experience of physicians serving foreign empires? What were the potentially long-lasting legacies of the careers and research activities of colonial physicians for the local populations in colonized Indonesia?

Methodological Reflections

In an attempt to move beyond the nation-centric bias in imperial history, I chose to adopt a *transimperial* perspective, as opposed to exploring the history of entanglements between Germanophone Europe and the Dutch East Indies through a *transnational* lens. For as has been convincingly argued by the historians Daniel Hedinger and Nadin Heé, transnational history has had the “paradoxical effect” that, while “national history has been transnationalized [...] the history of empires has, by and large, remained nationalized.”⁹¹ Instead, Hedinger and Heé suggest to investigate the history of empires transimperially, allowing two bring “different kinds of empires ‘into one analytic field’.”⁹² The transimperial approach will enable me to go beyond the sphere of Dutch influence with some of the chapters diverging into other imperial spaces such as Meiji Japan and the German Colonial Empire. Moreover, as Claire Louise Blaser, Josephine Selander, and myself have argued elsewhere in more detail, a further potential of shifting from a transnational to a transimperial perspective is that it allows to integrate European regions “at the margins of Imperial Europe”, i.e. nation states such as Switzerland and Habsburg Austria with seemingly little affiliation to European imperialism, into the broader “webs” that connected distinct imperial settings with each other and with the European metropolises.⁹³ For this purpose, I apply ‘Germanophoneness’ as a category of analysis to explore to what extent distinct regions within the German-speaking “margins” of Imperial Europe were connected not only with the Dutch (and other Empires), but also among each other.⁹⁴

By exploring the shared histories of the Dutch and other empires, the Netherlands, and Germanophone Europe through the careers of colonial physicians, I hope to further elucidate the ways in which medical knowledge was shaped, transformed, appropriated, and contested by moving across and beyond distinct national and imperial contexts and to further overcome dichotomies such as applied/laboratory, European/colonial, or objective/ideological. In this respect, a further concern is to avoid diffusionist narrative in the history of medicine that presents “‘science’ [...] as an all-encompassing ‘knowledge-power regime’ located in a vaguely

⁹¹ Hedinger, Daniel/Heé, Nadin (2018): ‘Transimperial History. Connectivity, Cooperation and Competition’, in: *Journal of Modern European History* 16 (4), pp. 429–452, here p. 429. For a similar approach, also see Kamissek, Christoph/Kreienbaum, Jonas (2016): ‘An Imperial Cloud? Conceptualising Interimperial Connections and Transimperial Knowledge’, in: *Journal of Modern European History* 14 (2), pp. 164–182 and Hoganson/Sexton (eds), *Crossing Empires*.

⁹² Hedinger/Heé, ‘Transimperial History’, p. 430.

⁹³ See Blaser/Ligtenberg/Selander: ‘Introduction’, pp. 533–535.

⁹⁴ For the analytical value of defining ‘German-speakers’ as a subject of investigation rather than nationally ‘German’ individuals, see Penny, H. Glenn H./Rinke, Stefan (2015): ‘Germans Abroad. Respatializing Historical Narrative’, in: *Geschichte und Gesellschaft* 41, pp. 173–196.

defined ‘West’ and based exclusively on the ‘modern Western’ knowledge system.”⁹⁵ Hence, I draw from approaches developed in the field of history of knowledge in attempting to call into question Eurocentric tendencies in the history of science.⁹⁶ My understanding of the relationship between science and knowledge is particularly inspired by the analytical framework put forth by the feminist historian and philosopher of science Donna Haraway. In her seminal essay *Situated Knowledges*, Haraway characterizes the claim put forth by patriarchally structured, Western sciences to be the sole authority capable to produce ‘objective truth’ about the world as “god trick.” The “god trick” claims that only European men of science were able to see “everything from nowhere” and with that to produce ‘universal’, ‘objective’ knowledge about the world, and is based on the assertion that gendered or racialized ‘others’ always speak from a marked, subjective position. Haraway however contends that there is no such thing as an unmarked subject position observing the world from a ‘neutral’ point of view, but only partial perspectives “always constructed and stitched together imperfectly [...]”⁹⁷ Haraway’s approach stands out from mere cultural relativism, as it skillfully maintains the importance of objectivity while simultaneously pointing to the significance of positionality, asserting that producers of scientific knowledge are always inevitably “situated” within their cultural and contextual surroundings. In essence, she argues that recognizing the partiality of scientific knowledge allows for a more comprehensive examination of the gendered, racialized, and otherwise power-related dimensions of science, all while upholding a commitment to the pursuit of truth and an understanding of reality that extends beyond mere social constructions. In my own analysis, I am guided by Haraway’s definitions of “science” and “knowledge”, using them as tools to deconstruct the assertions made by Germanophone physicians regarding the hegemonic and universal character of European medicine. Following Haraway’s approach, I do so by carefully examining their “situatedness” as middle-class, educated men in a ‘foreign’ colony, whose position in the “imperial social formation” always stood in complex and dynamic

⁹⁵ Bennet, ‘Science and Empire’, p. 11.

⁹⁶ For an overview of the history of knowledge more generally, see Sarasin, Philipp (2020): ‘More Than Just Another Specialty. On the Prospects for the History of Knowledge’, in: *The Journal for the History of Knowledge 1 (1)*, pp. 1–5; Lässig, Simone (2016): ‘The History of Knowledge and the Expansion of the Historical Research Agenda’, in: *Bulletin of the German Historical Institute 59*, pp. 29–59; Secord, James A. (2004): ‘Knowledge in Transit’, in: *Isis 95 (4)*, pp. 654–672. For the potential of history of knowledge in imperial history, see Seth, Suman (2009): ‘Putting Knowledge in its Place. Science, Colonialism, and the Postcolonial’, in: *Postcolonial Studies 12 (4)*, pp. 373–388; Raj, Kapil: *Relocating Modern Science. Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900*, New York: Palgrave Macmillan 2007; Fischer-Tiné, *Pidgin-Knowledge*; Blaser/Ligtenberg/Selander, ‘Introduction’.

⁹⁷ Haraway, Donna (1988): ‘Situated Knowledges. The Science Question in Feminism and the Privilege of Partial Perspective’, in: *Feminist Studies 14 (3)*, pp. 575–599, here pp. 581–590.

relationships with various racialized and gendered ‘others’ and whose ‘scientific views’, far from being universal, perpetually competed with alternative ways of ‘knowing’.⁹⁸

Archives & Sources

The sources analyzed in this study were collected in archives in the Netherlands, Switzerland, Austria, and Germany. Due to visa restrictions related to the Covid-19 pandemic between 2020 and 2022, I was unfortunately not able to conduct field or archival research in Indonesia as I had originally planned. I am fully aware of this obvious lacuna in my thesis. Hence, in an attempt to nevertheless at least partially make visible the presence of Indonesian actors, I tried to highlight instances in which their contributions and resistances are mentioned in European sources.

The first major body of source material considered in this study consists of official administrative documents, reports, and correspondences. Valuable collections consulted are held in the Dutch National Archives (*Nationaal Archief*) in Den Haag and in the Archives and Library of the Leiden University. The sources found in these repositories allowed me to reconstruct the perspective of the Dutch colonial institutions and to give insight into the larger bureaucratic processes, interpersonal networks, and recruitment patterns underlying the recruitment of physicians from Germanophone Europe for service in the Dutch East Indies. Further documents detailing ‘official’ exchanges between the Dutch East Indies government and local authorities in Germanophone Europe could be compiled in the *Bundesarchiv* (Swiss Federal Archive) in Bern and the *Österreichisches Staatsarchiv* (Austrian National Archives) in Vienna. Unfortunately, I was not able to locate a comprehensive collection of ‘official’ documents pertaining the relationship between the German Empire and the Dutch East Indies in the late 19th and early 20th century; this lacuna is however partially mitigated by the fact that the German cases are most extensively documented in the Dutch archives. For the last chapter, that gives a brief outlook on the influence of colonial medicine on the emerging international health movement following the decades after World War I, I drew upon archival sources from the League of Nations in Geneva. Concerning the biographical cornerstones, travel itineraries, and larger career trajectories of the physicians under study, I greatly benefited from the analysis of several German, Swiss, Austrian, and Dutch newspaper articles that could be obtained in the

⁹⁸ For this approach also see Sinha, ‘Mapping the Imperial Social Formation’.

Dutch digital newspaper archive Delpher, the *Deutsches Zeitungsportal* (German online newspaper portal) affiliated with the German National Library, and *ANNO – Historische Zeitungen und Zeitschriften*, the digital newspaper archive of the Austrian National Library.

A second important category of source material considered comprises of scientific publications in medical journals. These sources were instrumental in tracking the various shifts and contestations within colonial medical discourse in the period and regions under investigation. Additionally, they allowed to trace the transimperial circulation of colonial medical knowledge. Attempting to account for the border-crossing character of medical knowledge production, I studied journal publications from the Netherlands, the Dutch East Indies, the German Empire, Habsburg Austria, Switzerland, and Great Britain. While the Dutch East Indies based medical journal *Geneeskundig Tijdschrift voor Nederlandsch Indië* (Medical Journal for the Dutch East Indies), the German *Archiv für Schiffs- und Tropenhygiene* (Archive for Ship- and Tropical Hygiene), and the Austrian *Wiener Medizinische Wochenschrift* (Viennese Medical Weekly) proved to be particularly valuable sources, a complete list of journals consulted can be found in the bibliography.

The third set of sources considered here encompasses personal accounts from individual physicians. In 1888, shortly after concluding his service with the KNIL, the Swiss medical officer Heinrich Erni released his memoirs *Die Behandlung der Verwundeten im Kriege der Niederländer gegen das Sultanat Atjeh* based on the diaries he kept during his stay in Aceh. The memoirs were published by the Basel-based publishing house Benno Schwabe, now known as Schwabe Verlag, that specialized in both literary and scientific works. Erni's memoirs introduce German-speaking readers to the history and objectives of Dutch Imperialism in Aceh, his interactions with indigenous and European populations, and, of course, his own 'heroic' deeds in Dutch service. Similarly, the Austrian medical officer Heinrich Breitenstein published memoirs that were allegedly based on the diaries he kept in the Dutch East Indies. Following his departure from the Dutch East Indies, the Leipzig-based Th. Grieben's Verlag published his trilogy *21 Jahre in Indien. Aus dem Tagebuche eines Militärarztes*, with each book focusing on one of the islands he was stationed on: Borneo (part 1, 1899), Java (part 2, 1900), and Sumatra (part 3, 1902). Naturally, a historical analysis based on sources like memoirs or travelogues, primarily written from a European perspective and intended for a European audience, presents several potential pitfalls. As Mary Louise Pratt has astutely observed, these travelogues offer represent the non-European world through the lens of "imperial eyes."⁹⁹ Despite the inherent

⁹⁹ See Pratt, Mary Louise: *Imperial Eyes. Travel Writing and Transculturation*, London: Routledge 2009.

risk of perpetuating Eurocentric narratives, I believe that a careful examination of these sources, when read against the grain, can nevertheless yield valuable insights: In struggling for a hegemonic position in the ‘imperial social formation’, physicians serving a ‘foreign’ empire found themselves in a constant process of negotiating their social standing towards their Dutch superiors, the European lower classes, and the indigenous populations they encountered. Moreover, in an effort to provide a counterbalance to these published accounts, I successfully traced unpublished letters and other personal documents. This body of source material includes the private papers by the Prussian medical officer Friedrich Wilhelm Stammeshaus housed within a private collection to which I was graciously granted access by John Klein Nagelvoort from the Bronbeek Museum in Arnhem. Additionally, I uncovered personal letters from the Swiss medical officer Ernest Guglielminetti, now archived in the University Library of Basel, and from the German plantation physician Bernhard Hagen, whose estate is preserved at the *Institut für Stadtgeschichte* in Frankfurt am Main. Through these archival materials, I hope to gain insights into the more intimate aspects of the daily lives of Germanophone physicians in Dutch colonial services.

Chapter Outline

Given the dispersed nature of available source materials, reconstructing the comprehensive biographies of one or several physicians proved unfeasible. Rather than adopting a biographical approach that focuses on the career trajectories of a select few extensively documented individuals, this study takes the form of four distinct case studies that loosely follow a chronological order.

The first chapter contextualizes the recruitment of Germanophone physicians for Dutch colonial services within the backdrop of the transimperial labor markets for scientific expertise emerging in the 19th century. The chapter highlights the ways in which the Dutch Colonial Army, holding a monopoly on the Dutch East Indies’ health care system, emerged as the most important recruiter for middle-class, university-educated, European men for Dutch colonial services, thereby transforming into the most important hub for medical (and other forms of) knowledge production. Additionally, the chapter addresses how joining the Dutch Colonial Army as a medical officer represented a promising means for Germanophone physicians to restore a loss of bourgeois respectability, or to strive for hegemonic ideals of imperial masculinity in light of their region of origins’ lack of formal colonial overseas possessions.

Overall, the chapter sheds light on the intricate connection between European (medical knowledge), colonial military operations, the emerging ‘global bourgeoisies’ and transimperial markets for labor and expertise of the 19th century.

Chapter 2 zooms in on a particularly contested moment in the history of Dutch colonial warfare, namely the Aceh War (1873-1914) in northwestern Sumatra. More specifically, the chapter analyses the testimonies of the Swiss medical officers Heinrich Erni and Ernest Guglielminetti, the Austrian Dr. Heinrich Breitenstein, the Czech Pavel Durdik, and the Prussian Dr. Friedrich Wilhelm Stammeshaus, who served the Dutch Colonial Armies in the 1870s and 1880s. The prime objective is to situate the positionality of these ‘foreign’, medically educated, middle-class men vis-à-vis the Dutch Empire, the Acehnese resistance, their lower-class European patients, and the indigenous soldiers and concubines they encountered. Resorting to an intersectional perspective, the chapter highlights how they discursively instrumentalized their medical expertise in claiming ideals of bourgeois masculinity in imperial settings. Simultaneously, the chapter points to the boundaries of European medicine in tropical Aceh with a particular emphasis on the ways in which ‘failures’ of Western medicine and the competition posed by indigenous healing methods threatened physicians’ allegedly hegemonic position in the imperial social formation. Lastly, it aims at complicating the significance of national belonging in transimperial collaborations by carefully comparing the accounts of ‘foreign’ medical officers from distinct national backgrounds.

In the third chapter, I focus on the ways in which Germanophone medical officers capitalized on their first-hand experiences with diseases prevalent in tropical colonies to establish themselves within the burgeoning medical field of bacteriology in the 1880s and 1890s. I demonstrate how they claimed epistemic authority through their status as practitioners in the colonies, which they portrayed as a significant advantage over their colleagues confined to European laboratories. Moreover, by applying ‘Germanophoneness’ as a lens of analysis, I illuminate the transimperial circulation of medical knowledge from and about the Dutch East Indies between Germanophone Europe, the Dutch Empire, Meiji Japan, and the German Colonial Empire. Lastly, by shifting the spotlight from laboratory scientists in Europe to ‘men on the spot’ in the colonies, the chapter sheds light on the various disputes surrounding the ‘novel’ medical paradigms proposed by bacteriologists. The focus on medical practitioners reveals a more nuanced relationship between older medical theories linking disease spread to local conditions and ‘modern’ laboratory medicine, which connects diseases to universally occurring pathogenic microorganisms. The picture that emerges from this appears less

deterministic than narratives of a ‘bacteriological revolution’ often suggest, while pointing to the ways in which the medical sciences in European regions with no or late colonies were deeply shaped by the ideological currents of European colonialism, particularly racialized notions regarding the human body and its predisposition to diseases.

The fourth chapter finally shifts the attention from military to civil medicine, with a specific focus on German and Swiss plantation physicians employed with hospitals established by European companies on Sumatra’s east coast in the broader context of the Dutch colonial government’s ‘ethical turn’ around 1900. An overarching aim is to show how the transnationally composed planters’ society on Sumatra – displaying a high number of German and Swiss plantation owners and staff – continued to provide career opportunities for physicians from Germanophone Europe even after the Dutch Colonial Army had largely ceased recruiting foreign medical personnel around 1900. German and Swiss physicians ‘on the spot’ were integral figures in the institutionalization of ‘plantation hygiene’, a medical subdiscipline established on Sumatra whose advocates claimed to have significantly improved the health of thousands of Chinese and Javanese ‘coolie’ workers. However, going beyond the surface of such a success story, the chapter critically delves into the biopolitical implications of hygiene practices directed at indentured laborers, particularly highlighting how medical knowledge and hygiene shaped racialized perceptions of Javanese and Chinese workers’ ‘fitness to labor’ in tropical conditions. Moreover, the medical knowledge produced in the plantation hospitals resulted in the establishment of villages modelled after military barracks, designed to transform ‘coolies’ from disease-carriers into ‘modern’, hygienic subjects; these practices, however, frequently met with resistance, revealing the limitations of biopolitical power. In addition, the chapter explores the extent to which medical knowledge from Sumatra’s plantation belt was leveraged from German colonial efforts in Africa and the Pacific. A further concern is to examine how German and Swiss plantation physicians drew upon their experiences in Sumatra to forge scientific careers in Europe. The final section gives a brief glimpse into the continuity of personnel within Sumatra’s plantation hospitals and the League of Nations’ malaria commissions, hinting at the colonial antecedents of the International Health Movement emerging in the mid-20th century.

1 Germanophone Physicians in the Dutch East Indies: Global Labor Markets in the Age of Empire

On August 30, 1879, Dr. Conrad Kläsi, a physician hailing from the quaint town of Niederurnen in the Swiss Canton of Glarus, embarked on a voyage to the Dutch East Indies, today's Indonesia. After only a few weeks, he arrived in Batavia (present-day Jakarta), having sailed aboard the steamship "Prinses Amalia".¹⁰⁰ Kläsi was one among 354 physicians from the German-speaking parts of Switzerland, the Austrian-Hungarian Empire, and the German States and Empire who joined the *Koninklijk Nederlandsch-Indisch Leger* (Dutch East Indies Army; or KNIL) between 1816 and 1904 to serve in the Dutch East Indies as medical officer. Despite their proportionally high number – physicians from Germanophone Europe made up for a majority of the KNIL's 'foreign' medical personnel throughout the 19th century – their case has barely fallen under historiographical scrutiny so far.¹⁰¹

Meanwhile, an extensive and steadily expanding body of historical research has shed light on the significance of overseas emigration by German-speaking individuals to various 'foreign' imperial territories.¹⁰² The historians H. Glenn Penny and Stefan Rinke even goes as far as to regard such global migration patterns as proof for the "inherently polycentric character of German nationhood" – explicitly understanding 'Germans' as a community of individuals

¹⁰⁰ See 'Vertrokken Passagiers', in: *Het Vaderland*, 1 September 1879; 'Vertrokken Passagiers per S. S. Prinses Amalia op 30 Augustus 1879, van Amsterdam naar Batavia', in: *Java-Bode*, 1 October 1879.

¹⁰¹ One important exception is the seminal study of the historian Philipp Teichfischer, who traced the recruitment of German physicians for the KNIL from 1816 to 1884. See Teichfischer, 'Transnational Entanglements in Colonial Medicine'.

¹⁰² See Manjapra, Kris: *Age of Entanglement. German and Indian Intellectuals across Empire*, Cambridge: Harvard University Press 2014; Panayi, Panikos: *The Germans in India. Elite European Migrants in the British Empire*, Manchester: Manchester University Press 2017; Penny, H. Glenn: *German History Unbound. From 1750 to the Present*, Cambridge: Cambridge University Press 2022; Grimmer-Solem, Erik: *Learning Empire. Globalization and the German Quest for World Status, 1875-1919*, Cambridge: Cambridge University Press 2019; Katöfer, Gabi: *Devouring Culture. Cannibalism, National Identity, and Nineteenth-Century German Emigration to Brazil*, in: Finger, Anke/Kathöfer, Gabi/Larkosh, Christopher (eds): *KulturConfusã. On German-Brazilian Interculturalities*, Berlin: De Gruyter 2015, pp. 71–94; Forbes, Ian L. D. (1978): 'German Informal Imperialism in South America before 1914', in: *The Economic History Review* 31 (3), pp. 384–398. Also see the contributions in the special issue 'Rethinking Germans Abroad', in: *Geschichte und Gesellschaft* 41 (2), 2015. For Switzerland, see Ziegler, Béatrice: *Schweizer statt Sklaven. Schweizerische Auswanderer in den Kaffee-Plantagen von São Paulo (1852-1966)*, Stuttgart: Steiner 1985; Holenstein, André/Kury, Patrick/Schulz, Kristina: *Schweizer Migrationsgeschichte. Von den Anfängen bis zur Gegenwart*, Basel: Hier und Jetzt 2018, pp. 187–208; Siegrist, Stefan: *Schweizer im Fernen Osten. Viele Loyalitäten, eine Identität*, Munich: Iudicum 2011. For the Habsburg Empire, see Prokopovych, Markian (2016): 'Urban History of Overseas Migration in Habsburg Central Europe. Vienna and Budapest in the Late Nineteenth Century', in: *Journal of Migration History* 2 (2), pp. 330–351; Steidl, Annemarie: *On Many Routes. Internal, European, and Transatlantic Migration in the Late Habsburg Empire*, West Lafayette: Purdue University Press 2021.

speaking the German language rather than a social group tied together by national belonging.¹⁰³ A substantial portion of literature on overseas migration from Germanophone Europe to ‘foreign’ colonial territories has, however, at least one major shortcoming: Historians have mainly focused on individuals aspiring to emigrate for the long-term or with the intention to permanently settle. According to the historian Philipp Krauer, such an “overly narrow migration concept of linear and long-term settlement” ignores a further, important form of migration in the age of empire, namely “military labor migration limited to a certain period of life.”¹⁰⁴

During the 19th century, German-speaking physicians who joined Dutch services in Southeast Asia, too, were not sought for long-term positions, nor did most express a desire to permanently settle in the Dutch East Indies. In an attempt to make sense of the (temporary) recruitment of European ‘foreigners’ for imperial services, historians such as Bernhard C. Schär, Moritz von Brescius, and others have characterized the global labor market in the Age of Empire in terms of “demands and opportunities”. According to their analysis, European colonial powers never possessed sufficient knowledge, manpower, or resources within their national territories to sustain, conquer, or explore their imperial overseas possessions. Consequently, a worldwide “demand” for various forms of (military, scientific, economic, or other) labor and expertise emerged. For these ‘experts’ themselves, serving a ‘foreign’ empire opened numerous “opportunities” (and risks) for travel, adventure, economic advancement, or scientific exploration, particularly if they hailed from regions without colonial possessions of their own.¹⁰⁵

¹⁰³ Penny, H. Glenn H./Rinke, Stefan (2015): ‘Germans Abroad. Respatializing Historical Narrative’, in: *Geschichte und Gesellschaft* 41 (2), pp. 173–196, here p. 173.

¹⁰⁴ Krauer, Philipp (2021): ‘Zwischen Geld, Gewalt und Rassismus. Neue Perspektiven auf die koloniale Schweizer Söldnermigration nach Südostasien, 1848-1914’, in: *Schweizerische Zeitschrift für Geschichte* 71 (2), pp. 229–250, here p. 229. For the shortcomings in colonial migration history also see Bosma, Ulbe (2007): ‘Sailing through Suez from the South. The Emergence of an Indies-Dutch Migration Circuit, 1815-1940’, in: *The International Migration Review* 41 (2), pp. 511–536. Also see Zangger, Andreas: *Koloniale Schweiz. Ein Stück Globalgeschichte zwischen Europa und Südostasien (1860-1930)*, Bielefeld: Transcript 2011, pp. 16–21; Bosma, Ulbe/Kessler, Gijs/Lucassen, Leo (eds): *Migration and Membership Regimes in Global and Historical Perspective. An Introduction*, Leiden: Brill 2013.

¹⁰⁵ See Schär, Bernhard C. (2019): ‘Introduction. The Dutch East Indies and Europe, ca. 1800-1930. An Empire of Demands and Opportunities’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 4–20; Von Brescius, Moritz: *German Science in the Age of Empire. Enterprise, Opportunity and the Schlagintweit Brothers*, Cambridge: Cambridge University Press 2019; Bartoletti, Tomás (2023): ‘Global Territorialization and Mining Frontiers in Nineteenth-Century Brazil. Capitalist Anxieties and the Circulation of Knowledge between British and Habsburgian Imperial Spaces, ca. 1820-1850’, in: *Comparative Studies in Society and History* 65 (1), pp. 81–114; Martykánová, Darina/Kocaman, Meltem: ‘A Land of Opportunities. Foreign Engineers in the Ottoman Empire’, in: Roldán, Concha/Brauer, Daniel/Rohbeck, Johannes (eds): *Philosophy of Globalization*, Berlin: De Gruyter 2018, pp. 237–252; Alsaker Kjerland, Kirsten/Enge Bertelsen, Bjørn (eds): *Navigating Colonial Orders. Norwegian Entrepreneurship in Africa and Oceania*, New York: Berghahn 2015; Blaser, Claire Louise/Ligtenberg, Monique/Selander, Josephine (2021): ‘Introduction. Transimperial Webs of Knowledge at the Margins of Imperial Europe’, in: *Comparativ* 31 (5/6), pp. 527–539; Røge, Pernille (2021): ‘Colonialism and Abolitionism from the Margins of European Empires. Paul Erdmann Isert, Carl Bernhard Wadström, and the

The case of Germanophone physicians in Dutch services is situated at the intersection of two distinct forms of expertise sought after by the major European imperial powers: transimperial demands for scientific – including medical – expertise, on the one hand, and global markets for military labor, on the other. Throughout the 19th century, the KNIL controlled the Dutch East Indies’ health care institutions. While being sought-after primarily for their medical knowledge, German, Swiss, and Austrian physicians were employed within a strictly military context. They received, like the combatant troops, fixed-term contracts, wore uniforms, and were housed in cantonments. It is due to this close connection between medical training and military employment that I propose the term ‘medical mercenaries’ to grasp the historically strong presence of Germanophone physicians in the Dutch East Indies.

The prime aim of this chapter is to situate the phenomenon of ‘medical mercenaries’ within the broader context of 19th-century global markets for labor and expertise. In the initial section, the focus lies on elucidating the transimperial demands for scientific expertise.¹⁰⁶ I argue that due to the comparatively early differentiation of scientific disciplines in Germanophone Europe as well as the region’s late (or lack of) own colonial territories, the scientific and technical knowledge of university-trained men from Switzerland, the German States and Empire, and the Habsburg Empire was particularly sought after by the major colonial powers, including the Dutch Empire. The second section delves into the pivotal role played by the KNIL in driving the recruitment of Germanophone experts for Dutch imperial services. Owing to the military monopoly on the Dutch East Indies’ health care, the Dutch Colonial Army emerged as the largest employer of university-educated, European ‘foreigners.’ Hence, I suggest that the KNIL thereby became an important hub for the production of knowledge on the Dutch East Indies’ flora, fauna, environment, and diseases. Moreover, the inherently gendered dimension of the emigration of educated ‘experts’ from Europe to the colonized world has barely been addressed in historiography so far. I thus argue that to physicians themselves joining the Dutch Colonial Army allowed them to strive for bourgeois masculinity ideals embodied by world-travelling scientists such as Alexander von Humboldt, or to restore a perceived loss of bourgeois respectability. Finally, the last section places ‘medical mercenaries’ in the larger trajectories of

Structures of Transimperial Knowledge Production, c. 1780-1800’, in: *Comparativ* 31 (5/6), pp. 540–554; Toivanen, Mikko (2023): ‘A Nordic Colonial Career Across Borders. Hjalmar Björling in the Dutch East Indies and China’, in: *The Journal of Imperial and Commonwealth History* 51 (3), pp. 421–441; Conway, Stephen: *Britannia’s Auxiliaries. Continental Europeans and the British Empire, 1740-1800*, Oxford: Oxford University Press 2017; Hennessey, John L./Lathi, Janne (2023): ‘Nordics in Motion. Transimperial Mobilities and Global Experiences of Nordic Colonialism’, special issue in: *The Journal of Imperial and Commonwealth History* 51 (2).
¹⁰⁶ The concept ‘transimperial’ is discussed in more detail in the introduction. My use of the term is largely informed by Hedinger, Daniel/Heé, Nadin (2018): ‘Transimperial History. Connectivity, Cooperation and Competition’, in: *Journal of Modern European History* 16 (4), pp. 429–452.

transimperial markets for military labor emerging in the 19th century. I demonstrate that in recruiting ‘medical mercenaries’ for service in the Dutch East Indies, the Dutch Colonial Army could tap into existing recruitment networks established for combatant troops throughout Germanophone Europe. Taken together, this chapter seeks to shed fresh insights on the transimperial markets for experts and expertise, as well as on the profound interconnection between European (medical) knowledge and colonial military violence and conquest in the 19th century.

1.1 Transimperial Demands for Scientific Expertise

In recent years, a large and growing body of research has pointed to the crucial role played by science in the political and military consolidation as well as the moral justification of imperial rule and, in turn, the indispensable place of empire in the making of early modern and modern science.¹⁰⁷ In the recently published Routledge Handbook of Science and Empire, Andrew Goss goes as far as to speak of an “imperial turn” in the history of science. He highlights how historians have progressed beyond a diffusionist perspective that solely attributes the ‘origin’ of modern science to Europe, from where it spread around the world. Instead, Goss identifies a more intricate viewpoint that emphasizes the co-construction of science between Europe and its colonies through “complex systems, institutions, and networks which were not only interwoven, but supported, nurtured, and sustained each other.”¹⁰⁸ One crucial aspect of this ‘turn’ lies in the recognition of the inherently transnational or transimperial nature of scientific knowledge production. This means that, on the one hand, historians have acknowledged the significant impact of indigenous experts and expertise on ‘European’ science as well as the “hybrid” or “pidginized” nature of knowledge at large.¹⁰⁹ On the other hand,

¹⁰⁷ See, for example, Duarte da Silva, Matheus Alves/Haddad, Thomás A. S./Raj, Kapil (eds): *Beyond Science and Empire. Circulation of Knowledge in an Age of Global Empires, 1750-1945*, London: Routledge 2023; Bennett, Brett/Hodge, Joseph (eds): *Science and Empire. Knowledge and Networks of Science Across the British Empire, 1800-1970*, London: Palgrave Macmillan 2011; Goss, Andrew (ed): *The Routledge Handbook of Science and Empire*. London: Routledge 2021; Boscani Leoni, Simona et al. (eds): *Connecting Territories. Exploring People and Nature, 1700-1850*, Leiden: Brill 2022; Raj, Kapil: *Relocating Modern Science. Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900*, New York: Palgrave Macmillan 2007; Delbourgo, James/Dew, Nicholas (eds): *Science and Empire in the Atlantic World*, New York: Routledge 2008; Stolz, Daniel: *The Lighthouse and the Observatory. Islam, Science, and Empire in Late Ottoman Egypt*, Cambridge: Cambridge University Press 2018; Delmas, Catherine/Vandamme, Christine/Spalding Andréolle, Donna (eds): *Science and Empire in the Nineteenth Century. A Journey of Imperial Conquest and Scientific Progress*, Newcastle-upon-Tyne: Cambridge Scholars Publishing 2010; Cañizares-Esguerra, Jorge: *Nature, Empire, and Nation. Explorations of the History of Science in the Iberian World*, Stanford: Stanford University Press 2006; MacLeod, Roy: ‘Nature and Empire. Science and the Colonial Enterprise’, special issue in: *Osiris 15*, 2000; Stuchtey, Benedikt (ed): *Science across the European Empires, 1800-1950*, Oxford: Oxford University Press 2005; Ballantyne, Tony (ed): *Science, Empire, and the European Exploration of the Pacific*, Aldershot: Ashgate Variorum 2004.

¹⁰⁸ Goss, Andrew: ‘Introduction. An Imperial Turn in the History of Science’, in: idem, *The Routledge Handbook of Science and Empire*, pp. 1–9, here p. 1.

¹⁰⁹ See Raj, Kapil (2023): ‘William Jones and Intercultural Knowledge Production’, in: *Global Intellectual History*, online, DOI: [10.1080/23801883.2023.2184405](https://doi.org/10.1080/23801883.2023.2184405); Alberts, Tara/Fransen, Sietske/Leong, Elaine (2022): ‘Translating Medicine, ca. 800-1900. Articulations and Disarticulations’, in: *Osiris 37*, pp. 1–21; Fischer-Tiné, Harald: *Pidgin-Knowledge. Wissen und Kolonialismus*, Zürich: Diaphenes 2018; Raj, Kapil: ‘Go-Betweens, Travelers, and Cultural Translators’, in: Lightman, Bernard (ed): *A Companion to the History of Science*, Malden: Wiley Blackwell 2016, pp. 39–57; Schiebinger, Londa: *Secret Cures of Slaves. People, Plants, and Medicine in the Eighteenth-Century Atlantic World*, Stanford: Stanford University Press 2017; Schaffer, Simon et al. (eds): *The Brokered World. Go-Betweens and Global Intelligence, 1770-1820*, Sagamore Beach: Science History Publications 2009; Mukharji, Projit Bihari: *Doctoring Traditions. Ayurveda, Small Technologies, and Braided Science*, Chicago: The University of Chicago Press 2018; Ernst, Waltraud (ed): *Plural Medicine, Tradition and Modernity*, London: Routledge 2002; Arnold, David (ed): *Imperial Medicine and Indigenous Societies*, Manchester: Manchester University Press 1988.

scholars have highlighted the ways in which the production, dissemination, and circulation of scientific knowledge transcended the boundaries of individual European nation states and empires. These transimperial markets for scientific expertise and experts connected individuals from the ‘hegemonic’ imperial metropolises in Britain, the Netherlands, Portugal, Spain, or France with university-educated men from regions without formal colonial possessions.¹¹⁰ In what follows, I will outline the ways in which imperial demands for scientific expertise enabled scientists, physicians, and engineers from Germanophone Europe to map, explore, and investigate the colonized world, despite their home countries’ lack of own colonial overseas empires.

Germanophone Scientists in ‘Foreign’ Imperial Services

The European scientific exploration of Asian, African, and American flora, fauna, and peoples dates back to the era of the flourishing trading companies such as the Dutch East and West India Companies (*Verenigde Oostindische Compagnie* [VOC]; *Westindische Compagnie* [WIC]) or the British East India Company (EIC) during the 17th and 18th centuries, coinciding with the ‘Scientific Revolution’ in Europe and growing European interests in the scientific enquiry of nature.¹¹¹ Historians have pointed to the broad variety of actors and institutions involved in knowledge production in the early modern world, ranging from European royal

¹¹⁰ See, for example, Schär, Bernhard C. (2019): ‘From Batticaloa via Basel to Berlin. Transimperial Science in Ceylon and Beyond around 1900’, in: *The Journal of Imperial and Commonwealth History* 48 (2), pp. 230–262; Von Brescius, Moritz (2020): ‘Empires of Opportunity. German Naturalists in British India and the Frictions of Transnational Science’, in: *Modern Asian Studies* 55 (6), pp. 1–46; Schilling, Lothar/Vogel, Jakob (eds): *Transnational Cultures of Expertise. Circulating State-Related Knowledge in the 18th and 19th Centuries*, Berlin: De Gruyter 2019; Veres, Madalina Valeria (2014): ‘Unravelling a Trans-Imperial Career. Michel Angelo de Blasco’s Mapmaking Abilities in the Service of Vienna and Lisbon’, in: *Itinerario* 38 (2), pp. 75–100; Arnold, David (2015): ‘Globalization and Contingent Colonialism. Towards a Transnational History of “British” India’, in: *Journal of Colonialism and Colonial History* 16 (2), online, DOI: [10.1353/cch.2015.0019](https://doi.org/10.1353/cch.2015.0019); Ballantyne, Tony: *Webs of Empire. Locating New Zealand’s Colonial Past*, Vancouver: UBC Press 2014; Neill, Deborah: *Networks in Tropical Medicine. Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890-1930*, Stanford: Stanford University Press 2012; Bennett, Brett: ‘The Consolidation and Reconfiguration of “British” Networks of Science, 1800-1870’, in: Bennett/Hodge (eds), *Science and Empire*, pp. 30–43; Digby, Anne/Ernst, Waltraud/Mukharji, Projit B. (eds): *Crossing Colonial Historiographies. Histories of Colonial and Indigenous Medicines in Transnational Perspective*, Newcastle upon Tyne: Cambridge Scholars Publishing 2010.

¹¹¹ There is an extensive body of literature on early modern scientific explorations and empire. Good overviews are Findlen, Paul (ed): *Empires of Knowledge. Scientific Networks in the Early Modern World*, London: Routledge 2019; Kontler, László et al. (eds): *Negotiating Knowledge in Early Modern Empires. A Decentered View*, New York: Palgrave Macmillan 2015; Schiebinger, Londa: *Plants and Empire. Colonial Bioprospecting in the Atlantic World*, Cambridge: Harvard University Press 2007; Romano, Antonella (2015): ‘Fabriquer l’Histoire des Sciences Modernes. Réflexions sur une Discipline à l’Ère de la Mondialisation’, in: *Annales. Histoire, Sciences Sociales* 70 (2), pp. 381–408; Bleichmar, Daniela et al. (eds): *Science in the Spanish and Portuguese Empires, 1500-1800*, Stanford: Stanford University Press 2009.

scientific institutions to Jesuit missionaries.¹¹² More recent historiographical inquiries have however pointed to the crucial role of trading companies such as the EIC and the VOC who, despite primarily following commercial interests, became important “knowledge networks”, providing crucial infrastructures to individual scholars eager to explore the colonized world.¹¹³ Meanwhile, the large European trading companies had enormous demands for manpower, and recruited skilled and unskilled laborers all across Europe. Germanophone Europe has been prominently showcased as one of the most important recruitment areas for the companies’ ‘foreign’ labor force.¹¹⁴ As an extensive and expanding body of research shows, many of the higher-educated recruits, in particular ship surgeons, utilized their employment to scientifically investigate the overseas territories they traveled to or were posted in. The historian Pernille Røge, for example, has illuminated the case of the Prussian physician Paul Erdmann Isert, who served the Danish slave trading fort in Ghana as a surgeon. Back in Europe, he widely published on the African soil, crops, and labor systems, severely criticizing the transatlantic slave trade.¹¹⁵ A further example is the German Engelbert Kaempfer, who traveled to Persia, India, Java, Siam,

¹¹² For the scientific exploration of the extra-European world commissioned by early modern scientific institutions see Osborne, Michael A. (2005): ‘Science and the French Empire’, in: *Isis* 96, pp. 80–87; Robson, John: *Captain Cook’s War & Peace. The Royal Navy Years 1755-1768*, Havertown: Seaforth Publishing 2009; Delbourgo, James: *Collecting the World. The Life and Curiosity of Hans Sloane*, London: Penguin Books 2018; Ballantyne (ed), *Science, Empire and the European Exploration of the Pacific*; Mackay, David: *In the Wake of Cook. Exploration, Science and Empire, 1780-1801*, London: Croom Helm 1985. For science and early modern missionary networks see Donato, Maria Pia/Pavone, Sabine: ‘Science, Empire, and the Old Society of Jesus’, 1540-1773, in: Goss (ed), *The Routledge Handbook of Science and Empire*, pp. 107–123; Waddell, Mark: *Jesuit Science and the End of Nature’s Secret*, London: Routledge 2016; Prieto, Andres I.: *Missionary Scientists. Jesuit Science in Spanish South America, 1570-1810*, Nashville: Vanderbilt University Press 2011; Hsia, Florence C.: *Sojourners in a Strange Land. Jesuits and their Scientific Missions in Late Imperial China*, Chicago: University of Chicago Press 2009; Harris, Steven (2005): ‘Jesuit Scientific Activity in the Overseas Missions, 1540-1773’, in: *Isis* 96, pp. 71–79.

¹¹³ See, for example, Huigen, Siegfried/De Jong, Jan L./Kolfin, Elmer (eds): *The Dutch Trading Companies as Knowledge Networks*, Leiden: Brill, 2010; Sargent, Matthew: ‘Recentring Centers of Calculation. Reconfiguring Knowledge Networks within Global Empires of Trade’, in: Findlen, *Empires of Knowledge*, pp. 297–316; Schiebinger, Londa/Swan, Claudia (eds): *Colonial Botany. Science, Commerce, and Politics in the Early Modern World*, Philadelphia: University of Pennsylvania Press 2007.

¹¹⁴ For the transimperial recruitment practices of the early modern trading companies, see Van Lottum, Jelle/Petram, Lodewijk: ‘In Search of Strayed Englishmen. English Seamen Employed in the Dutch East India Company in the Late Seventeenth and Eighteenth Centuries’, in: Levelt, Sjoerd/Van Raamsdonk, Esther/Rose, Michael D. (eds): *Anglo-Dutch Connections in the Early Moderns World*, New York: Routledge 2023, pp. 100–111; Van Lottum, Jelle/Lucassen, Jan/Heerma van Voss, Lex: ‘Sailors, National and International Labour Markets and National Identity, 1600-1850’, in: *Shipping and Economic Growth 1350-1850*, Leiden: Brill 2011, pp. 309–351; Schär, ‘The Dutch East Indies and Europe’; Lucassen, Jan (2004): ‘A Multinational and its Labor Force. The Dutch East India Company, 1595-1795’, in: *International Labor and Working-Class History* 66, pp. 12–39. For the presence of soldiers, sailors, and physicians from Germanophone Europe on board of the company ships, see Tzoref-Ashkenazi, Chen: *German Soldiers in Colonial India*, London: Routledge 2016; Reyes, Raquel: ‘German Apothecaries and Botanists in Early Modern Indonesia, the Philippines, and Japan’, in: Berghoff, Hartmut/Biess, Frank/Strasser, Ulrike (eds): *Explorations and Entanglements. Germans in Pacific Worlds from the Early Modern Period to World War I*, New York: Berghahn 2019, pp. 35–54; Van Gelder, Roelof: *Het Oost-Indisch Avontuur. Duitsers in Dienst van de VOC (1600-1800)*, Nijmegen: Sun 1997; Blussé, Leonard/De Moor, Jaap: *Een Zwitsers Leven in de Tropen. De Lotgevallen van Elie Ripon in Dienst van de VOC (1618-1626)*, Amsterdam: Prometheus 2016.

¹¹⁵ See Røge, ‘Colonialism and Abolitionism from the Margins of European Empires’.

and Japan in the 17th century in the course of his employment as a ship surgeon with the VOC. His publications on Japanese plants would become reference works for European botanists studying the East Asian flora in the centuries to follow.¹¹⁶

From the late 18th century onwards, German universities experienced a comparatively early differentiation of scientific disciplines. The contributions of Alexander von Humboldt, commonly referred to as “Humboldtian science”, in particular, played a significant role in elevating the standing of the German educational system across Europe. As a result, scientists educated in Germanophone institutions of higher education, especially in the realms of natural history and technology, greatly benefited from this enhanced reputation, further increasing imperial demands for their expertise.¹¹⁷ The historian Ulrike Kirchberger, for example, has demonstrated how the British Indian Forestry Service employed German botanists and foresters to professionalize British forestry in India.¹¹⁸ Moritz von Brescius has followed the traces of the German Schlagintweit brothers who, supported by Alexander von Humboldt himself, sought employment with the British East India Company to systematically record the topography, geology, and peoples of the British colonial holdings in Asia.¹¹⁹ The historian David Arnold identified four main factors for the high presence of German experts in service of the British Empire: First, other than the French, Germans were not regarded as imperial rivals. Second, he implies that the German States had “a greater pool of scientific and technical expertise than Britain.” Third, with the German States’ lack of own overseas territories, German scientists were “available for hire in India.” Fourth, Arnold points to the exceptionally well “equipped” and “dedicated” research culture within German universities.¹²⁰ The case of Swiss

¹¹⁶ See De Groot, Henk: ‘Engelbert Kaempfer, Imamura Gen’emon and Arai Hakuseki. An Early Exchange of Knowledge between Japan and the Netherlands, in: Huigen/De Jong/Kolfin (eds), *The Dutch Trading Companies as Knowledge Networks*, pp. 201–209; Reyes, ‘German Apothecaries and Botanists in Early Modern Indonesia, the Philippines, and Japan’.

¹¹⁷ See Daum, Andreas: ‘German Naturalists in the Pacific around 1800. Entanglement, Autonomy, and a Transnational Culture of Expertise’, in: Berghoff/Biess/Strasser (eds), *Explorations and Entanglements*, pp. 79–102; Von Brescius, *German Science in the Age of Empire*; Gascoigne, John: ‘The German Enlightenment and the Pacific’, in: Wolff, Larry/Cipollini, Marco (eds): *The Anthropology of the Enlightenment*, Stanford: Stanford University Press 2007, pp. 141–171; Daum, Andreas: ‘Science, Politics, and Religion. Humboldtian Thinking and the Transformations of Civil Society in Germany, 1830-1870’, in: *Osiris 17*, pp. 107–140; Dettelbach, Michael: ‘Humboldtian Science’, in: Jardine, Nicholas/Secord, James/Spary, Emma (eds): *Cultures of Natural History*, Cambridge: Cambridge University Press 1996, pp. 287–304.

¹¹⁸ See Kirchberger, Ulrike: ‘Between Transimperial Networking and National Antagonism. German Scientists in the British Empire During the Long Nineteenth Century’, in: Goss (ed), *The Routledge Handbook of Science and Empire*, pp. 138–147; idem: ‘German Scientists in the Indian Forest Service. A German Contribution to the Raj?’, in: *The Journal of Imperial and Commonwealth History 29 (2)*, 2001, pp. 1–26.

¹¹⁹ See Von Brescius, Moritz: *German Science in the Age of Empire*.

¹²⁰ Arnold, ‘Globalization and Contingent Colonialism’. Also see Manjapra, *Age of Entanglement*; Rüger, Jan: ‘Writing Europe into the History of the British Empire’, in: Arnold, John H./Milton, Matthew/Rüger, Jan (eds): *History after Hobsbawm. Writing the Past for the Twenty-First Century*, Oxford: Oxford University Press 2017, online, DOI: <https://doi.org/10.1093/oso/9780198768784.003.0003>.

and Austrian scientists in ‘foreign’ imperial services is significantly less well researched so far, but more recently published case studies indicate a similar pattern, not least because of the close, transimperial academic exchanges between German-speaking scholars from different national backgrounds.¹²¹

Germanophone scientists found serving under ‘foreign’ imperial powers potentially appealing since their regions of origin lacked overseas territories for most of the 19th century. Due to the hegemonic European imperial powers’ high demands for scientific expertise, scientists only seldomly met with resistance in being granted access to colonial infrastructures, at least as long as they were not regarded as spies or as imperial competition.¹²² Moreover, scientific expeditions to colonized territories often served as a launching pad for promising academic careers in Europe itself or enhanced individual scientists’ symbolic capital as they could present themselves to their families, friends, and acquaintances ‘at home’ as widely travelled, educated bourgeois men.¹²³ Meanwhile, the differentiation of comparative, taxonomic disciplines such as zoology, botany, or geology resulted in growing demands for specimens from all around the world. Museums and universities in the German States and Empire, Switzerland, and the Habsburg Empire thus relied on a global network of merchants, scientists, physicians, missionaries, or planters in the territories of ‘foreign’ imperial powers who would diligently send new objects for comparison. As a result, scientific institutions in Germanophone Europe directly profited from the burgeoning transimperial market for scientific (and other forms of) expertise that emerged in the early modern world and intensified throughout the 19th century.¹²⁴

¹²¹ See Schär, ‘From Batticaloa via Basel to Berlin’; Blaser, Claire Louise (2021): ‘Sanskrit Roots in the Swiss *Idiotikon*: Early Indology in Switzerland between National Identity Formation and European Imperial Imaginaries’, in: *Comparativ* 31 (5-6), pp. 591–611; Bartoletti, ‘Global Territorialization and Mining Frontiers in Nineteenth-Century Brazil’; Biçer-Deveci, Elife/Brandenburg, Ulrich (eds): ‘The Ottoman Empire and the “Germansphere” in the Age of Imperialism’, special issue in: *Comparativ* 32 (3-4), 2022. Also see chapter 3 of this thesis.

¹²² For potential “tensions” and “frictions” emerging from such transimperial cooperations, see Von Brescius, Moritz, ‘Empires of Opportunity’.

¹²³ See Pfäffli, Lea: *Arktisches Wissen. Schweizer Expeditionen und dänischer Kolonialhandel in Grönland (1908-1913)*, Frankfurt am Main: Campus 2021; Von Brescius, Moritz/Dejung, Christof (2021): ‘The Plantation Gaze: Imperial Careering and Agronomic Knowledge between Europe and the Tropics’, in: *Comparativ* 31 (5/6), pp. 572–590; Ligtenberg, Monique (2021): ‘Contagious Connections. Medicine, Race, and Commerce between Sumatra, New Guinea, and Frankfurt, 1879-1904’, in: *Comparativ* 31 (5/6), pp. 555–571; Ligtenberg, Monique (forthcoming 2023): ‘Imperiale Männlichkeiten, zoologische Taxonomien und epistemische Gewalt. Schweizer Naturforscher in Niederländisch-Ostindien, ca. 1800-1900’, in: *L’Homme. Europäische Zeitschrift für Feministische Geschichtswissenschaft* 34 (2), pp. 67–83.

¹²⁴ See Drieënhuizen, Caroline (2019): ‘Being “European” in Colonial Indonesia. Collectors and Collections between Yogyakarta, Berlin, Dresden and Vienna in the Late Nineteenth Century’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 21–46; Zangger, *Koloniale Schweiz*, pp. 348–398; Harries, Patrick: *Butterflies & Barbarians. Swiss Missionaries & Systems of Knowledge in South-East Africa*, Oxford: J. Currey 2007; Penny, H.

Germanophone Scientists in the Dutch East Indies

As in the British Empire, in the Dutch East Indies, scientists from Germanophone Europe were highly sought after for their skills and expertise throughout the 19th century. An important landmark in the institutionalization of colonial science in the Dutch overseas empire in Southeast Asia was the foundation of the Botanical Gardens in Buitenzorg (Bogor) in 1817. Its founder Caspar Georg Carl Reinwardt was a chemist apothecary born in the small German Prussian-ruled town of Lüttringhausen. After having completed an apprenticeship with an Amsterdam-based pharmacy, he was appointed professor for natural history, chemistry, and pharmacy at the Universities of Harderwijk and Amsterdam. In 1816, following the French and British interregnum of the Dutch East Indies between 1806 and 1815, and the subsequent transfer of colonies in Southeast Asia to the Dutch Crown, Reinwardt was appointed director of the colonial Department of Agricultural Affairs, Sciences and Arts, advising the Dutch colonial government on matters of the botanical inquiry of the tropics with the aim of securing the colony's long-term profitability, in particular regarding the cultivation and exportation of cash crops.¹²⁵ The Gardens' foundation by Reinwardt marked the beginning of a series of transimperial collaborations in the scientific exploration of the Malay Archipelago's flora and fauna in the 19th century, with botanists, zoologists, geologists, and physicians from Germanophone Europe being the largest group of non-Dutch scientists serving the Dutch colonial science institutions. In 1823, Reinwardt was appointed to the professorship of natural history at the University of Leiden, handing over his previous role as director of the Buitenzorg Garden to his compatriot, the Braunschweig-born physician Carl Ludwig Blume. Under the direction of Reinwardt and Blume, the Botanical Gardens were transformed into a center for compiling data on the flora and fauna from all over the Archipelago. Moreover, the Buitenzorg botanists received plant specimens and seeds from other gardens all over the world, eventually turning the Garden into a global hub for experimenting with the acclimatization of agriculturally and medically 'useful' plants in the tropics. The Gardens' library included taxonomic literature by renowned naturalists from France, Germany, and Scandinavia.¹²⁶ The establishment of the

Glenn: *Objects of Culture. Ethnology and Ethnographic Museums in Imperial Germany*, Chapel Hill: The University of North Carolina Press 2002.

¹²⁵ See Weber, Andreas: *Hybrid Ambitions. Science, Governance, and Empire in the Career of Caspar C. G. Reinwardt (1773-1854)*, Amsterdam: Leiden University Press 2012; Weber, Andreas/Wille, Robert-Jan (2018): 'Laborious Transformations. Plants and Politics at the Bogor Botanical Gardens', in: *Studium 11 (3)*, pp. 169–177, here p. 173.

¹²⁶ A concise overview of the Buitenzorg Botanical Gardens' early history can be found in Weber, Andreas (2018): 'A Garden as a Niche: Botany and Imperial Politics in the Early Nineteenth Century Dutch Empire', in: *Studium 11 (3)*, pp. 178–190 as well as Weber, *Hybrid Ambitions*. For botanical gardens as 'hubs' for transnational botanical

Botanical Gardens was closely intertwined with the formation of the *Natuurkundige Commissie voor Nederlands-Indië* (Natural History Commission for the Dutch East Indies), a state-funded research commission with the primary objective of collecting plant and animal specimens from all over the Malay Archipelago. These specimens were to be examined and taxonomically indexed in research stations and universities in the Netherlands and the Indies. Like botanical gardens, the Commissie's activities heavily relied on the contributions from naturalists hailing from the German States and Switzerland. Throughout its existence, out of the 14 naturalists employed with the *Commissie*, 8 (Heinrich Boie, Heinrich Bürger, Franz Wilhelm Junghuhn, Heinrich Kuhl, Heinrich Christian Macklot, Salomon Müller, Carl Anton Schwaner, Alexander Zippelius), hailed from German States, one (Ludwig Horner) from Switzerland, and one (Pierre-Médard Diard) from France. Their main task was to collect animal and plant specimens from 'remote' islands such as Sumatra or Celebes (Sulawesi) and to send them to the natural history museum in Leiden and the Botanical Gardens in Buitenzorg for further investigation. The Gardens, in turn, provided the *Commissie* naturalists with tools, infrastructures, and networks to conduct their fieldwork and write up their findings. Many *Commissie* members would publish botanical and zoological reference works based on their fieldnotes and were regarded as renowned experts on the Malay Archipelago's flora and fauna throughout Europe.¹²⁷

In 1825, due to the colony's failure to generate short-term profits, the Dutch King Willem I decided to reduce the colonial government's budget for the Dutch East Indies, which also affected funding for the Botanical Gardens in Buitenzorg that was temporarily closed in 1826. The *Commissie* was permanently dissolved in 1850.¹²⁸ The Botanical Gardens would experience a 'revival' at the turn of the 20th century, when the Dutch botanist Melchior Treub transformed them into an internationally renowned training center for 'agricultural experts.' His initiatives attracted hundreds of visiting researchers from the German Empire, Switzerland,

research in the age of empire more broadly, see the pioneering study by Drayton, Richard: *Natures Government. Science, Imperial Britain, and the 'Improvement' of the World*, New Haven: Yale University Press 2000. For more recent studies on colonial agriculture and botany see the contributions in Kirchberger, Ulrike/Bennett, Brett M. (eds): *Environments of Empire. Networks and Agents of Ecological Change*, Chapel Hill: The University of North Carolina Press 2020.

¹²⁷ For the transnational dimension of the Commissie's activities, see Weber, Andreas (2019): 'Collecting Colonial Nature. European Naturalists and the Netherlands Indies in the Early Nineteenth Century', in: *BMGN – Low Countries Historical Review* 134 (3), pp. 72–95; Van Wingerden, Pieter (2020): 'Science on the Edge of Empire. E. A. Forsten (1811–1843) and the Natural History Committee (1820–1850) in the Netherlands Indies', in: *Centaureus* 62 (4), pp. 797–821.

¹²⁸ See Weber, 'A Garden as a Niche', p. 189.

France, Belgium, and the USA, who hoped to further their knowledge on the cultivation of economically lucrative plants such as rubber, tobacco, or cinchona.¹²⁹

In the eyes of the colonial government, however, the Gardens and the *Commissie* largely failed to produce knowledge perceived as ‘useful’ enough to be translated into profits. In his seminal study on the history of science in colonial and postcolonial Indonesia, the historian Andrew Goss thus identifies the “state-sponsored” scientific institutions established by the Dutch colonial government as a “failure of enlightenment”. His argument centers around the observation that the state monopoly on scientific research gave rise to a class of “botanic bureaucrats.” The dependency of individual scientists on the Colonial Governments’ primarily economic interest in scientific research, he argues, prevented them from creating “enlightened knowledge” about the regions’ nature.¹³⁰ By basing his argument on “a normative notion of how modern science has emerged” and thereby focusing exclusively on formalized, European scientific practices and institutions, Goss however missed the various contributions of indigenous and European ‘go-betweens’ agitating outside of institutionalized science.¹³¹ This includes the crucial role of the Dutch Colonial Army both as a site of knowledge production and a recruiter for experts and expertise. Carl Ludwig Blume, for example, initially travelled to Southeast Asia in 1818 as a second-class military surgeon employed with the KNIL.¹³² It was in the context of his military employment that he met Reinwardt on Java, who recruited him as a director for the Buitenzorg Botanical Gardens after being, according to the historian Andreas Weber, “[i]mpressed by Blume’s eagerness and floral expertise.”¹³³ The Swiss physician Ludwig Horner too, joined the KNIL as a medical officer in 1834 before being appointed a member of the *Commissie* in 1835.¹³⁴ In the same year, the German physician Franz Wilhelm Junghuhn enlisted with the KNIL where he served as a medical officer for a decade before becoming a member of the *Commissie* in 1845.¹³⁵ For his contributions to the study of the

¹²⁹ See Wagner, Florian: ‘Inventing Colonial Agronomy: Buitenzorg and the Transition from the Western to the Eastern Model of Colonial Agriculture, 1880s–1930s’, in: Kirchberger/Bennett (eds), *Environments of Empire*, pp. 103–128.

¹³⁰ See Goss, Andrew: *The Floracrats. State-sponsored Science and the Failure of the Enlightenment in Indonesia*, Madison: The University of Wisconsin Press 2011.

¹³¹ Weber, Andreas: ‘Review of: Andrew Goss, The Floracrats. State-sponsored Science and the Failure of Enlightenment in Indoneisa’, in: *Bijdragen tot de Taal-, Land- en Volkenkunde* 167 (2), pp. 340–342, here p. 341.

¹³² See Nationaal Archief Den Haag (NL-HaNA), Inventaris van het Archief van het Ministerie van Koloniën, Stamboeken en Pensioenregisters van Militairen KNIL in Oost- en West-Indië, 1815-1949 (1954), nummer toegang 2.10.50, inv. nr. 2, folio 314.

¹³³ Weber, ‘A Garden as a Niche’, p. 184.

¹³⁴ See NL-HaNA 2.10.50, inv. nr. 3, folio 890; Horner, Friedrich (1919): ‘Briefe und Tagebuchskizzen des Dr. med. Ludwig Horner (1811–1838) aus Niederländisch-Indien’, in: *Zürcher Taschenbuch* 46, pp. 173–217, here pp. 184f.

¹³⁵ See NL-HaNA 2.10.50, inv. nr. 3, folio 899.

malaria treatment quinine and his extensive publications on the geology, flora, and fauna of the island of Java, he would come to be remembered as “Humboldt of Java.”¹³⁶ His decade-long engagement with the KNIL is however largely absent from these accounts.

Blume, Horner, and Junghuhn gained quite some prominence for their activities in the Buitenzorg Botanical Gardens and the *Commissie*. And yet, they were not exceptional in initially joining the KNIL to pursue their interest in the scientific investigation of the Malay Archipelago. Rather, as will be discussed in the following subsection, due to its high demands for medical personnel, the KNIL became the largest employer for university-educated men from Germanophone Europe seeking to travel to and scientifically investigate the Dutch East Indies.

¹³⁶ See Sternagel, Renate: *Der Humboldt von Java. Leben und Werk des Naturforschers Franz Wilhelm Junghuhn 1809-1864*, Halle (Saale): Mitteldeutscher Verlag 2011. For Junghuhn’s cinchona experiments see Goss, *The Floracrats*, pp. 33–58.

1.2 The Dutch Colonial Army as a ‘Knowledge Hub’

One of the most important forms of expertise sought after by the European Colonial powers was medicine. As has been demonstrated by historians such as Meaghan Vaughan, David Arnold, Mark Harrison, and others, diseases such as malaria, cholera, or beriberi that prevailed in (tropical) colonies were a major threat in upholding the political and military power in European Empires as they threatened the lives of European settlers, merchants, soldiers, and scientists in the colonies and with that the success of the imperial project at large.¹³⁷ The European armies stationed in tropical colonies had a particularly pronounced need for medical personnel, as a rather crucial number of their European and indigenous soldiers succumbed to tropical diseases.¹³⁸ In the Dutch East Indies, this resulted in the fact that for most of the 19th century, the colonial health care system was virtually monopolized by the military. At the same time, the Dutch Colonial Army lacked volunteers from the Netherlands and held racist presumptions towards indigenous medicine and healers, meaning that physicians had to be recruited within the territories of neighboring European countries. In what follows, I will provide a brief overview of European imperial demands for medical expertise with a particular focus on the emergence of a military monopoly on colonial health care in the Dutch East Indies during the 19th century. I suggest that due to its significant need for medical personnel, the KNIL emerged as the largest employer of university-educated men from Germanophone Europe eager to travel to the Dutch East Indies. In the second part of this section, I delve into the motivations of ‘foreign’ physicians from Germanophone Europe to join the Dutch Colonial

¹³⁷ See, for example, Tilley, Helen: *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*, Chicago: University of Chicago Press 2011; Chakrabarti, Pratik: *Medicine and Empire, 1600-1960*, Basingstoke: Palgrave Macmillan 2014; Arnold, David: ‘Introduction. Disease, Medicine and Empire’, in: idem (ed), *Imperial Medicine and Indigenous Societies*, pp. 1–26; Arnold, David: *Science, Technology and Medicine in Colonial India*, Cambridge: University of Cambridge Press 2000; Worboys, Michael: ‘Colonial Medicine’, in: Cooter, Roger/Pickstone, John (eds): *Medicine in the Twentieth Century*, London: Taylor & Francis 2000, pp. 67–80; Arnold, David: *Colonizing the Body. State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press 1993; Worboys, Michael (1996): ‘Germs, Malaria and the Invention of Mansonian Tropical Medicine. From “Diseases in the Tropics” to “Tropical Diseases”’, in: *Clio Medica* 35, pp. 181–207; Harrison, Mark: *Public Health in British India. Anglo-Indian Preventive Medicine 1859-1914*, Cambridge: Cambridge University Press 1994; Vaughan, Megan: *Curing their Ills. Colonial Power and African Illness*, Cambridge: Polity Press 1991.

¹³⁸ See Downs, Jim: *Maladies of Empire. How Slavery, Imperialism, and War Transformed Medicine*, Cambridge: The Belknap Press of Harvard University Press 2021; Lockley, Tim: *Military Medicine and the Making of Race. Life and Death in the West India Regiments, 1795-1874*, New York: Cambridge University Press 2020; Headrick, Daniel: *The Tools of Empire. Technology and European Imperialism in the Nineteenth Century*, New York: Oxford University Press 1981; MacLeod, Roy/Lewis, Milton (eds): *Disease, Medicine and Empire. Perspectives on Western Medicine and the Experience of European Expansion*, London: Routledge 1988; Curtin, Philip: *Death by Migration. Europe’s Encounter with the Tropical World in the Nineteenth Century*, Cambridge: Cambridge University Press 1989. For the ‘medicalization of war’ resulting from military demands for medical knowledge see Harrison, Mark (1996): ‘The Medicalization of War – The Militarization of Medicine’, in: *Social History of Medicine* 9 (2), pp. 267–276.

Army, emphasizing how joining the KNIL opened the opportunity to strive for upward social mobility and hegemonic ideals of bourgeois masculinity such as adventure or scientific curiosity.

The White Man's Grave and the Military Monopoly on Health Care

Since the early days of European expansion, Europeans were baffled by the high mortality rates in the tropics.¹³⁹ Due to their allegedly pathogenic nature, tropical colonies in Asia, Africa, and the Americas earned notoriety as “White Man's Graves”. In his analysis on British and Dutch accounts on the city of Batavia (Jakarta) in the early 19th century, historian Hans Pols has shown how the Dutch East Indies were discursively constructed as a “graveyard” for Europeans due to the high prevalence of fatal diseases, with British physicians describing Batavia as the most dangerous city in the tropical zone.¹⁴⁰ These discourses were closely linked to the idea of acclimatization, or the question as to what extent Europeans could potentially adapt to the pathogenic environments encountered in the tropics and eventually become more resistant to tropical diseases.¹⁴¹ These fears surrounding deadliness of the tropics were further deepened by statistical surveys that tracked mortality rates and causes of death of European settlers and soldiers. In the Dutch East Indies, such statistics were published on an annual basis in the *Koloniaal Verslag*, the official report of the Dutch East Indies' government.¹⁴²

Throughout the 19th century, colonial governments intensified their efforts to combat the high mortality rates caused by diseases. A first driving force behind these efforts was the European hygiene movement that emerged from a growing awareness of the relationship between unsanitary conditions, disease transmission, and mortality. Consequently, European governments established hospitals and specialized committees with the specific aim of curbing disease spread and reducing mortality among the rapidly expanding European populations. In

¹³⁹ See MacLeod/Lewis (eds): *Disease, Medicine and Empire*; Curtin, *Death by Migration*.

¹⁴⁰ See Pols, Hans (2012): ‘Notes from Batavia, the Europeans’ graveyard: the nineteenth-century debate on acclimatization in the Dutch East Indies’, in: *Journal for the History of Medicine and Allied Sciences* 67 (1), pp. 120–148.

¹⁴¹ For the “acclimatization debate” see, for example, Osborne, M.A. (2000): ‘Acclimatizing the World. A History of the Paradigmatic Colonial Science’, in: *Osiris* 15, pp. 135–151; Livingstone, David N. (1999) ‘Tropical Climate and Moral Hygiene. The Anatomy of a Victorian Debate’, in: *The British Journal for the History of Science* 32 (1), pp. 93–110. For the Dutch East Indies see De Knecht-Van Eekelen, Annemarie: ‘The Debate about Acclimatization in the Dutch East Indies (1840-1860)’, in: *Medical History* 44 (20), 2000, pp. 70–85.

¹⁴² The volumes of the *Koloniaal Verslag* from 1866 to 1923 are accessible digitally in the online collections of the Leiden University. See <https://kitlv-docs.library.leiden.edu/open/Metamorfoze/Kol.%20Verslag/koloniaal%20verslag.html> [accessed: 17.03.2023].

Britain, the movement resulted in the introduction of the Public Health Act of 1848, which led to the establishment of a General Board of Health responsible for implementing nationwide measures to improve sanitation.¹⁴³ At the same time, the European public health movement increasingly informed colonial government policies aimed at combatting the high mortality rates in the tropics. Consequently, European colonial governments increased their investments in hospital systems, quarantine stations, medical education and research, and introduced (forced) vaccination services for the European and local populations in the colonies.¹⁴⁴

In the Dutch East Indies, European efforts to systematically institutionalize the improvement of health care can be traced back to the French interregnum (1806-1811). Appointed as governor of the Dutch East Indies by Napoleon in 1808, the Dutch Herman Willem Daendels implemented significant reforms to the colonial health services, dividing the European medical practitioners responsible into three categories: medical officers, surgeons, and pharmacists. Each of these categories was further divided into three classes. These reforms were part of a broader reorganization of the colonial government's military forces, leading to the complete subjugation of the colonial health care system under the army, with a primary focus on safeguarding the health of European troops. Formerly VOC-owned medical institutions, hospitals, and deposits were also placed under the army's control. Subsequently, during the British interregnum (1811-1816) under Sir Thomas Stamford Raffles, the Indies' health care system was subjected to the Bengal Medical Regulations, which introduced a systematic civil medical service, with particular emphasis on managing venereal diseases and vaccination. After the Dutch Crown took full control of the colony in 1816, the German botanist Reinwardt (see chapter 1.1.2) assumed the responsibility for organizing the colonial health care system in his capacity as head of agriculture, arts, and sciences. He further restructured the Indies' health care institutions, establishing separate divisions for civil health service, military health service, and vaccination service. However, due to several austerity measures in the colonial budget, control over the civilian and vaccination services was returned to the military in 1827. It was not until 1911 that the colonial civil medical service finally gained independence from the army.¹⁴⁵ As

¹⁴³ There is an extensive body of literature on the history of public health in Europe. Good overviews are Rosen, George: *A History of Public Health (revised and expanded edition)*, Baltimore: John Hopkins University Press 2015; Porter, Dorothy: *Health, Civilization and the State. A History of Public Health from Ancient to Modern Times*, London: Routledge 1998; La Berge, Ann F.: *Mission and Method. The Early-Nineteenth-Century French Public Health Movement*, Cambridge: Cambridge University Press 1992; Frazer, William Mowl: *A History of English Public Health 1834-1939*, London: Baillière Tindall and Cox 1950.

¹⁴⁴ The literature on public health and colonialism will be discussed in more detail in chapter 4. A good overview is Bashford, Alison: *Imperial Hygiene. A Critical History of Colonialism, Nationalism and Public Health*, Basingstoke: Palgrave Macmillan 2005.

¹⁴⁵ For an overview of the Dutch East Indies colonial health care system in the 19th century, see Tan, Sian Nio: *Zur Geschichte der Pharmazie in Niederländisch-Indien (Indonesien) 1602-1945*, Würzburg: jal-verlag 1976, pp. 61–

a result, throughout the 19th century, a majority of European medical professionals in the Dutch East Indies were employed with the KNIL.

Meanwhile, in the second half of the 19th century, the chief of the KNIL's military medical services Willem Bosch developed two of the most important fora for European physicians in the Dutch East Indies to exchange and produce knowledge on the local health conditions, diseases, and medical treatments. In 1845, he founded the *Vereeniging ter bevordering van geneeskundige wetenschappen in Nederlandsch-Indië* (Association for the Promotion of Medical Sciences in the Dutch East Indies), that, from 1852 onwards, would publish the specialized journal *Geneeskundig Tijdschrift voor Nederlandsch-Indië* (GTNI; Journal of Medicine for the Dutch East Indies). Corresponding to the military monopoly on colonial health care, medical officers were among the main contributors to the GTNI (see chapter 3). Furthermore, recognizing the chronic shortage of European-trained medical personnel, Bosch established the so-called *Dokter Djawa* schools in 1851. These schools were designed to train Javanese individuals in Western medicine and included a program for the training of indigenous midwives.¹⁴⁶ The establishment of a training center for Javanese physicians in Western medicine is characteristic of a major shift in the European colonial medical discourse of the 19th century. According to David Arnold, the second half of the 19th century marked an era “when Europeans began to pride themselves on their scientific understanding of disease causation and mocked what they saw as fatalism, superstition and barbarity of indigenous responses to disease.” Through the ‘professionalization’ of European medicine, ‘folk medicine’ became more stigmatized both in Europe and in the colonized world. This resulted in increasingly racist assumptions towards indigenous medical experts and expertise.¹⁴⁷ Even though they were trained in ‘Western’ medicine, *Dokter Djawa* were thus not recruited as medical officers until the turn of the 20th century, despite the KNIL's constant demands for medical personnel.

Instead, the KNIL recruited medical experts from non-Dutch European countries – most importantly in Germanophone Europe. In his exploratory study on German physicians in the

98; Kerkhoff, A.H.M.: ‘The Organization of the Military and Civil Medical Service in the Nineteenth Century’, in: Van Heteren, G.M/De Knecht-Van Eckelen, A./Pulissen, M.J.D. (eds): *Dutch Medicine in the Malay Archipelago 1816–1942*, Amsterdam: Rodopi 1989, pp. 9–24.

¹⁴⁶ See Tan, *Zur Geschichte der Pharmazie in Niederländisch-Indien (Indonesien)*, p. 74; Hesselink, Liesbeth: *Healers on the Colonial Market. Native Doctors and Midwives in the Dutch East Indies*, Leiden: KITLV Press, 2011.

¹⁴⁷ Arnold, ‘Introduction. Disease, Medicine and Empire’, p. 7. Also see Boomgaard, Peter: ‘Dutch Medicine in Asia, 1600–1900’, in: Arnold, David (ed): *Warm Climates and Western Medicine. The Emergence of Tropical Medicine, 1500-1900*, Amsterdam: Rodopi 1996, pp. 42–64, here p. 57.

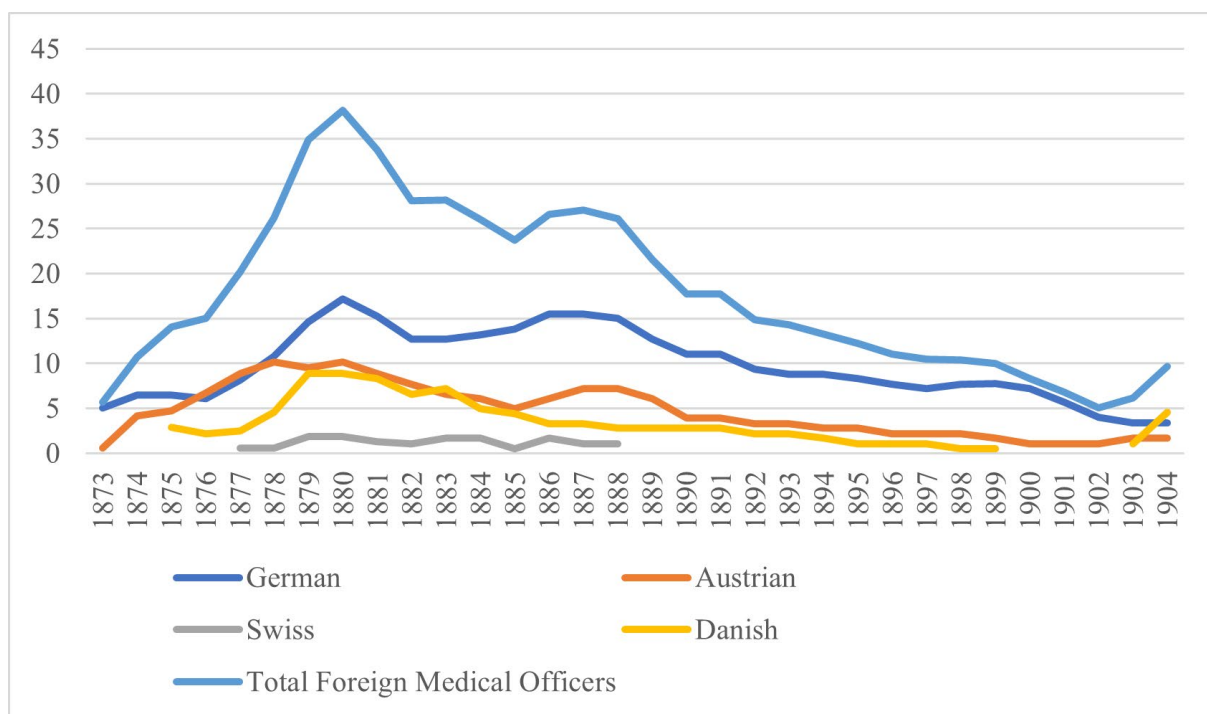


Table 1: Percentage of non-Dutch Medical Officers, 1873-1904. Source: NL-HaNA 2.10.50.

Dutch Colonial Army, the historian Philipp Teichfischer traced the recruitment of medical officers within the territory of the German States and Empire between 1816 and 1884. In the 1820s, as Teichfischer writes, German physicians accounted for 20-25% of the KNIL's medical officers, whereas in the 1840s and 50s their number revolved around 50% (between 47 and 66 individuals). In the 1860s, their numbers dropped significantly to around 18.7% before slowly rising again from the mid-1870s onwards (see below).¹⁴⁸ Recruitments usually peaked around times of war, for example in 1825 with the beginning of the Java War or the 1856 uprisings on Celebes (Sulawesi) and Borneo (Kalimantan). Physicians from the German States and Empire were however not the only 'foreign' medical experts serving the Dutch Colonial Army. In my own analysis of the Dutch Colonial Army's personnel files, the so-called *stamboeken*, I could identify a total of 50 medical officers from the Austrian-Hungarian Empire, 42 from Denmark,¹⁴⁹ 11 from Switzerland, and 10 from France, recruited by the KNIL between 1814 and 1914.¹⁵⁰ Furthermore, Teichfischer ends his investigation at 1884 with the argument that "the German colonial medicine entered a new era with the newly founded German colonies in Africa."¹⁵¹ However the outbreak of the Aceh War in Northern Sumatra in 1873 initiated a new

¹⁴⁸ See Teichfischer, 'Transnational Entanglements in Colonial Medicine', p. 65.

¹⁴⁹ The Danish case will not be considered in the framework of this thesis. It does however promise intriguing avenues for historians to explore in the future.

¹⁵⁰ The numbers of 'foreign' medical officers are based on my calculations in NL-HaNA 2.10.50, inv. nrs. 8-19, folios 2160-4897.

¹⁵¹ Teichfischer, 'Transnational Entanglements in Colonial Medicine', p. 71.

wave of recruitment of ‘foreign’ medical experts that would last until 1904 when the war was officially ended. Despite the German Empire’s own imperial ambitions in the late 19th century, German physicians continued to be recruited within this transimperial labor market for medical expertise (see table 1 and chapter 1.3.2).

Germanophone Physicians, Bourgeois Masculinity and the KNIL

What drove physicians from Germanophone Europe to join the KNIL in the first place? Focusing on the German States before 1884, Philipp Teichfischer contends that “competition was one of the strongest motives for entering the colonial medical service. One of these trends was the increasing number of medical students from the beginning of the 19th century despite a stagnation in the number of practicing doctors, resulting in an ‘overcrowding of medical profession’ and material deprivation.”¹⁵² Motives such as adventurousness and curiosity, Teichfischer writes, have to be assumed carefully as they “can also be a result of subsequent self-staging.”¹⁵³ Indeed, the “overcrowding of the medical profession” (“Überfüllung des ärztlichen Berufs”) continued to be part of the public discourse in the German Empire, in particular in the 1890s.¹⁵⁴ An article in the *Münchener Nachrichten* of 1892 even explicitly mentions the Dutch Colonial Army as one of the preferred career opportunities for unemployed German physicians, even outperforming the English colonies in popularity:

“We know German doctors in Dutch colonies who have an annual income that cannot be achieved in their home country, and who live in areas that are by no means disreputable in terms of sanitation. In addition, the Dutch welcome German doctors because of their thorough training, so that the authorities are friendly to them. In the countries dominated by the English (India, etc.), accommodation for German doctors can only be found in exceptional cases.”¹⁵⁵

The press coverage on professional “overcrowding” however peaked in the 1890s when the numbers of recruited German physicians had already dropped significantly (see chapter 1.3.2). Furthermore, if we zoom in on the individual cases, Teichfischer’s claim that competition was the prime motive for joining the KNIL can only be partially confirmed for German recruits in the time-period from 1873 to 1904, and not at all for volunteers from Switzerland. The archival

¹⁵² See Teichfischer, ‘Transnational Entanglements in Colonial Medicine’, p. 73.

¹⁵³ See *ibid.*, p. 72.

¹⁵⁴ See, for example, “Eine Abmahnung vom Studium der Medizin”, in: *Norddeutsche allgemeine Zeitung, Morgen-Ausgabe*, 24 June 1892.

¹⁵⁵ “Zur Ueberfüllung des ärztlichen Berufs”, undated newspaper snippet in: NL-HaNA, Inventaris van het Archief van het Ministerie van Buitenlandse Zaken. A-Dossiers, 1815-1940, Militaire Geneeskundige Dienst in de Koloniën 1871-1898, nummer toegang 2.05.03, inv. nr. 287, dossier A.137.

situation for the Austrian-Hungarian recruits is too fragmentary to jump to any final conclusions. Moreover, Teichfischer posits a somewhat static understanding of ‘motives’, suggesting that individual motivations persist unchanged throughout an individual physician’s life trajectory. However, a more comprehensive look at the biographies of medical officers before, during, and after their service reveals that individual pursuits could well adapt to changing circumstances over time. Finally, the motives of Germanophone physicians to join the KNIL have one important commonality: they comply with 19th century ideals of bourgeois masculinity such as economic autonomy, self-determination, respectability, honor, scientific rationality, and curiosity for learning about and travelling the world.¹⁵⁶ In other words, they were eager to become part of the “Global Bourgeoisie” emerging in the 19th century.¹⁵⁷

The case of Friedrich Wilhelm Stammeshaus is particularly revealing in the broad variety of motives and masculine ideals that could shift within the same person. Stammeshaus started studying medicine in Halle in the early 1860s. As several letters to his parents, who were well-off landowners, reveal, he seemed to have issues financing his studies. In a letter from 1865, he asks them for 35 Reichstaler for the “immatriculation, rent, the college funds [Collegiengelder], lunch, breakfast, dinner and all other expenses [...]”¹⁵⁸ In 1870, he joined the Prussian army as a medical officer to fight in the Franco-Prussian War, meaning he probably knew – more or less, at least with regard to situations of warfare – what he was getting himself into when he later joined the KNIL. Even during his enlistment, he continued to ask his parents for money.¹⁵⁹ After the War had ended, Stammeshaus decided to take the *Staatsexamen* for medical professionals. Again, he would repeatedly send letters to his parents requiring their financial aid. Interestingly, he requested the money not for everyday necessities, but rather to afford a bourgeois lifestyle. In 1873, for example, he asked his father to financially support his study trips to Utrecht and Vienna.¹⁶⁰ During his stay in Utrecht, he requested 25 Taler to attend “festivities in honor of the professors, which I could not escape.”¹⁶¹ There is a gap in the preserved correspondences between roughly 1874 and 1876, but in 1877 Stammeshaus finally decided to take a post as a ship doctor on board of a ship named Bahia, probably operated by a

¹⁵⁶ For the relationship between science and (bourgeois) masculinity see Ellis, Heather: *Masculinity and Science in Britain, 1831-1918*, London: Palgrave Macmillan 2017. The literature on masculinity formation in colonial contexts is discussed in more detail in chapter 2. For a concise overview, see the essays in Ellis, Heather/Meyer, Jessica (eds): *Masculinity and the Other. Historical Perspectives*, Newcastle upon Tyne: Cambridge Scholar Publishing 2009.

¹⁵⁷ See Dejung, Christof/Motadel, David/Osterhammel, Jürgen (eds): *The Global Bourgeoisie. The Rise of the Middle Classes in the Age of Empire*, Princeton: Princeton University Press 2019.

¹⁵⁸ Letter from Friedrich Wilhelm Stammeshaus to parents, Halle, 11. January 1865, private collection.

¹⁵⁹ Letter from Friedrich Wilhelm Stammeshaus to parents, Bonn, 16 July 1870, private collection.

¹⁶⁰ Letter from Friedrich Wilhelm Stammeshaus to father, Cologne, 19 April 1873, private collection.

¹⁶¹ Letter from Friedrich Wilhelm Stammeshaus to parents, Utrecht, 22 June 1873, private collection.

Hamburg-based shipping company.¹⁶² In the letters from his time as a ship surgeon, he repeatedly expresses his fascination for travelling the world as well as for the ‘exotic’ encounters and observations he made on the way. In a letter written from the Danish colony St. Thomas in the West Indies, he explicitly brags with the fact that “We have broadly followed the same course that Christopher Columbus took in his time when he discovered America.”¹⁶³ It might very well be that this first taste of adventure was one of the reasons he enlisted with the KNIL in 1878. Furthermore, Stammeshaus seemed to have felt shame with regard to the enormous debt he had acquired throughout his years as a medical student – which was, of course, rather dishonorable for a respectable, bourgeois man.¹⁶⁴ As he writes to his family before embarking for the Indies, “The original purpose of this momentous step, the release from the debt that has been weighing heavily on me for years, has been achieved, the Dutch government has kept everything it promised me, my debts have been paid down to the last penny.”¹⁶⁵ To Stammeshaus, however, becoming a medical officer with the KNIL would become to mean more than a bare escape from debts acquired through his early dandy lifestyle: He would take up the Dutch citizenship in 1899 and serve the KNIL until his death in 1903 (see chapter 2).

Another potential motive that might have urged physicians to search employment in the Colonial Army was a loss of reputation in their respective hometown. This seemed to have been the case with Friedrich Joseph Max Fiebig. After having applied with the Ministry of Colonies, the background screening conducted on Fiebig by German officials in Dresden stated that “Last February he [Fiebig] was involved in an affair of honor with a student and had the bad luck to wound his opponent in a duel by a pistol shot. For this, he was prosecuted and is still awaiting trial this month.”¹⁶⁶ It might very well be that Fiebig then left his hometown Leipzig to let the affair fade out – and by doing so restored his honor and respectability. Education in the larger sense is mentioned as a motive in some of the applications. The German Gustav Eckert, for example, asked in his correspondence with the Dutch Ministry of Foreign Affairs if, in case he

¹⁶² See Letter from Friedrich Wilhelm Stammeshaus to parents, On board of the Bahia, 21 February 1877, private collection.

¹⁶³ Letter from Friedrich Wilhelm Stammeshaus to parents, St. Thomas, West Indies, 9 April 1878, private collection.

¹⁶⁴ For the importance of ‘honour’ as a hegemonic ideal of bourgeois masculinity, see Frevert, Ute: *Emotions in History. Lost and Found*, Budapest: Central European University Press 2011; Schär, Bernhard C.: “‘The Swiss of All People!’ Politics of Embarrassment and Dutch Imperialism around 1900”, in: Fischer-Tiné, Harald (ed): *Anxieties, Fear and Panic in Colonial Settings*, Cham: Palgrave Macmillan 2016, pp. 279–303.

¹⁶⁵ Letter from Friedrich Wilhelm Stammeshaus to parents, Nieuwediep, 27 December 1878, private collection.

¹⁶⁶ Letter to the Dutch delegation in Berlin, Dresden, 2 November 1878, in: NL-HaNA, Inventaris van het Archief van het Nederlandse Gezantschap in Pruisen, 1814-1890, Ingekomen en Minuten van Uitgaande Brieven Betreffende de Aanwerving in Pruisen van Vrijwilligers voor het Nederlands-Inisch Leger, 1880-1883, nummer toegang 2.05.10.14, inv. nr. 211.

committed to join the KNIL, the army would finance the continuation of his medical studies in the Netherlands.¹⁶⁷ For the Swiss Dr. Conrad Kläsi – who would arrive in the Dutch East Indies in 1879 – it was scientific curiosity that drove him to join the KNIL. Despite being warned by the Senior Field Doctor (*Oberfeldarzt*) of the Swiss military about the numerous dangers and diseases that awaited in Southeast Asia, Kläsi showed little concern in his letter to the Federal Council “since he hopes to be able to devote himself to scientific studies during the time of his employment.”¹⁶⁸ As I have argued elsewhere in more detail, Kläsi would utilize the money and networks he had acquired through his colonial military service to make a name as an (amateur) zoologist and thereby strive for hegemonic masculinity ideals embodied by world-travelling men of science such as Alexander von Humboldt.¹⁶⁹ He was not the only one trying to leverage his status as a KNIL veteran to enter scientific disciplines neighboring medicine. The Austrian medical officer Heinrich Breitenstein, for example, published three memoirs about his 21 years of serving the KNIL between 1876 and 1897, covering detailed accounts of his adventures and encounters, descriptions of the local flora, fauna, and peoples, and practical medical advice.¹⁷⁰ He would spend his free time off duty hunting for ‘wild’ animals, and donated or sold several animal specimens to zoological museums across Europe.¹⁷¹ In 1881, a ‘novel’ python species was named “Python Breitensteini” in his honor by the director of the Natural History Museum of Vienna Franz Steindachner.¹⁷² The two examples align with the observation made by Douglas Peers who identified the critical role of medical officers and surgeons in the “collection, analysis and dissemination of knowledge” in colonial India.¹⁷³ At the same time, they point to the symbolic capital that could be acquired through the ‘exploration’ of a tropical colony. For similar reasons, and regardless of their initial motivation to join the KNIL, an even greater number of physicians from Germanophone Europe – including Stammeshaus and Fiebig – took advantage of their first-hand experiences with diseases they encountered during their

¹⁶⁷ Letter from Gustav Eckert to the Dutch Ministry of Foreign Affairs, Eisenach, August 12 1889, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

¹⁶⁸ Letter from Conrad Kläsi to the president of the Swiss Federal Council B. Hammer, Niederurnen, 23 May 1879, in: Bundesarchiv Bern (BAR), Eintritt von Schweizern in ausländische Armeen, Niederländische Armee, Dossier ‘Eintritt von schweiz. Aerzten in die niederl. Kolonialarmee (Oblt. Kläsi, Oblt. G. Glaser, Oblt. H. Erni, Oblt. A. Günther), 1879-1880’, BAR E27#1000/721#5748.

¹⁶⁹ See Ligtenberg, ‘Imperiale Männlichkeiten, zoologische Taxonomien und epistemische Gewalt’.

¹⁷⁰ See Breitenstein, Heinrich: *21 Jahre in Indien. Aus dem Tagebuch eines Militärarztes*, pts. 1-3, Leipzig: Th Grieben’s Verlag 1899-1901.

¹⁷¹ See, for example, Von Pelzen (1879), A.: ‘Ueber eine von Herrn Dr. Breitenstein gemachte Sammlung von Säugethieren und Vögeln aus Borneo’, in: *Verhandlungen der zoologischen-botanischen Gesellschaft in Wien XXIX*, pp. 527–532.

¹⁷² See Steindachner, F. (1881): ‘Über eine neue Pythonart (Python Breitensteini) aus Borneo’, in: *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften* 82, pp. 267f.; ‘Eine neue Art der Riesenschlange’, in: *Mährisches Tagblatt*, 23 August 1880.

¹⁷³ See Peers, Douglas (2005): ‘Colonial Knowledge and the Military in India, 1780-1860’, in: *The Journal of Imperial and Commonwealth History* 33 (2), pp. 157–180. Also see Osborne, ‘Science and the French Empire’.

service to claim scientific authority in the fields of bacteriology and tropical medicine. They kept meticulous reports on the European and indigenous patients they treated and published widely in journals such as the GTNI (see chapter 3). Owing to the limited institutionalization of colonial science in the 19th century Dutch East Indies, the KNIL thus emerged as an important site for the production of knowledge about colonized Indonesia's flora, fauna, environment, and diseases, while at the same time offering middle-class men with a medical background an exceptional opportunity to conform to and perform honorable, bourgeois masculinity ideals, situated at the intersection of scientific curiosity, military bravery, and financial security. In all of this, the Dutch recruitment of 'foreign' expertise for imperial services was closely intertwined with military interests. The last section will thus delve into the role of 19th century global markets for military labor in recruiting medical experts for the Dutch Empire in Southeast Asia.

1.3 ‘Medical Mercenaries’ and the Military Labor Market

While their medical expertise was certainly a major factor in their recruitment, Germanophone medical officers in the Dutch East Indies were primarily counted among the colony’s military personnel, particularly in terms of their employment conditions. Not only were they hired on fixed-term-contracts, obliged to wear uniforms, and granted an officer status, but their prime responsibility lay in safeguarding the health of soldiers and indentured laborers within the KNIL’s military hospitals, camps, and cantonments (see chapter 2). They were what I propose to coin ‘medical mercenaries’, situated at the intersection of demands for medical expertise and military labor. Meanwhile, in recruiting medically trained individuals for colonial services, the KNIL could tap into historically grown, transimperial markets for military labor that spanned across central and northern Europe. In what follows, I will thus place the recruitment of Germanophone medical officers for colonial services in the Dutch East Indies in the larger context of transimperial markets for military labor in the 19th century.

The KNIL and Transimperial Military Labor Markets

Since the early modern European expansion, Germanophone Europe was one of the most important regions for recruiting military labor for colonial services. Regiments consisting of soldiers from the Old Swiss Confederacy and the German States served, for example, in the American War of Independence, the Second Mysore War (1780-1784), or in the Cape Colony.¹⁷⁴ The Dutch East India Company recruited at least 60 percent of its military personnel in non-Dutch European regions, among others in the German States and German-speaking Swiss Cantons.¹⁷⁵ These Global labor markets for ‘foreign’ workforce would continue to exist after trading companies such as the VOC (bankrupt in 1799) as well as the EIC (dissolved in 1874) lost power and their colonial possessions were transferred to the European monarchies, republics, and nation states. In his seminal study *The Living Tools of Empire*, the historian

¹⁷⁴ See Tzoref-Ashkenazi, Chen: ‘Deutsche Hilfstruppen in Imperialkriegen 1776-1808’, in: Bühner, Tanja/Stachelbeck, Christian/Walter, Dierk (eds): *Imperialkriege von 1500 bis heute*, Leiden: Brill 2011, pp. 345–361, here p. 345–347; Atwood, Rodney: *The Hessians. Mercenaries from Hessen-Kassel in the American Revolution*, Cambridge: Cambridge University Press 1980; Linder, Adolphe: *The Swiss Regiment Meuron at the Cape and afterwards, 1781-1816*, Cape Town: Castle Military Museum 2000.

¹⁷⁵ See Tzoref-Ashkenazi, *German Soldiers in Colonial India*, p. 14; Schär, ‘The Dutch East Indies and Europe’, pp. 12f.; Klein, Alex/Van Lottum, Jelle (2020): ‘The Determinants of International Migration in Early Modern Europe. Evidence from the Maritime Sector, c. 1700-1800’, in: *Social Science History* 44, pp. 143–167.

Martin Bossenbroek argues that, for poorly populated countries such as the Netherlands, the state monopoly on violence emerging in the 19th century created a particularly pronounced threat to their military and political power as the demands for military could not be met within their national borders.¹⁷⁶ Hence, the Dutch Colonial Army resorted to Javanese, Ambonese, and West African soldiers who would provide the largest share of its military manpower until Indonesian independence.¹⁷⁷ Moreover, in an attempt to sustain the ‘European element’ within its troops, the KNIL recruited volunteers in its neighboring European countries, tapping into similar reservoirs of military manpower as the VOC before. As has been argued by the historian Philipp Krauer, the KNIL benefited from two major historical developments in the 19th century recruitment of European mercenaries. First, the British Empire put an end to the recruitment of European mercenaries after 1815, while the ‘imperial latecomers’ Belgium, Germany, and Italy displayed little to no demands for ‘foreign’ military personnel. The KNIL’s only ‘competition’ on the transimperial military labor market was the French Foreign Legion. Second, in the wake of growing national sentiments in Europe, several European states completely abandoned their foreign regiments. Unemployed mercenaries who had previously served in Europe could then be recruited for colonial services.¹⁷⁸ Owing to these circumstances, the Dutch Colonial Army was able to bolster its ranks of Dutch soldiers through the enlistment of foreign European volunteers, in particular if it faced a temporally increased demand for military personnel in times of war. Between 1815 and 1909, out of the approximately 174’000 Europeans within the KNIL, 24’000 originated from Belgium, 23’000 from the German States and Empire, and roughly 7’500 respectively were Swiss or French, while another 7’500 soldiers hailed from various other European regions.¹⁷⁹ In recruiting colonial mercenaries, the Dutch Colonial Army relied on a dense network of Dutch consuls and ambassadors stationed in various European countries as well as official recruitment agencies. These agencies were often run by retired mercenaries. The Dutch recruitment agency in Altona aiming at recruiting Danish and Norwegian volunteers for the Dutch Colonial Army in the 1860s, for example, employed a

¹⁷⁶ Bossenbroek, Martin (1995): ‘The Living Tools of Empire: The Recruitment of European Soldiers for the Dutch Colonial Army, 1814–1909’, in: *The Journal of Imperial and Commonwealth History* 23, pp. 26–53.

¹⁷⁷ See De Moor, Jaap: ‘The Recruitment of Indonesian Soldiers for the Dutch Colonial Army, c. 1700–1950’, in: Killingray, David/Omissi, David (eds): *Guardians of Empire. The Armed Forces of the Colonial Powers, c. 1700–1964*, Manchester: Manchester University Press 1999, pp. 53–69; Teitler, Gerke: ‘The Mixed Company. Fighting Power and Ethnic Relations in the Dutch Colonial Army, 1890–1920’, in: Hack, Karl (ed): *Colonial Armies in Southeast Asia*, London 2006, pp. 146–160.

¹⁷⁸ See Krauer, Philipp: *Colonial Mercenaries. Swiss Military Labour and the Dutch East Indies, c. 1848–1914*, PhD thesis, ETH Zurich, Zurich 2022, pp. 19–54.

¹⁷⁹ Numbers based on Bossenbroek, Martin: *Volk voor Indië. De Werving van Europese Militairen voor de Nederlandse Koloniale Dienst 1814–1909*, Amsterdam: Van Soeren 1992. Also see Krauer, *Colonial Mercenaries*, p. 38.

former captain of the British-Swiss Legion.¹⁸⁰ In the spirit of nationalism following the 1848 revolutions in Europe, newly founded nation states such as Switzerland would however establish stricter laws concerning the recruitment of soldiers for foreign military services and most official agencies had to be shut down.¹⁸¹

In his groundbreaking research on Swiss mercenaries in the Dutch Colonial Army, Philipp Krauer reveals that despite the official prohibition of actively endorsing foreign military service on Swiss soil after the establishment of the Swiss nation state in 1848, the recruitment of Swiss volunteers for military duty in the Dutch East Indies persisted well into the early 20th century.¹⁸² When it came to identifying and recruiting prospective Swiss men, the KNIL could rely on a dense network of recruitment agents who ‘lured’ Swiss into Dutch services.¹⁸³ As various documents held in the Dutch National Archives in Den Haag suggest, Krauer’s findings can be extended to recruitments within the German States and Empire.¹⁸⁴ An illustrative example of this is a letter from R. Klinkenberg, a German restaurant owner and recruitment agent residing in Harderwijk, to “the innkeeper [Wirth] of the inn [Herberge] ‘Zur Heimath’” from 1882. Klinkenberg writes that he had heard that the innkeeper served “many young people who go to Holland to be recruited for the Indies.” He then inquires whether he was “inclined to send me people, since you can make a lot of money doing so.” More specifically, Klinkenberg suggests that the innkeeper sent him the volunteers’ papers for examination first, and that he would then receive money so that “the young man can travel to Neuhaus, where I will pick him up.”¹⁸⁵

¹⁸⁰ See documents held in NL-HaNa, Inventaris van het Archief van het Nederlandse Gezantschap in Denemarken, 1815-1863 (1909), 1920-1940, Ingekomen en Minuten van Uitgaande Brieven Betreffende de Nederlandse Keuringscommissie te Altona voor de Werving van Noordse en Zweedse Vrijwilligers voor het Nederlands-Indische Leger, nummer toegang 2.05.45, inv. nr. 70.

¹⁸¹ See Bossenbroek, *Volk voor Indië*, pp. 158f.; Krauer, Philipp (2019): ‘Welcome to Hotel Helvetia! Friedrich Wühtrich’s Illicit Mercenary Trade Network for the Dutch East Indies, 1858-1890’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 122–147, here p. 129f.

¹⁸² See Krauer, *Colonial Mercenaries*, pp. 46–48.

¹⁸³ See Krauer, ‘Welcome to Hotel Helvetia!’.

¹⁸⁴ See, for example, documents held in NL-HaNa, Ingekomen en Minuten van Uitgaande Brieven Betreffende de Inlichtingen over Pruisische Vrijwilligers bij het Nederlands-Indisch Leger 1876-1878, nummer toegang 2.05.10.14, inv. nr. 236. Also see Bossenbroek, Martin: “‘Dickköpfe’ und ‘Leichtfüsse’”. *Deutsche im niederländischen Kolonialdienst des 19. Jahrhunderts*, in: Bade, Klaus (ed): *Deutsche im Ausland – Fremde in Deutschland. Migration in Geschichte und Gegenwart*, Munich: Beck’sche Verlagsbuchhandlung 1992, pp. 249–254.

¹⁸⁵ Letter from R. Klinkenberg to the innkeeper of the inn ‘Zur Heimath’, Harderwijk, 5. November 1887, in: NL-HaNa, Werving Militairen voor het Ned.-Indische Leger 1879-1918, nummer toegang 2.05.03, inv. nr. 286, dossier A 136. In the larger German-speaking context, inns carrying the name “Zur Heimat” gained notoriety in the late 19th century as accommodations for unemployed migrant workers, vagrants, homeless people, or various other ‘vagabonds’ – and with that probably the ideal clientele for military recruitment. See, for example, Althammer, Beate: *Vagabunden. Eine Geschichte von Armut, Bettel und Mobilität im Zeitalter der Industrialisierung, 1815-1933*, Essen: Klartext 2017.

The sources on recruits from Habsburg Austria are much more fragmented. The files in the Austrian State Archives dealing with foreign services (“Fremde Dienste”) do not include a single document on Austrian recruits in the Dutch East Indies. The collection does, however, include cases from around 1900 that list Austrians in the German Colonial Army and even more prominently in the French Foreign Legion, which may suggest that the Austrian-Hungarian authorities did not necessarily oppose and were aware of the foreign services of their citizens.¹⁸⁶ A report from 1911 held in the archives of the Austrian consulate in Batavia states that between 184 and 400 Austrian-Hungarian citizens resided in the Dutch East Indies in the same year. The report’s author, the Austrian consul in Batavia, Quellhorst, assumes that most of them were employed as lower-ranking soldiers with the KNIL, but never reported with the consulate.¹⁸⁷ Their recruitment files can be found in the *stamboeken*, the Dutch Colonial Army’s personnel register.¹⁸⁸ Other than in the Swiss or German case, however, no collection held in the Dutch National Archives deals with recruits from the Habsburg Empire separately. The lack of extensive archival files on Austrian-Hungarian soldiers among the Dutch Colonial Army’s combatant troops can probably be connected to the fact that their number was significantly lower than that of Swiss or German colonial mercenaries in Dutch services – an observation, that cannot be applied to the medical troops, where they constituted a much larger share of foreign volunteers (see chapter 1.3.2).

Concerning the volunteers’ motives to join the Dutch Colonial Army, historians agree on the fact that most, regardless of national background, stemmed from the lower-class strata of society and joined out of poverty or a desire for adventure, conforming with societal expectations directed towards lower-class men.¹⁸⁹ Interested volunteers would usually apply with their respective local governments or directly with the local Dutch diplomatic delegation or consulate. Interestingly, some would mention their denomination when applying for military service in the KNIL. In his letter to the Royal Dutch Legation in Berlin, inquiring on the conditions of the military service in the KNIL, the prospective German mercenary Johann Gottfried Jeczawitz mentions not only his age and Prussian background, but additionally stresses the fact that he follows the “Protestant belief”.¹⁹⁰ This sense of a shared German-Dutch

¹⁸⁶ See Österreichisches Staatsarchiv, AT-OeSta/KA ZSt MfLV HR Politischer Teil, 1868-1903 358 Reisebewilligung und Fremde Dienste.

¹⁸⁷ Consul Quellhorst: Abschrift eines Berichts des k.u.k. Consulates in Batavia an die k. Gesandtschaft im Haag dd. 6. Juli 1911, No 214, in: Österreichisches Staatsarchiv, AT-OeSta/HHStA GKA Den Haag 24 Gesandtschaftsarchiv Den Haag, Administrative Akten, Konsularwesen (österreichisch-ungarisches) C V/12b-15.

¹⁸⁸ See NL-HaNA, 2.10.50, inv. Nrs. 121—215.

¹⁸⁹ See Bossenbroek, ‘Dickköpfe und Leichtfüsse’; Krauer, *Colonial Mercenaries*, pp. 58–63.

¹⁹⁰ Letter from Johann Gottfried Jeczawitz to the Royal Dutch Legation in Berlin, Bartenstein, 2 January 1885, in: NL-HaNA, Ingekomen en Minuten van Uitgaande Brieven Betreffende de Aanwerving in Pruisen van Vrijwilligers

cultural sphere is also reflected in an article on the high presence of Germans in the KNIL published in the *Norddeutsche allgemeine Zeitung* in 1898. The article's author writes that "The core of the Dutch East Indian troops consists of Dutch, Germans and Swiss, thus of members of *related nations of Germanic descent*." In contradiction to the "brutal" French Foreign Legion, the author describes the KNIL troops as civilized and disciplined, a fact that he attributes to the high German presence. With a sense of pride, he adds that "[t]he Germans form the backbone of the Dutch Colonial Army, since most of them received their military education in their home country and distinguish themselves above all others by their sobriety, sense of duty and usefulness."¹⁹¹

Not all contemporary observers were however quite so sympathetic of the Dutch colonial recruitment practices within German and Swiss territories. The illicit Swiss recruiter Friedrich Wüthrich, for example, was arrested by the Swiss police in 1888, putting an end to his illegal recruitment network.¹⁹² The German authorities seemed to have been just as annoyed by the recruitment agents. In his letter to the innkeeper of "Zur Heimath", Klinkenberg asks the addressee to "leave out the word 'agent'" in his following letters, "so that it does not become suspicious in Germany."¹⁹³ Klinkenberg's caution was well justified, as an article in the *Haderslebener Kreisblatt* from 1894 demonstrates. In it, *Landrath* Mauve complains about the "strikingly large number of applications for dismissal from the Prussian state association [...] in which the applicants stated that the reason for their emigration was to join the Dutch military service or the colonial army." His suspicion is "that agents [...] are recruiting for Dutch colonial service in this process. He therefore requests the "local police authorities of the district [...] to make appropriate enquiries and, in the event of an investigation, to bring about the punishment of the persons concerned on the basis of Section 144 of the Reich Penal Code."¹⁹⁴ At the turn of the 20th century, recruitment of foreign mercenaries finally stagnated and by 1914 dropped to insignificant levels.¹⁹⁵

voor het Nederlands-Indisch Leger 1854-1830, nummer toegang 2.05.10.14, inv. nr. 212B, bestanddeel 2. The Protestant denomination might have been an advantage but was not a necessary pre-condition in Dutch recruitment practices. To an admittedly much lesser extent, the KNIL also accepted Jewish or Catholic mercenaries.

¹⁹¹ Hirsch, Hans: "Aus Niederländisch Ostindien", in: *Norddeutsche allgemeine Zeitung*, 18 September 1898. Emphasis by the author.

¹⁹² See Krauer, 'Welcome to Hotel Helvetia!', p. 142.

¹⁹³ Letter from R. Klinkenberg to the innkeeper of the inn 'Zur Heimath', Harderwijk, 5. November 1887, in: NL-HaNa 2.05.03, inv. nr. 286, dossier A 136.

¹⁹⁴ Der Königliche Landrath Mauve: 'Auswanderung zwecks Eintritts in den holländischen Militärdienst bzw. in die Colonialarmee', in: *Haderslebener Kreisblatt* 25 (44), 1 November 1894, NL-HaNa 2.05.03, inv. nr. 286, dossier A. 136.

¹⁹⁵ See Krauer, *Colonial Mercenaries*, p. 51.

Recruitment of Physicians for the Dutch Colonial Army

The recruitment patterns for ‘medical mercenaries’ in Dutch colonial services closely mirrored the approach taken by the KNIL in searching for foreign, combatant volunteers. In his seminal study, Philipp Teichfischer traced the recruitment of German physicians for the KNIL between 1816 and 1884. First, he identified a number of Germans who independently contacted the colonial authorities in the Netherlands. Second, Dutch authorities appeared to have actively promoted joining the KNIL’s medical corps within the territories of the German States. Considering the educational background of physicians, their knowledge on Dutch recruitment efforts was often based on interpersonal networks between Dutch officials and faculty members of German universities, as can be exemplified by the case of the Alsace-born physician Franz Joseph Harbaur, inspector-general of the Dutch military medical service. In 1821, Harbaur asked the Würzburg-based philosophy and mathematics professor Andreas Metz to “recommend to him 10-12 well-mannered academic surgeons, who would be willing to ship to Java”, a request that was granted to him by Metz.¹⁹⁶ A further example for recruitment efforts in the university context is the German physician and botanist Johann Lukas Schönlein. In 1819, he was appointed professor for internal medicine in Würzburg, while holding a strong interest in paleobotany. Schönlein encouraged his students to join the Dutch Colonial Army as medical officers, hoping that they, in turn, would send him animal and plant specimens for his zoological and botanical collections. Many of Schönlein’s former students would follow their professor’s call and join the KNIL.¹⁹⁷ One of them was Ludwig Horner, a Swiss physician who had studied with Schönlein in Würzburg. Shortly after joining the colonial army, Horner would become a member of the *Natuurkundige Commissie voor Nederlands-Indië* (see chapter 1.1.2).¹⁹⁸ Like Horner, almost all Swiss medical officers who joined the KNIL throughout the 19th century spent at least parts of their study years in German universities, where many might have initially encountered the opportunities awaiting physicians in the Dutch East Indies. However, as has been elaborated on in the previous section, Dutch recruitment efforts, even in the case of non-combatant, medical officers, did not go without conflict and repeatedly attracted the attention of German and Swiss authorities.

¹⁹⁶ Teichfischer, ‘Transnational Entanglements in Colonial Medicine’, p. 75.

¹⁹⁷ See Teichfischer, Philipp: “‘Bin ich aber nur einmal auf Java!’ – Johann Lukas Schönleins ostindische Schatztruhe. Grenzüberschreitender Naturalienhandel im 19. Jahrhundert’, in: Steger, Florian (ed): *Medizin- und Wissenschaftsgeschichte in Mitteldeutschland. Beiträge aus fünf Jahren Mitteldeutscher Konferenz*, Leipzig: Leipziger Universitätsverlag 2016, pp. 121–132.

¹⁹⁸ See Horner, ‘Briefe und Tagebuchskizzen’, pp. 184f.

Nevertheless, in the second half of the 19th century, the Dutch Colonial Government took a more aggressive approach towards the recruitment of medical officers, particularly in times of war. The final major recruitment wave of foreign physicians occurred between 1873 and 1890. At that time, the Dutch colonial government was engaged in a resource-intensive war with the Sultanate of Aceh in northern Sumatra, with hundreds of troops succumbing to tropical and infectious diseases (see chapter 2). In an attempt to stock up its colonial medical division, the Dutch Ministry of War (*Ministerie van Oorlog*) sent several copies of a “Call for Young Doctors” (“Aufruf für junge Ärzte”) to the Ministry of Foreign Affairs (*Ministerie van Buitenlandse Zaken*), who in turn distributed it among the local Dutch delegations in Germanophone Europe. The Call listed the requirements for prospective volunteers as well as the reimbursement they could expect for their service.¹⁹⁹ The recruitment efforts for medical officers peaked around 1878, right in the aftermath of two Dutch military campaigns to Aceh in 1876 and 1877, which not only cost numerous resources and human lives, but also fostered the impression that the war was not likely to end in the foreseeable future.²⁰⁰ Again, the Ministry of Foreign Affairs would send out calls to the local Dutch Embassies and Consulates in the German Empire, stating that “The Royal Dutch Colonial Ministry is seeking, by July 1, 1879, twenty unmarried Doctors of Medicine, entitled to practice medicine in their fatherland, who are not over 35 years of age, and who wish to serve as 2nd class medical officers (assistant physician, premier lieutenant) for five years in the East Indian Army.” Interestingly, the call added that proficiency “in the German or Dutch language” were a sine qua non for prospective applicants. In addition, they would have to be “found physically fit for military service in the Dutch East Indies”, pass “a short examination to be held in The Hague”, and send in official documents that prove “their entitlement to medical and surgical practice”, the fact that “they are no longer liable to serve in their country of origin”, their “good conduct”, as well as a birth certificate. In return, recruits were promised a gratification of 4000 Gulden (6666 Reichsmark) and a per annum salary of 1300 Gulden (2166 Reichsmark) before departure, free first class passage to the Indies, a per annum salary of 2700 Gulden (4500 Reichsmark) during their journey, a per annum salary of 3300 Gulden (5500 Reichsmark) in the Indies, another gratification of 2000 Gulden (3333 Reichsmark) after the end of their service as well as a lifetime pension of 900 Gulden per annum in case of invalidity.²⁰¹ These numbers correspond

¹⁹⁹ See ‘Aufruf an junge Ärzte’, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

²⁰⁰ The literature on the Aceh war is discussed in more detail in chapter 2. For now, see Reid, Anthony: *The Contest for North Sumatra. Atjeh, the Netherlands and Britain 1858-1898*, London: Oxford University Press 1969, pp. 180–188.

²⁰¹ See unnumbered file with the title ‘Königreich der Niederlande’ in NL-HaNA 2.05.10.14, inv. nr. 211.

with the sums promised to Swiss physicians; the KNIL thus seemed to have made no differences concerning the salary of medical experts from different national backgrounds.²⁰²

At the same time, and despite repeated tensions, in some instances German and Swiss authorities directly collaborated with the Dutch in the recruitment of physicians for serving in the KNIL. For most of the second half of the 19th century, potential recruits directed their applications to the Ministry of War in Den Haag. After 1878, following internal reorganizations, the coordination of the recruitment of ‘medical mercenaries’ was handed over to the Ministry of Colonies (*Ministerie van Koloniën*).²⁰³ This transition prompted the Ministry of Colonies to collaborate with the Ministry of Foreign Affairs, which then engaged local representatives of the Netherlands in Berlin to conduct further assessments of potential recruits. Notably, neither the Consulate nor other Dutch delegations within the German Empire responded to requests or applications from German volunteers.²⁰⁴ In numerous instances, the Dutch delegates in Berlin conducted meticulous inquiries into each applicant’s credentials, ensuring the legitimacy of their medical degree, their overall credibility, financial stability, and physical well-being, most likely in an attempt to ensure that the recruits conformed to the ideals of male, bourgeois respectability of the time and thus posed no threat to the myth of European superiority in the colony through various forms of licentious behavior.²⁰⁵ In 1879, for example, the Bavarian representative (*Chargé d’Affaires*) in Berlin wrote to the Dutch delegate in Berlin, De Constant-Rebecque, probably one of the sons of the Swiss mercenary Jean Victor De Constant-Rebecque who had previously served the Dutch National Army,²⁰⁶ to inform him on his background check on the Dr. Placidus Engelmayer, who had expressed his interest in joining the Dutch Colonial Army with the Ministry in Den Haag and had studied medicine in Munich. The letter concludes, in the lingua franca French, that “Il jouit d’une parfait reputation, il possède quelque peu de fortune et il est doué d’une parfaite et rigoureuse santé” – “he enjoys a perfect reputation, he possesses some fortune, and he is blessed with a perfect and rigorous health”.²⁰⁷ In a similar vein, “the German government confirmed that [...] [the Prussian applicant] Dr. Stammeshaus

²⁰² See letter from the general consul of the Netherlands Suter-Vermeulen to the president of the Swiss Federal Council Hammer, Lausanne – Bern, 24 February 1879, in: BAR E27#1000/721#5748.

²⁰³ See General Secretary of the Ministry for the Colonies to L. Mittelshöfer, Dutch delegate in Vienna, Den Haag 13 August 1878, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

²⁰⁴ For the diplomatic process surrounding recruitments in the German Empire, see correspondences in NL-HaNA 2.05.03, inv. nr. 287, dossier A.137.

²⁰⁵ For the ‘threat’ posed to the colonial order by ‘misbehaving’ Europeans see Fischer-Tiné, Harald: *Low and Licentious Europeans. Race, Class and ‘White Subalternity’ in Colonial India*, New Delhi: Orient Blackswan 2009.

²⁰⁶ See De Montmollin, Benoît: ‘Constant de Rebecque, Jean-Victor’, in: *Historisches Lexikon der Schweiz (HLS)*, 20.08.2001, online: <https://hls-dhs-dss.ch/de/articles/023445/2001-08-20/> [accessed: 31.03.2023].

²⁰⁷ Letter from the Bavarian Chargé d’affaires in Berlin to Mr de Constant-Rebecque, Dutch Chargé d’Affaires in Berlin, Berlin September 8 1879, in: NL-HaNA 2.05.10.14, inv. nr. 211.

has proved to be of good name and reputation in Duhr, from where he originates.”²⁰⁸ The German authorities seemed to have had their very own interests at play in these investigations of recruits. This becomes evident in a newspaper snippet filed in the archives of the Dutch delegation in Berlin. The article’s author writes of “repeated cases [...] in which Dutch and Belgian advertising agents have fraudulently used identity papers of German nationals, which they had obtained through direct correspondence with German authorities, in order to procure entry into the Dutch Colonial Army under a false name [...]” As a measure to counter these activities, “the Ministers of the Interior and of War have arranged for applications for identity [papers], emigration, and military papers, that are addressed to Prussian authorities from the Netherlands or Belgium [...] to be answered [...] through the intermediary of the competent [local] German Imperial Consular Offices.” Through these measures, the Ministers hoped to control every individual case.²⁰⁹ The Dutch authorities tried to further appease the Germans by keeping their recruitment efforts as non-public and subtle as possible. The Dutch minister of Foreign Affairs, for example, wrote to the special envoy and minister of the Dutch legation in Berlin, Rochussen, in 1878 that he “was informed orally by the German Gerant [administrator] here that his government would not exactly oppose the recruitment of German physicians as medical officers in the Dutch East Indies Army, but that it would be less agreeable to publish the conditions of recruitment in German newspapers.”²¹⁰

In Switzerland, potential recruits would directly get in touch with the Swiss Federal Council – the highest executive organ of the Swiss Federal State. The applications followed an inquiry by J.G. Suter-Vermeulen, then Consul General of the Netherlands in the Swiss Confederation, who, on 3 January 1879, presented to the President of the Swiss Confederal Council Bernhard Hammer and the Vice-President of the Federal Military Department Emil Welti “in an official oral meeting” a “question very urgently asked by the Dutch government” Suter-Vermeulen wanted to know “whether the high Swiss Federal Council could allow Swiss physicians to serve as medical officers in the Dutch Colonial Army for a period of five years by granting them a six-year leave of absence”. Furthermore, the Consul General wished to know “whether the same [Federal Council] would have no objections to an announcement in Swiss newspapers in the affirmative case.” Since the Federal President had been friendly to him in both cases, Suter-Vermeulen reiterated the content of this “unofficial” discussion in an “official” letter to the council’s President Hammer on 24 February 1879. To this letter he also enclosed “the text of a

²⁰⁸ See ‘Antecedenten Dr. Stammeshaus’, Berlin 2 November 1878, in: NL-HaNA 2.05.10.14, inv. nr. 211.

²⁰⁹ See untitled and undated newspaper snippet (probably from the 1880s), in: NL-HaNA 2.05.10.14, inv. nr. 212A.

²¹⁰ Letter from the Ministerie van Buitenlandsche Zaken in Den Haag to Mr. Rochussen, special envoy and minister of the Dutch legation in Berlin, Den Haag 2 October 1878, in: NL-HaNA 2.05.10.14, inv. nr. 211.

potential newspaper advertisement” as well as “some copies of the conditions of employment drawn up by the Colonial Ministry” – the same documents that had also been distributed in the German Empire.²¹¹ Only two weeks later, the matter was discussed in one of the Federal Council’s regular meetings. A particular concern was whether there was a conflict between the “Federal Act on Recruitment and Entry into Foreign Military Service” of 1859, officially banning “foreign services” (“*Fremde Dienste*”) and Suter-Vermeulen’s request. In consultation with the Military and Justice Department, the Federal Council concluded that Art. 1 of the Act “did not apply here”, since “in the present case it is a matter of national troops.”²¹² This argument was entirely compatible with a generous interpretation of the legal situation at the time. Article 1 explicitly made it a punishable offence to “join foreign military units which are not to be regarded as national troops of the state concerned.” In exceptional cases, the Federal Council still reserved the right to grant permission to enter the service “for the purpose of further training for the purposes of national defense.”²¹³ In his letter of 24 February, Suter-Vermeulen also made rhetorical use of this legal leeway by pointing out “that the foreigners in said service do not form their own, specially organized corps and therefore do not form a foreign legion.”²¹⁴ Indeed, the KNIL did not comprise any foreign legions: foreign and Dutch soldiers fought together under the Dutch flag and did not form separate troops.²¹⁵ The Federal Act of 1859 therefore did not necessarily give the Swiss authorities a reason to reject Suter-Vermeulen’s request. The legal situation regarding the newspaper advertisement was slightly different: Art. 3 of the Federal Act prohibited the advertising of foreign military service, even if the request was to join a national army. However, without going into any detail, the Federal Council argued that “such a publication”, as presented by Suter-Vermeulen in the annex, simply “does not qualify as ‘advertising’” and therefore “this request must also be granted.”²¹⁶ The Federal Council subsequently granted all three applications from physicians seeking permission to enter the service of the Dutch Colonial Army.

²¹¹ Letter from the general consul of the Netherlands Suter-Vermeulen to the president of the Swiss Federal Council Hammer, Lausanne – Bern, 24 February 1879, in: BAR E27#1000/721#5748*.

²¹² Auszug aus dem Protokoll der 40. Sitzung des Schweizerischen Bundesrathes, Bern 26 April 1879, in: BAR E27#1000/721#5748*.

²¹³ See ‘Bericht der Minderheit er Kommission des Ständerathes, betreffend die Anwerbung für fremden Kriegsdienst vom 28. Juli 1859’, in: Schweizerisches Bundesblatt (BBL) 1859 II 467; Fuhrer, Hans Rudolf/Eyer, Robert Peter: ‘Das Ende der “Fremden Dienste”’, in: idem (eds): Schweizer in ‘Fremden Diensten’. Verherrlicht und verurteilt, Zurich: Verlag Neue Zürcher Zeitung 2006, pp. 247–258, here p. 256.

²¹⁴ Letter from the general consul of the Netherlands Suter-Vermeulen to the president of the Swiss Federal Council Hammer, Lausanne – Bern, 24 February 1879, in: BAR E27#1000/721#5748*.

²¹⁵ See Bossenbroek, *Living Tools of Empire*, p. 36.

²¹⁶ Auszug aus dem Protokoll der 40. Sitzung des Schweizerischen Bundesrathes, Bern 26 April 1879, in: BAR E27#1000/721#5748*.

As in the case of the combatant troops, no systematic collections could be found in Austrian archives regarding the recruitment of medical officers for service in the KNIL. However, a letter held in the collection of the Dutch Ministry of Foreign Affairs by the Dutch Consul in Vienna observes the “considerable number of Austrian doctors in the Dutch East Indies military service” and states that “enquiries about the conditions of this service are not uncommon at His Excellency’s Ministry, also from people who are not based in Vienna and are looking for a written answer.” The consul thus asks the Ministry in Den Haag for additional copies of the same call for applicants, listing requirements and benefits, that was distributed in the German Empire and Switzerland.²¹⁷ Another letter from the Ministry of Colonies to the Dutch delegate in Vienna, L. Mittelshöfer, praises the latter’s “great efforts” in recruiting volunteers within Austrian-Hungarian territories.²¹⁸ The two documents thus suggest a rather active collaboration between the Dutch Ministry of Colonies and the Dutch delegates in the Habsburg Empire in recruiting physicians for services in the KNIL. The archival collection of the Dutch Ministry of Foreign Affairs lastly also contains requests by physicians placed with the Dutch embassies in Paris and Lisbon in the 1880s.²¹⁹ However none of the candidates could be identified in my analysis of the KNIL’s personnel files. The sources available in this study are silent as to why precisely they did not join the Dutch Colonial Army’s medical corps in the end. It might very well be, given that knowledge of German or Dutch were stated as requirements in the Ministry of Colonies’ call for medical officers, they were rejected by the Dutch Colonial Army. Furthermore, none of the Swiss volunteers came from the country’s French or Italian-speaking regions with the exception of Ernest Guglielminetti from the bilingual canton Wallis, whose mother-tongue was German as is made evident in his private correspondences with his parents (see chapter 2). Moreover, the Hungarian recruits from the Habsburg Empire without exception drafted their applications to the KNIL in German, proving their fluency in the language.²²⁰

All in all, the Dutch Ministry of War and Colonies’ collaborations with German, Swiss, and Austrian authorities seemed to have paid out. Between 1873 and 1904, a total of 65 German, 34 Austrian, and 6 Swiss physicians served the KNIL as medical officers. Their share peaked in 1880, when they accounted for almost 30% of the entire medical corps (17.2% German, 10.2% Austrian, 1.9% Swiss), with an additional 8.9% of the medical officers coming from

²¹⁷ Letter from the Dutch Consulate in Vienna to the Ministry of Foreign Affairs in Den Haag, Vienna 28 August 1877, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

²¹⁸ See General Secretary of the Ministry for the Colonies to L. Mittelshöfer, Dutch delegate in Vienna, Den Haag 13 August 1878, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

²¹⁹ See NL-HaNA 2.05.03, inv. nr. 287, dossier A.137, folios 4853 and 5555.

²²⁰ See, for example, letter from Dr. Anton Carl Desö to the Dutch Ministry of Foreign Affairs, Budapest, 25 January 1876, in: NL-HaNA 2.05.03, inv. nr. 287, dossier A. 137.

Denmark. Their percentage remained between 20 and 30 percent until 1890, when it dropped to around 15% from where it would gradually diminish.²²¹ Applications from the German Empire, Austria-Hungary and Switzerland did continue to drizzle in between 1898 and 1910 as documents in the Dutch national archives prove.²²² The demands for ‘medical mercenaries’, however, seemed to have waned even though serving in the Indies appeared to have remained very popular in Germanophone Europe. Moreover, heightened nationalist sentiments around the turn of the 20th century could potentially have hindered the Dutch from continuing to actively recruit foreigners for their military. In 1898, an anonymous article in the *Leipziger Nachrichten* that commented on the high number of foreign, in particular German, physicians and soldiers, caused a small scandal in the Dutch press.²²³ The article was ascribed to the medical officer Dr. Heinrich Breitenstein, who was of Austrian origin, but often referred to as “German” in both the sources and secondary literature. Breitenstein denied having written the article, but the Dutch distrust towards foreign medical officers and soldiers remained.²²⁴ In 1904, commenting on the Breitenstein scandal, the *Indische Gids* wrote that “As foreigners do not even make up a fifth of the army, we do not need them.” “Finally,” the author added, “it is necessary that Dutch soldiers defend the Dutch colonies, while it is not in our interest that tons of paid pensions go abroad and then people, treated entirely as Dutchmen, make untiring remarks after their return to their homeland. They can become soldiers in their own colonies and then speak badly of their own government and their own institutions.”²²⁵

²²¹ See NL-HaNA, 2.10.50, inv. nrs. 8–19, folios 2160-4897. For the total numbers of medical officers in 1880 see ‘Nederlandsch Oost-Indisch Leger. Formatie en Sterke op 31 December 1880’ in: *Koloniaal Verslag*, Bijlage C, ’s Gravenhage: Algemeene Landsdrukkerij 1881, p. 2. For 1890 see ‘Nederlandsch Oost-Indisch Leger, Formatie en Sterke op 31 December 1890’, in: *Koloniaal Verslag*, Bijlage B, ’s Gravenhage: Algemeene Landsdrukkerij 1891, p. 2.

²²² See documents held in NL-HaNA, Militaire Geneeskundige Dienst in de Koloniën 1898-1913, nummer toegang 2.05.03, inv. nr. 288, dossier A. 137.

²²³ See, for example, ‘Tot zoover Insulinde’, in: *Bataviaasch Nieuwsblad*, 29 July 1898; ‘Uit de Deutsche Wochenzeitung’, in: *Arnhemse Courant*, 30 June 1898.

²²⁴ See ‘Een Rectificatie ten Behoeve van Dr. Breitenstein’, in: *De Locomotief*, 18 January 1899.

²²⁵ ‘Vreemdelingen bij het Indische Leger’, in: *De Indische Gids. Tijdschrift voor Nederlandsch-Indië* 20 (2), 1904, p. 1881.

Conclusion

In many ways, the case of Germanophone ‘medical mercenaries’ sheds new light on the transimperial labor markets in the age of empire. First, I have highlighted how Germanophone Europe emerged as one of the most important pools for the recruitment of ‘foreign’ experts for imperial services. On the one hand, the early differentiation of scientific disciplines as well as “Humboldtian science” more generally significantly enhanced the reputation of German institutions of higher education. On the other hand, for most of the 19th century, Switzerland, the Habsburg Empire, and the German Empire lacked colonial overseas possessions of their own. Individuals from these regions were thus mostly not seen as competition in the imperial race. As a result, university-educated men from Germanophone Europe were particularly sought-after by ‘foreign’ imperial powers such as the British or the Dutch Empire, whose high demands for European agricultural, technological, or medical experts could not be met within their own national borders. Second, these imperial demands for medical (and other forms of scientific) expertise created individual opportunities for middle-class men from Germanophone Europe to conform to and perform bourgeois ideals of masculine respectability such as a desire for adventure, financial security, or the ‘advancement’ of ‘modern’ European science. These opportunities were particularly attractive to those men who had struggled to secure their status in Europe due to a loss of reputation, debt, or the lack of opportunities to travel the world within the framework of institutions in their regions of origin. By joining Dutch services, many thus hoped to enhance their symbolic capital and social standing in bourgeois society. Third, throughout the 19th century, the Dutch Colonial Army held a monopoly on the European health care system in the Dutch East Indies. At the same time, formalized European scientific institutions in the Dutch East Indies were largely underfunded for most of the century. Hence, the KNIL emerged as one of the most important recruiters for ‘foreign’ university-educated men and thereby transformed into an important hub for the production of medical, botanical, zoological, or geological knowledge. In recruiting its medical personnel, the army could tap into historically grown networks for the recruitment of combatant mercenaries from Northern, Central, and Eastern Europe. Despite the occasional resistance of German and Swiss authorities, the enlistment of Germanophone physicians continued even after the German Empire had established its own colonies in Africa and the South Pacific. Only at the turn of the 20th century did the recruitment of foreigners for the KNIL wane in light of intensified nationalist sentiments.

2 ‘Medical Mercenaries’ and Dutch Colonial Warfare: Negotiating Race, Class, Gender, and Medicine in Aceh, c. 1880-1890

The Aceh War (1873-1904/14) in northwestern Sumatra was a particularly momentous war theatre in the history of Dutch imperialism in Southeast Asia. While earlier historiography had largely downplayed Dutch imperial conquest in the late 19th century, rather stressing the so-called ‘ethical policies’ (a Dutch version of the British *civilizing mission* or the French *mission civilisatrice*), more recent research has unearthed the violent and expansionist nature of Dutch colonial warfare in Southeast Asia around 1900.²²⁶ As this strand of research has demonstrated, it took the Dutch more than 40 years to violently ‘pacify’ the Acehnese guerrilla resistance.²²⁷ Alongside these military challenges, the protracted conflict demonstrated that epidemic and tropical diseases such as malaria, cholera or beriberi could devastate entire regiments. Among the 12’000 European, African, and Southeast Asian KNIL soldiers who died in the war, 10’000 succumbed to diseases.²²⁸ With a few exceptions, the role of medicine in general, and of ‘foreign’ medical officers in particular, has however received only but little attention in the historiography on the Aceh War so far.²²⁹ This chapter zooms in on the testimonies of five ‘foreign’ medical officers – referred to as ‘medical mercenaries’ in what follows – who were responsible for the health of the injured and disease-struck troops in northwestern Sumatra in the 1880s and 1890s: the Swiss Dr. Heinrich Erni and Dr. Ernest Guglielminetti, the Austrian Dr. Heinrich Breitenstein, the Czech Pavel Durdik, and the Prussian Dr. Friedrich Wilhelm

²²⁶ See Locher-Scholten, Elsbeth (1994): ‘Dutch Expansion in the Indonesian Archipelago around 1900’, in: *Journal of Southeast Asian Studies* 25 (1), pp. 91–111; Kuitenbrouwer, Maarten: *The Netherlands and the Rise of Modern Imperialism. Colonies and Foreign Policy, 1870-1902*, New York: Berg 1991; Groen, Petra et al. (eds): *Krijgsgeweld en Kolonie. Opkomst en Ondergang van Nederland als Koloniale Mogendheid*, Amsterdam: Boom Uitgevers 2021; Locher-Scholten, Elsbeth: *Sumatran Sultanate and Colonial State. Jambi and the Rise of Dutch Imperialism, 1830-1907*, Ithaca: Cornell University Press 2003; Groen, Petra (2012) ‘Colonial Warfare and Military Ethics in the Netherlands East Indies, 1816-1941’, in: *Journal of Genocide Research* 14 (3), pp. 277–296.

²²⁷ For a concise overview of the Aceh War and its aftermath see Reid, Anthony: *The Contest for North Sumatra. Atjeh, the Netherlands and Britain, 1858-1898*, London: Oxford University Press 1969; Graf, Arndt/Schroter, Susanne/Wieringa, Edwin P. (eds): *Aceh. History, Politics, and Culture*, Singapore: Institute of Southeast Asian Studies 2010; Van ’t Veer, Paul: *De Atjeh-oorlog*, Amsterdam: Uitgeverij de Arbeiderspers 1969.

²²⁸ See Wesseling, Henk (2005): ‘Imperialism & the Roots of the Great War’, in: *Daedalus* 134 (2), pp. 100–107, here p. 103.

²²⁹ Important contributions on the role of medicine and medical experts in Aceh are Van Bergen, Leo: *The Dutch East Indies Red Cross, 1870-1950. On Humanitarianism and Colonialism*, Lanham: Lexington Books 2019, pp. 2–40; Den Hertog, H.: *De Militair-Geneeskundige Verzorging in Atjeh 1873-1904*, Amsterdam: Thesis Publishers 1991; De Moor, J. A.: ‘An Extra Ration of Gin for the Troops. The Army Doctor and Colonial Warfare in the Archipelago, 1830-1880’, in: Van Heteren, G.M/De Knecht-Van Eekelen, A./Pulissen, M.J.D. (eds): *Dutch Medicine in the Malay Archipelago 1816-1942*, Amsterdam: Rodopi 1989, pp. 133–152.

Stammeshaus. The present chapter aims at situating these ‘foreign’, middle-class medical men in the complex “imperial social formation” in Aceh.²³⁰

First, the analysis follows up recent historiographical endeavors that challenge the omnipotence of medicine and medical experts in colonial settings. In recent years, a large and ever growing body of literature has questioned notions of modernity as well as ‘modern’ technologies such as medicine as *exclusively European* developments by pointing to the significance of non-European environments and epistemologies in the making of medical knowledge.²³¹ Simultaneously, historians of gender, science, and medicine have demonstrated how allegedly ‘objective’ (medical) knowledge constructed hierarchical differences between gender, class, and race and ideologically supported the supposedly ‘natural’ hegemony of European men.²³² Building on this literature, I will investigate how medical officers in Aceh discursively instrumentalized their medical expertise to claim a hegemonic position vis-à-vis the combatant troops, in particular lower-class European soldiers, as well as the gendered and racialized ‘others’ they encountered in the military camps.²³³ Simultaneously, I will highlight the fragility of such claims by pointing to instances in which medical officers failed to successfully tackle diseases or to convince their patients of their allegedly superior treatments. Second, resorting to an intersectional perspective, the chapter explores the self-positioning of medical officers as bourgeois, university-educated, European men serving a ‘foreign’ army

²³⁰ Sinha, Mrinalini (2000): ‘Mapping the Imperial Social Formation. A Modest Proposal for Feminist History’, in: *Signs* 25 (4), pp. 1077–1082.

²³¹ See, for example, Tilley, Helen: *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870–1950*, Chicago: University of Chicago Press 2011; Fischer-Tiné, Harald: *Pidgin-Knowledge. Wissen und Kolonialismus*, Zürich: Diaphenes 2018; Mukharji, Projit Bihri: *Nationalizing the Body. The Medical Market, Print and Daktari Medicine*, London: Anthem Press 2011; Seth, Suman: *Difference and Disease. Medicine, Race, and the Eighteenth-Century British Empire*, Cambridge: Cambridge University Press 2018; Neill, Deborah: *Networks in Tropical Medicine. Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890–1930*, Stanford: Stanford University Press 2012; Downs, Jim: *Maladies of Empire. How Slavery, Imperialism, and War Transformed Medicine*, Cambridge: The Belknap Press of Harvard University Press 2021; Anderson, Warwick: *Colonial Pathologies. American Tropical Medicine, Race, and Hygiene in the Philippines*, Durham: Duke University Press 2008; Chakrabarti, Pratik: *Medicine and Empire 1600–1960*, Basingstoke: Palgrave Macmillan 2014; Anderson, Warwick: *The Cultivation of Whiteness. Science, Health, and Racial Destiny in Australia*, New York: Basic Books 2003; Arnold, David (ed): *Imperial Medicine and Indigenous Societies*, Manchester: Manchester University Press 1988; Arnold, David (ed): *Warm Climates and Western Medicine. The Emergence of Tropical Medicine, 1500–1900*, Amsterdam: Rodopi 1996.

²³² See, Haraway, Donna: *Primate Visions. Gender, Race and Nature in the World of Modern Science*, New York: Routledge 1990; Milam, Erika Lorraine/Nye, Robert A. (2015): ‘An Introduction to Scientific Masculinities’, in: *Osiris* 30 (1), pp. 1–14; Ellis, Heather: *Masculinity and Science in Britain, 1831–1918*, London: Palgrave Macmillan 2017; Mukherjee, Sujata: *Gender, Medicine, and Society in Colonial India. Women’s Healthcare in Nineteenth- and Early Twentieth-century Bengal*, New Delhi: Oxford University Press 2017; Wells, Andrew: ‘Masculinity and its Other in Eighteenth-Century Racial Thought’, in: Ellis, Heather/Meyer, Jessica (eds): *Masculinity and the Other. Historical Perspectives*, Newcastle upon Tyne: Cambridge Scholar Publishing 2009, pp. 85–114; Schiebinger, Londa: *Nature’s Body. Gender and the Making of Modern Science*, New Brunswick: Rutgers University Press 2013.

²³³ For the plurality of (imperial) masculine identities and the various “others” they were constructed against, see the contributions in Ellis/Meyer (eds), *Masculinity and the Other*.

comprising Javanese, ‘Ambonese’ and European soldiers and fighting presumably ‘fanatic’ Islamic enemies – the Acehnese. In accordance with Richard Drayton’s observation that markers of identity such as race “acquired [their] meaning in the structures of social practices,” I ask how Germanophone medical officers in Dutch services negotiated their masculine, bourgeois, European identities in Aceh. The aim is to add to a growing strand of historiography that regards race, class, and gender not as ‘natural’ but rather as unstable and contested categories that constantly had to be performed.²³⁴ When confronted with the “licentious” behavior of their lower-class European peers or the competition posed by indigenous medical practices, medical officers were forced to perform their supposedly hegemonic position as European, middle-class men both discursively – e.g. through stressing their scientific rationality in published memoirs – as well as practically – for example by mimicking a bourgeois lifestyle in the remote, tropical military camps. Third, the chapter highlights the transimperial dimension of these discourses and practices. As has been convincingly argued by Ann Laura Stoler and others, what it meant to be bourgeois, male, or European was negotiated within the borders of European nation states and in the colonies alike.²³⁵ At the same time, to put it in the words of Christoph Dejung, David Motadel and Jürgen Osterhammel, the rise of the 19th century European bourgeoisie can be “explained only by considering the increasing worldwide circulation of people, ideas, and goods.”²³⁶ These processes of circulation, as the case of ‘foreign’ medical officers in the Dutch Colonial Army demonstrates, did not stick to the clear-cut boundaries of individual nation states and empires. On the one hand, I argue that the construction of Swiss, Austrian, or German bourgeois masculinities always interacted with colonial discourses on racialized and gendered ‘others’ in the colonies, despite these regions’ lack of (or late) colonial possessions of their own. On the other hand, their case further complicates the dichotomies between colonizer/European and colonized/indigenous. As has

²³⁴ The concept of “performativity” has been put forward by the feminist philosopher Judith Butler to point to the constructiveness of gender. See Butler, Judith (1988): ‘Performative Acts and Gender Constitution. An Essay in Phenomenology and Feminist Theory’, in: *Theatre Journal* 40 (4), pp. 519–531. For applications of her concept in historiography of colonial social hierarchies see Van der Meer, Arnout (2017): ‘Performing Colonial Modernity. Fairs, Consumerism, and the Emergence of the Indonesian Middle Classes’, in: *Bijdragen tot de Taal-, Land- en Volkenkunde* 173 (4), pp. 503–538; Lahiri, Shopma (2003): ‘Performing Identity. Colonial Migrants, Passing and Mimicry between the Wars’, in: *Cultural Geographies* 10 (4), pp. 408–423; Van der Meer, Arnout: *Performing Power. Cultural Hegemony, Identity, and Resistance in Colonial Indonesia*, Ithaca: Cornell University Press 2020.

²³⁵ See Stoler, Ann Laura/Cooper, Frederick: ‘Between Metropole and Colony. Rethinking a Research Agenda’, in: idem (eds): *Tensions of Empire. Colonial Cultures in a Bourgeois World*, Berkeley: University of California Press 1997, pp. 1–56; Stoler, Ann Laura: *Carnal Knowledge and Imperial Power. Race and the Intimate in Colonial Rule*, Berkeley: University of California Press 2002; Ballantyne, Tony/Burton, Antoinette (eds): *Moving Subjects. Gender, Mobility, and Intimacy in an Age of Global Empire*, Urbana: University of Illinois Press 2009; Levine, Philippa (ed): *Gender and Empire*, Oxford: Oxford University Press 2007.

²³⁶ Dejung, Christof/Motadel, David/Osterhammel, Jürgen: ‘Worlds of the Bourgeoisie’, in: idem (eds): *The Global Bourgeoisie. The Rise of the Middle Classes in the Age of Empire*, Princeton: Princeton University Press 2019, pp. 1–40, here p. 4.

been asserted by the Dutch historians Remco Raben and Ulbe Bosma, such binaries fail to grasp the complex social constellation in the Dutch East Indies that was characterized by a high degree of “creolization” as well as a contingent relationship between the categories “indigenous” and “European”.²³⁷ Following up on their observation, I argue that Europeans in the Dutch East Indies could display a high degree of flexibility with regard to their heritage. ‘Medical mercenaries’ in Aceh, as I will demonstrate, both claimed their belonging to European civilization at large while simultaneously stressing their national or even regional identities, and in some (rare) instances even forged solidarities with the local populations they encountered.

The chapter is structured according to different social configurations within the colonial social order with each section focusing on a specific set of markers of identity. The first section provides an overview of the Aceh War and analyses the role of and relationship between *national/regional belonging* and *Europeanness* as well as *medical expertise* in negotiating medical officers’ positionality as non-combatant, ‘foreign’ members of the Dutch Colonial Army vis-à-vis their Dutch employers, on the one hand, the Acehnese ‘enemy’, and the tropical environment and diseases, on the other. The second section focusses on discursive strategies and performative practices employed by medical officers to distinguish themselves from the lower-class European soldiers they treated and investigates the ways in which they utilized their medical expertise to emphasize ideals of *bourgeois masculinity* such as respectability, temperance, and self-control. In the third section, I explore how ‘medical mercenaries’ constructed the different *racialized and gendered* ‘others’ they encountered while simultaneously pointing to the fragility of such racialized and gendered boundaries.

²³⁷ See Bosma, Ulbe/Raben, Remco: *Being ‘Dutch’ in the Indies. A History of Creolisation and Empire, 1500-1920*, Singapore: NUS Press 2008.

2.1 ‘Medical Mercenaries’ in Aceh

While they were ‘foreigners’ in the Dutch East Indies, ‘medical mercenaries’ from Germanophone Europe were at the same time active participants in the Dutch struggle against the Acehnese resistance. In light of the high prevalence of diseases such as malaria and beriberi, whose fatality posed a serious threat to the success of Dutch colonial warfare, medical officers were regarded as crucial assets by the Dutch Colonial Army as they attempted to secure the survival of its troops. In the following, I will outline the transimperial nature of the Aceh War as well as the ways in which Swiss, German, and Austrian-Hungarian medical officers negotiated their position and solidarities between the ‘foreign’ Dutch Empire and its supposedly ‘fanatic’ Acehnese Muslim ‘enemies’.

The Aceh War

Dutch interest in Aceh went back a long way. As early as the 18th century, the VOC – driven by the desire to monopolize the spice trade in Western Southeast Asia – came into conflict with the Acehnese Sultan, who attempted to impose high taxes on the lucrative pepper trade in Sumatra.²³⁸ In an effort to circumvent the Sultan’s regulations, the Dutch traded directly with the local *ulèëbalang*, the economically powerful, local Acehnese elites.²³⁹ In the course of the 19th century, foreign policy interests complemented Dutch attempts to economically profit from trading opportunities in northwestern Sumatra.²⁴⁰ This issue became even more pressing in the aftermath of the opening of the Suez canal in 1869 that significantly reduced trade and travel routes between Europe and Southeast Asia. From the perspective of the Dutch Empire, the independent Sultanate of Aceh, situated in-between the Dutch, British, and Ottoman Empires, represented a power vacuum that could be occupied at any time by neighboring imperial powers. In the first half of the 19th century, there were repeated tensions between the

²³⁸ For an overview of early modern Dutch expansionism in Southeast Asia and beyond, see Onnekink, David/Rommelse, Gijs: *The Dutch in the Early Modern World. A History of Global Power*, Cambridge: Cambridge University Press 2019; Huigen, Siegfried/De Jong, Jan L./Kolfin, Elmer (eds): *The Dutch Trading Companies as Knowledge Networks*, Leiden: Brill, 2010; Emmer, Pieter/Gommans, Jos: *The Dutch Overseas Empire, 1600-1800*, Cambridge: Cambridge University Press 2021; Antunes, Catia/Gommans, Jos (eds): *Exploring the Dutch Empire. Agents, Networks and Institutions, 1600-2000*, London: Bloomsbury 2015.

²³⁹ See Missbach, Antje: ‘The Aceh War (1873-1913) and the Influence of Christiaan Snouck Hurgronje’, in: Graf/Schroter/Wieringa, *Aceh. History, Politics, and Culture*, pp. 39–62, here pp. 40f.

²⁴⁰ See Lindblad, Thomas (1989): ‘Economic Aspects of the Dutch Expansion in Indonesia, 1870-1914’, in: *Modern Asian Studies* 23 (1), pp. 1–24.

Netherlands and the British, as the latter were able to expand their influence in the Southeast Asian spice trade in the aftermath of the occupation of Padang, Malacca, and Java during and after the Napoleonic Wars (1795-1815). After France and the USA had increasingly tried to establish themselves as potent economic and political players in Southeast Asia, the Sultanate of Aceh was in danger to become the “Achilles’ heel” of the Dutch Colonial Empire.²⁴¹ Consequently, Dutch colonial officials became increasingly paranoid about foreign military intervention. The final “casus belli” occurred when, in the early 1870s, rumors circulated that the Sultan of Aceh had contacted the USA to negotiate trade treaties and military protection. Furthermore, in 1871, the Netherlands signed the Anglo-Dutch Sumatra Treaty with Great Britain, wherein the Dutch renounced their claims to the African Gold Coast, and the British, in turn, officially accepted Sumatra to be under full Dutch influence, including Aceh. The Sultan himself was neither consulted nor involved in the diplomatic process preceding the agreement. In 1873, the Dutch sent the first military “expedition” to Aceh, expecting it to be a short, punitive military intervention sending a message rather than the beginning of a forty-year war.²⁴² In the eyes of the Acehnese, however, both the agreement and the expedition were *de facto* a public declaration of war. In the course of the first expedition, the Dutch conquered the Sultan’s palace in Kota Radja that they considered to be the political-administrative center. In doing so, they overestimated the power of the Sultan, who was merely a symbolic leader of a confederated territory: Acehnese resistance persisted, and the Netherlands responded with further military expeditions. Peace was declared several times during this period, but the uprisings on the Acehnese side continued well into the 1880s.²⁴³

Meanwhile, after the Dutch declaration of War in 1873, the Acehnese Sultan asked several Western powers – the British, French, United States as well as Italy –, for military aid. These calls for help proved to be unsuccessful, until the Ottoman Empire finally assured the Acehnese its military and financial support in resisting the Dutch. The Acehnese-Ottoman ties date back to the 16th century when the Ottoman Sultans guaranteed Aceh military protection. In practice, the ties between Aceh and the Turkish waned throughout the following centuries, however they remained strong in the Acehnese cultural memory. The nineteenth-century Acehnese anti-

²⁴¹ See Reid, *The Contest for North Sumatra*, p. 21.

²⁴² See De Jong, Janny (2005): “Negotiations in Bismarckian Style”. The Debate on the Aceh War and its Legitimacy, 1873-1874”, in: *Itinerario* 29 (2), pp. 38–52.

²⁴³ For an overview of the course of the Aceh War see Reid, *The Contest for North Sumatra*; Missbach, ‘The Aceh War’, pp. 40–49; Groen, ‘Colonial Warfare and Military Ethics in the Netherlands East Indies, 1816-1941’, pp. 283–286; Van ’t Veer, *De Atjeh-oorlog*. For Dutch colonial military expeditions more broadly see De Moor, Jaap.: ‘Warmakers in the Archipelago. Dutch Expeditions in Nineteenth Century Indonesia’, in: De Moor, Jaap/Wesseling, Henk (eds): *Imperialism and War. Essays on Colonial Wars in Asia and Africa*, Leiden: Brill 1989.

colonial struggle against the Dutch was thus ideologically oriented towards the Ottoman Empire rather than Java and can be placed in the context of early “Pan-Islamic” solidarity between Southeast and Western Asia.²⁴⁴ Accordingly, in the 1880s, the Acehese resistance against the Dutch in the Aceh War was increasingly united under religious leadership. In the 1870s, members of the Acehese aristocracy and economic elite (*ulèëbalang*) attempted to enter peace negotiations with the Dutch.²⁴⁵ These negotiations turned out to be unsuccessful, and from 1880 onwards, the Acehese aristocracy withdrew resignedly from the conflict with the Netherlands. Dutch attempts to forge alliances with Acehese military leaders were, in turn, largely unsuccessful.²⁴⁶ Consequently, the “power vacuum” left by the retreat of the *ulèëbalang* was filled by Islamic *ulama*, religious scholars and leaders, who tried to unite the resistance against Dutch imperialism under the guise of *jihād*, the Holy War, or Perang Sabil in Malay.²⁴⁷ The ideology of the Jihad was, among others, spread via Islamic songs and poetry, most importantly the *Hikayat Perang Sabil* (“Tale of the Holy War”) from around 1881, that is commonly attributed to the Acehese *ulama* Teungku Chik Pante Kulu. The *Hikayat* not only condemns the inactivity of the *ulèëbalang*, but also calls on the Acehese to fight against the Netherlands, a task that is presented as a religious duty.²⁴⁸

The religious component of the *ulama* resistance, as will be discussed in the following subchapter, caused both fascination and fear among European observers of the War. Related to this combination of shock and awe in the face of Islamic radicalization in Aceh, the gradual end of the war was closely linked to the research findings of the Dutch Orientalist and Islam expert Christiaan Snouck Hurgronje. Hurgronje himself, originally trained as a theologian, was

²⁴⁴ See Reid, Anthony: ‘Aceh and the Turkish Connection’, in: Graf/Schroter/Wieringa (eds), *Aceh. History, Politics, and Culture*, pp. 26–38, here pp. 26–32; Peacock, Andrew/ Teh Gallop, Annabel (eds): *From Anatolia to Aceh. Ottomans, Turks, and Southeast Asia*, Oxford: Oxford University Press 2015; Hakkı Kadı, İsmail/Peacock, Andrew: ‘Documents on 16th Century Ottoman Contacts with Aceh’, in: idem (eds): *Ottoman-Southeast Asian Relations (20 vols). Sources From the Ottoman Archives*, Leiden: Brill 2020, pp. 33–74; Hakkı Kadı, İsmail: ‘An Old Ally Revisited: Diplomatic Interactions Between the Ottoman Empire and the Sultanate of Aceh in the Face of Dutch Colonial Expansion’, in: *The International History Review* 43 (5), pp. 1080–1097.

²⁴⁵ See Reid, Anthony (1972): ‘Habib Abdur-Rahman Az-Zahir (1833-1896)’, in: *Indonesia* 13, pp. 36–59.

²⁴⁶ The Dutch furthermore attempted to build alliances with Acehese power holder, most famously Teuku Umar, who had served them as a spy. Teuku Umar however betrayed the Dutch 1896, rejoining the Acehese resistance. See Kitzen, Martijn (2012): ‘Between Treaty and Treason. Dutch Collaboration with Warlord Teuku Uma during the Aceh War, a Case Study on the Collaboration with Indigenous Power-Holders in Colonial Warfare’, in: *Small Wars & Insurgencies* 23 (1), pp. 93–116; Rohmana, Jajang (2021): ‘Colonial Informants and the Acehese-Dutch War’, in: *Indonesia and the Malay World* 49 (143), pp. 63–81.

²⁴⁷ On the power dynamics between the *ulèëbalang* and *ulama* in the Aceh War, see Kloos, David (2021): ‘Dis/connection: Violence, Religion, and Geographic Imaginings in Aceh and Colonial Indonesia, 1890s-1920s’, in: *Itinerario* 45 (3), pp. 389–412, here pp. 396–399.

²⁴⁸ See Sari, Cut Maya Aprita/Aboo Talib, Kartini/Hamzah, Shazlin A. (2022): ‘From “Song of War” to “Song of Peace”’. The Role of Hikayat Prang Sabi for Acehese Ethnonationalism, in: *Cogent Arts & Humanities* 9 (1), online, DOI: [10.1080/23311983.2022.2062894](https://doi.org/10.1080/23311983.2022.2062894); Kloos, David (2015): ‘From Acting to Being. Expressions of Religious Individuality in Aceh, ca. 1600-1900’, in: *Itinerario* 39 (3), pp. 437–461.

an Orientalist focusing on the study of Islam. In 1884, he would join Acehese Muslims on their pilgrimage to Mecca, claiming to have converted to Islam himself. On his research trip, he investigated the influence of the Haj on anti-colonial radicalization among Acehese pilgrims. In 1889, Snouck Hurgronje was appointed adviser for Islamic affairs for the colonial government in Batavia. Hurgronje's studies of Acehese Islam were particularly valuable to colonial officials in the Dutch Indies who tended to have only superficial knowledge about the religious and cultural conditions on the ground. Based on his findings from Mecca, in 1891, Snouck Hurgronje advised the colonial government to continue with the military operations, but not to intervene in religious affairs, as he found no sense of unity among Indonesian Muslims. While the Dutch Army should take tough military action against the allegedly "radical" and "fanatic" *ulama* and their followers, he urged the Dutch to re-establish and cooperate with the "secular" *ulèëbalang*.²⁴⁹ Violent military actions under the Dutch general Van Heutz followed, who resorted to brutal counter-insurgency campaigns and "extreme violence" to smash the Acehese's guerrilla tactics.²⁵⁰ In total, the Aceh War cost the lives of approximately 75'000 Acehese, 12'500 colonial soldiers, and 25'000 'coolies'.²⁵¹ In 1903, the War was officially declared over, following the surrender of Sultan Muhammad Daud Syah who was a leading figure in the Acehese resistance. In 1907, the Dutch exiled Sultan Daud, along with other Acehese elites, to the remote island of Ambon, fearing that his continued networks within (former) Acehese resistance fighters might spark further conflict.²⁵² These fears were not unwarranted: the Acehese resistance that formed during the war persisted for another 10 years, and smaller, local revolts continued way into the 1920s. After the Indonesian independence in 1945, separatist movements would re-ignite calls for an independent Acehese state.²⁵³

²⁴⁹ See Missbach, 'The Aceh War', pp. 44–59.

²⁵⁰ For the violent nature of Dutch warfare in Aceh see Menger, Tom (2022): "'Press the Thumb onto the Eye". Moral Effect, Extreme Violence, and the Transimperial Notions of British, German, and Dutch Colonial Warfare, ca. 1890-1914', in: *Itinerario 46 (1)*, pp. 84–108; Wesseling, 'Imperialism & the Roots of the Great War', pp. 103f; Kreike, Emmanuel (2012): 'Genocide in the Kampongs? Dutch Nineteenth Century Colonial Warfare in Aceh, Sumatra', in: *Journal of Genocide Research 14 (3/4)*, pp. 297–315; Bijl, Paul: 'Saving the Children? The Ethical Policy and Photographs of Colonial Atrocity during the Aceh War', in: Protschky, Susie (ed): *Photography, Modernity and the Governed in Late-colonial Indonesia*, Amsterdam: Amsterdam University Press 2015, pp. 103–132; Kloos, 'Dis/connection: Violence, Religion, and Geographic Imaginings in Aceh and Colonial Indonesia, 190s-1920s'.

²⁵¹ See Groen, 'Colonial Warfare and Military Ethics in the Netherlands East Indies, 1816-1941', p. 284.

²⁵² See Gedacht, Joshua (2021): 'Exile, Mobility, and Re-territorialisation in Aceh and Colonial Indonesia', in: *Itinerario 45 (3)*, pp. 364–388.

²⁵³ See Schulze, Fritz: 'From Colonial Times to Revolution and Integration', in: Graf/Schroter/Wieringa (eds), *Aceh. History, Politics, and Culture*, pp. 63–80; Kloos, David (2014): 'A Crazy State: Violence, Psychiatry, and Colonialism in Aceh, Indonesia, ca. 1910-1942', in: *Bijdragen tot de Taal-, Land- en Volkenkunde 170 (1)*, pp. 25–65.

Dutch Imperialism and Acehnese Enemies: Being a ‘Foreign Doctor’ in Aceh

How did ‘medical mercenaries’ from Germanophone Europe position themselves in this conflictuous constellation between the Dutch colonial power, on the one hand, and the Islamic Acehnese, who were oriented towards the Ottoman Empire rather than the Dutch East Indies’ center in Java, on the other? Did they create a ‘racial solidarity’ of sorts? Did they regard themselves as part of larger Christian, European civilization vis-à-vis the Muslim ‘enemy’? Or did they nevertheless hold on to a distinct Swiss, German, or Austrian identity?

Generally speaking, the accounts of Germanophone ‘medical mercenaries’ in Aceh reflect an ambivalent position in the Dutch East Indies as they oscillate between a certain sense of rational distance from this ‘foreign’ and violent war and a simultaneous sense of belonging to European civilization seen as diametrically opposed to the one embodied by the Acehnese enemy. The Swiss medical officer Heinrich Erni does express a certain sympathy for the Acehnese resistance fighters when he admires their “tall, husky figure” and highlights his “greatest respect for [their] bravery and endurance”²⁵⁴ while criticizing the Dutch troops who “did not treat the Acehnese people who fell into their hands very gently either.”²⁵⁵ His admiration for the Acehnese can however just as well be interpreted as a dramatizing element in his published memoirs, serving as a means of self-elevation towards his readership: For all that matters, a strong enemy also makes for a stronger self.

At the same time, Erni explicitly expresses his sympathy with Dutch imperialism in Southeast Asia, admiring the hospitals, railways, and other infrastructures established by the Dutch in Aceh.²⁵⁶ Moreover, in assessing the failure to occupy Aceh, he adds that:

“Atjeh [sic!] is a voracious boil for Holland that defies all firm calculation. Either Holland must give up the occupation of Atjeh altogether since the finances are in disarray and the Dutch East Indies Army in Atjeh is melting like snow in the face of the constant attacks by the enemy population and the devastation wrought by the beri-beri disease. It is becoming more and more difficult to fill the gaps, since advertising in Europe is hindered everywhere, and even in Holland itself no one feels any desire to run into the jaws of his certain doom as a soldier in the Indies [...]. And not only that. All the Muhamedan peoples of the Indies are following the struggle in Atjeh with the greatest zeal. As we sat in the middle of Sumatra, the [native] people had already heard the reports of battles that had taken place faster than we did, because we only read them later in the newspapers. If Holland is defeated in Atjeh, then the moment will come when the other peoples begin to think that they can successfully shake off Dutch rule. With Atjeh, the glory of Holland in the Indies will also fall.”²⁵⁷

²⁵⁴ Erni-Greiffenberg, Heinrich: *Die Behandlung der Verwundeten im Kriege der Niederländer gegen das Sultanat Atjeh*, Basel: Benno Schwabe 1888, p. 39.

²⁵⁵ *Ibid.*, p. 21.

²⁵⁶ *Ibid.*, p. 14.

²⁵⁷ *Ibid.*, p. 74f.

Regarding Erni's position as a 'foreign' European in Aceh, two aspects are striking in the assessment above. First, his mention of Holland's "glory in India" as well as the importance of the "European element" in the army suggest a supposedly superior European civilization to which Erni himself seemed to have felt he belonged, or at least showed a strong solidarity with. Second, Erni contrasts "Europe" with the so-called "Muhamedan [sic!] people" whom he – to a certain extent rightly – assumes to have been united by a strong sense of (religious) solidarity. Whether he is hinting at the involvement of the Ottoman Empire at this point is not clear; what is certain, however, is that he sees the Muslim Acehnese as an 'other' from which he wishes to distinguish himself. Moreover, despite his partial admiration of their bravery and resolution, Erni points to the "fanaticism" of the predominantly Muslim Acehnese, whose belief "that they will enter paradise after death on the battlefield" made them "foolhardy":

"The fanaticism, the idea of the Muhammadans that it would be pleasing to Allah if they went into battle against the unbelievers, and that they would go directly to paradise if they died on the battlefield, made them so foolhardy. In addition, there is the fatalism, which is peculiar to the Muhammadan peoples in general and is also present among the Acehnese, such that they [...] walked calmly and evenly through the fiercest fire of a Dutch company or consecrated themselves to death and stormed into it."²⁵⁸

Heinrich Breitenstein largely agrees with Erni's views on the Acehnese fanaticism, adding that:

"Just as in Java and on the other islands of the Indian archipelago the great multitude of the people wish to maintain and achieve not only peace, but also the domination of the Dutch government, because they can enjoy personal security under its sceptre, and have nothing to fear for their buffalo, for their wife and daughter, while their own prince is and remains a despot, and in Atjeh it is not only the princes but also the priests who suck the people dry under all possible and impossible pretexts."²⁵⁹

By referring to the local powerholders in the Dutch East Indies as "despots", Breitenstein follows the wide-spread European trope of 'Oriental Despotism', or the conception that the political systems of "Oriental" societies were primarily coined by tyrannical, authoritarian, and violent modes of governance.²⁶⁰ Discourses on the "despotic" nature of (middle) Eastern peoples date back to the 8th century when Islam was increasingly perceived as a serious competition and even threat to the Christian gospel. In the philosophy of the Italian theologian St. Thomas Aquinas, "[t]hose who followed Muhammad were regarded [...] as brutal, ignorant 'beast-like men' and desert wanderers." With the rise of the Ottoman Empire in the 16th century, "Islamic countries were seen as a military and political as well as religious threat, in spite of

²⁵⁸ Ibid., p. 14.

²⁵⁹ Breitenstein, Heinrich: *21 Jahre in Indien. Aus dem Tagebuch eines Militärarztes, Dritter Theil: Sumatra*, Leipzig: Th. Grieben's Verlag 1902, p. 160.

²⁶⁰ In the twentieth century, the trope of "Oriental Despotism" was popularized by the German Marxist Karl August Wittfogel. See Wittfogel, Karl: *Die Orientalische Despotie. Eine vergleichende Untersuchung totaler Macht*, Frankfurt am Main: Ullstein 1981.

the lure of profit from Eastern trade and diplomatic relations. Islam continued to be viewed as at least partly responsible for Oriental despotism, the degradation of women, slavery, and a passive, obedient population subject to cruelty and violence.”²⁶¹ To Breitenstein, the inherently “despotic” character of Islamic rulers provided a strong justification for European rule in the Dutch East Indies, where a majority of the colonized indigenous population followed a variation of Islam. Even though some ‘medical mercenaries’ from Germanophone Europe expressed at times ambivalent opinions on the particularly ‘brave’ and ‘masculine’ Oriental ‘enemies’, the Acehnese’s “fanatic” religion and “despotic” nature appeared non-compatible with European civilization they themselves claimed to belong to.

Despite this shared sense of ‘Europeanness’ in Aceh that is expressed in the testimonies of Germanophone medical officers, they were very aware of the transnational composition of the KNIL. In a letter to his mother, the Swiss physician Ernest Guglielminetti, for example, notes that ‘his’ patients came

“from all nations, a Parisian next to a Prussian or Swabian, in perfect harmony for weeks next to each other, then an African with whom we speak Malay, next to him an Italian, who is immensely pleased to be able to recount his dolores to a doctor in Italian after so long, after so many years, then some Dutchmen - but I always have to speak Dutch to my colleagues – next to them some Malays (from Sumatra) or Javanese or Roman Catholics from the north of Borneo, where missions still exist, it is with some pleasure to see how they all come to mass on Sunday in their own famous colorful paillettes [...]”²⁶²

Interesting about Guglielminetti’s observations here is that again there seemed to have been a shared sense of comradeship among the ‘foreign’ European militaries, such as between the French and the German soldiers, despite the Franco-Prussian War (1870-1871) that had not been long in the past. Furthermore, Guglielminetti, himself a devoted Catholic, who was born in the Swiss canton of Wallis to a British mother and an Italian father,²⁶³ expressed his sympathies with fellow “Catholics” from Borneo. In a further letter to his mother, that he drafted shortly before Easter, he expresses his hope to “reach a priest” soon or to “kiss the ring of the Bishop in Batavia”. As there “are not many Catholic physicians in the Indies”, he is confident that he “can do so many good deeds in the hospitals for our [Catholic] religion and save so many poor souls.” While the nurses, most of whom were recruited among soldiers, forget about the

²⁶¹ Curtis, Michael: *Orientalism and Islam. European Thinkers on Oriental Despotism in the Middle East and India*, Cambridge: Cambridge University Press 2009, pp. 31f. Also see Rubiés, Joan-Pau (2005): ‘Oriental Despotism and European Orientalism: Botero to Montesquieu’, in: *Journal of Early Modern History* 9 (1/2), pp. 109–180; Zou, Yufei (2023): ‘The Concept of “Oriental Despotism” in Modern Japanese Intellectual Discourse’, in: *The International History Review* 45 (3), pp. 462–477.

²⁶² Letter from Ernest Guglielminetti to his mother, Fort de Cock, 15 August 1887, in: Universitätsbibliothek Basel (UB), Nachlass (NL) 175, Aa 1-27, A9.

²⁶³ See Heldner, Paul: ‘Guglielminetti, Ernest’, in: *Historisches Lexikon der Schweiz (HLS)*, 04.12.2006. Online: <https://hls-dhs-dss.ch/de/articles/014394/2006-12-04/>, [accessed: 11.04.2023].

salvation of their patients, Guglielminetti himself always “calls for a priest of pastor” before his patients pass away. “The poor, fatally ill”, he adds, “never knows that the end is near and he often feels embarrassed in front of the other soldiers, but he never says no when I advise him to settle his accounts with heaven – for greater security and for his own peace of mind.”²⁶⁴ In other words, despite being in the Dutch East Indies, and despite Protestantism being the hegemonic denomination in the Netherlands, Guglielminetti, or at least he claimed so towards his mother, adhered to his Catholic heritage. Furthermore, in other letters he expressed how deeply he misses his *Heimat* in the small, alpine town of Brig when he wrote:

“Let me remain silent this time, dearest Mother, about India [...] but today let us chat about Brig and tell me, dear Mother, why you write to me so seldom about Brig and its people, why don’t I hear about [my brother] Guillaume [...] – that is absolutely not very kind of people to let me hear so little about them. No one writes about the Simplon Tunnel, no one about the season etc. Yes, I do receive the Walliser Bote diligently, but there is nothing in it but about illness, about school correspondence from Goms and the First Mass [Primizfeier] [...]”²⁶⁵

Guglielminetti’s letter suggests that national origin alone falls short of empirically grasping the positionality of ‘foreign’ medical officers in the transimperialy composed Dutch Colonial Army. His desire to learn about the planned construction of the Simplon Tunnel – a tunnel completed in 1906 that connected Brig, and with that Western Switzerland, with Domodossola in Italy²⁶⁶ – points to the strong significance of regional belonging as well as the cultural specificities within nation states such as Switzerland. The modern state of Switzerland, founded under the ideology of federalism, not only united three national languages – German, Italian, and French²⁶⁷ – but also politically conservative, Catholic with liberal, Protestant Cantons.²⁶⁸ Moreover, the fact that Guglielminetti seemed to have been able to order regional newspapers from home highlights the crucial role of the print press in the dissemination of national or regional belonging across space and time.²⁶⁹ It was by reading a small, local newspaper, the

²⁶⁴ Letter from Ernest Guglielminetti to his mother, Rau, 24 March 1888, in: UB NL 175, Aa 1-27, A18.

²⁶⁵ Letter from Ernest Guglielminetti to his mother, Hospital Padang, undated, in: UB NL 175, Aa 1-27, A13.

²⁶⁶ For the significance of the Simplon Tunnel in transnational transportation in Central Europe, see Leimgruber, Walter: ‘Small Regional Centres at the Periphery of Switzerland’, in: Bański, Jerzy: *The Routledge Handbook of Small Towns*, New York: Routledge 2021, pp. 244–253, here pp. 248–250; Bärtschi, Hans-Peter: ‘Bern-Lötschberg-Simplon-Bahn (BLS)’, in: *Historisches Lexikon der Schweiz (HLS)* 03.07.2002. Online: <https://hls-dhs-dss.ch/de/articles/041999/2002-07-03/>, [accessed 19.05.2023].

²⁶⁷ In 1938, a fourth language – Romansh – was officially added.

²⁶⁸ There is an extensive body of literature on the foundation of the Swiss Nation State as well as the role of Christian denomination, linguistic and regionalism, and federalism within it. Good overviews are Maissen, Thomas: *Geschichte der Schweiz*, Baden: Hier und Jetzt 2010; Du Bois, Pierre: *La Guerre du Sonderbund. La Suisse de 1847*, Neuchâtel: Éditions Livreo-Alphil 2018.

²⁶⁹ For the role of the print press in 19th century nationalism see Anderson, Benedict: *Imagined Communities. Reflections on the Origin and Spread of Nationalism*, London: Verso 1993, pp. 37–46; Harrison, Henrietta (2000): ‘Newspapers and Nationalism in Rural China 1890-1929’, in: *Past & Present* 166, pp. 181–204; Mukharji, *Nationalizing the Body. The Medical Market, Print and Daktari Medicine*.

Walliser Bote, that Guglielminetti hoped to uphold ties to his home in Brig. The Prussian medical officer Friedrich Wilhelm Stammeshaus, too, emphasized in the letters to his relatives how reading enabled him to maintain his ‘Germanness’ in Aceh. In a letter to his brother-in-law, he describes how he, “a captain and three officers” kept a “communal board and also form a reading society that acquires magazines, books, etc. from Europe.” “In this way,” he adds, “we receive several German (Leipz. Zeitung, [...] fliegende Blätter, deutsche Rundschau), Dutch [...] and French magazines and newspapers once a week with every arriving steamship, so that there is no lack of reading material.”²⁷⁰

The fact that both Guglielminetti and Stammeshaus were able to not only send and receive regular letters to and from their relatives but also receive a variety of local newspapers from home indicates the importance of transportation systems and communication infrastructures in the exchange of information between the colonies and Europe in the late 19th century.²⁷¹ As their letters demonstrate, these infrastructures reached beyond the European metropolises in Paris or London all the way into alpine Wallis or rural Prussia. Thereby, knowledge on the war in Aceh in northwestern Sumatra, or at least European representations thereof, reached bourgeois living rooms in the European ‘hinterlands’ seemingly unaffected by empire. Due to these well-established communication networks, the presence of Germanophone soldiers and physicians in the Dutch Colonial Army was also noted in the Swiss, German, and Austrian daily press. In 1884, for example, the *Norddeutsche allgemeine Zeitung* had received a letter by a German soldier in Aceh who reported that

“the numerous German elements who are unfortunately among the ranks of the Dutch Colonial Army remain loyal and devoted to their fatherland even in foreign countries and in circumstances that are felt to be oppressive by every single one of them, and that they even strive to prepare a space for German associations [Vereine]. Thus, among the approximately 1000 German soldiers in Atschin, there are no less than three German associations with the name ‘Germania’, which have made it their task to cultivate and promote Germanism [Deutschthum] according to the prevailing conditions. They seek to achieve this goal through social endeavors and by establishing a spiritual connection with their homeland.”²⁷²

²⁷⁰ Letter from Friedrich Wilhelm Stammeshaus to brother-in-law in spe, Olegli, 5 December 1880, private collection.

²⁷¹ See Ishiguro, Laura: *Nothing to Write Home About. British Family Correspondence and the Settler Colonial Everyday in British Columbia*, Vancouver: UBC Press 2019; Sinha, Nitin: *Communication and Colonialism in Eastern India: Bihar, 1760s-1880s*, London: Anthem Press 2012; Wenzlhuemer, *Connecting the Nineteenth-Century World: The Telegraph and Globalization*, Cambridge: Cambridge University Press 2014; Wenzlhuemer, Roland (2010) ‘Globalization, Communication and the Concept of Space in Global History’, in: *Historical Social Research* 35 (1), pp. 19–47; Headrick, Daniel (2010): ‘A Double-Edged Sword: Communications and Imperial Control in British India’, in: *Historical Social Research* 35 (1), pp. 51–65; Müller, Simone (2010): ‘The Transatlantic Telegraphs and the “Class of 1866” – the Formative Years of Transnational Networks in Telegraphic Space, 1858-1884/89’, in: *Historical Social Research* 35 (1), pp. 237–259; Potter, Simon (2007): ‘Webs, Networks and Systems: Globalization and the Mass Media in the Nineteenth- and Twentieth-Century British Empire’, in: *Journal of British Studies* 46 (3), pp. 621–646.

²⁷² ‘Osten’, in: *Norddeutsche allgemeine Zeitung, Abend-Ausgabe*, 20 November 1884.

In general, in the 19th century, associations (*Vereine*), such as the “Germania associations” mentioned in the newspaper article above, played a paramount role in the social life of German-speaking Europeans. The historian Andreas Zangger has elucidated how Swiss national associations (*Schweizervereine*) in colonial Sumatra and Singapore allowed Swiss individuals in the colonies to negotiate and maintain a self-image of being ‘Swiss’ by mingling with fellow compatriots.²⁷³ In Aceh, too, such associations seemed to have enabled Germans in the Dutch colonial army to uphold their distinct national identity despite serving a ‘foreign’ empire far away from home.

The fact that even among ‘Europeans’ in Aceh there could be significant national and regional differences in their self-perception and positioning within the *situation coloniale* is further illustrated by the example of the Czech medical officer Pavel Durdik. Durdik was born in Hořice in 1843, a town in Bohemia that then belonged to the Austrian-Hungarian Empire. Durdik published his memoirs about his experiences in the Aceh War in Czech, primarily addressing a Czech-speaking readership and aiming at fostering nationalist sentiments. Aligning with his engagements in the Czech nationalist movement, Durdik expresses his sympathies for the Acehnese resistance against the Dutch when he writes that:

“A nation can only succeed if it can defend its independence at the cost of its life and fortune. This is what we see in the Middle Ages with the inhabitants of the Netherlands and Montenegro. In our time, among the Italians and Hungarians. We also see it among the Acehnese. The Dutch declared war on the Acehnese. First, they wanted to take over their very lucrative pepper trade; then they wanted to force the subjugated Acehnese to cultivate coffee for their own warehouses, as 20 million Javanese do, making millions and millions for the Dutch. The strict Protestants in Holland are convinced that the ‘Dutch God’ has created the fearful and servile Javanese so that the pious Dutch can exploit them. This would be a reward for their adherence to pure Christian doctrine. Following the Javanese, the Acehnese were also expected to make money for the Dutch. But things turned out differently. The Acehnese started their ‘little war’ [guerrilla] without operational plans, without cavalry and without modern firearms. The Dutch soldiers, when unable to use their repeating rifles properly to escape from hand-to-hand combat, fell under the klewang like pears or tried to run away in the bush – they said so themselves.”²⁷⁴

Durdik goes even further in his admiration for the Acehnese, drawing parallels between the war in Aceh and the Czech struggle for independence. “But let’s get back to Europe”, he writes in his memoirs, after having introduced his readers to the war in Aceh, “and here we have to talk about it differently in general and about us Czechs in particular. A nation of indifferent good people, a nation with no self-respect and no pride, will always be a submissive, obedient, and servile nation, existing only for others and not for itself.” Even though, he adds, “[s]ince

²⁷³ Zangger, *Koloniale Schweiz. Ein Stück Globalgeschichte zwischen Europa und Südostasien (1860-1930)*, Bielefeld: Transcript 2011, p. 171; pp. 415–432.

²⁷⁴ Durdik, Pavel: *Un Médecin Militaire à Sumatra. Récits de la Guerre d’Atjeh (1877-1883)*, translated by Ludvik Kalus and Claude Guillot, Paris: L’Harmattan 2010, p. 43.

1848 we have had almost two generations of educated people, and we still kiss the hand, even the one that hits us, as long as it is that of a great lord. And yet, men of strong character, attached to solid principles and with ordinary national pride can render better service to our nation than the whole crowd of decent people dependent on the government or on cathedral scholars.”²⁷⁵ The Acehnese, on the other hand, “do not need these heroes of Blaník (of the Golden Mountain), for they are brave and courageous themselves, and can easily do without the heroes and titans of children's stories.”²⁷⁶ By referring to the “heroes of Blaník”, Durdik echoed a well-known story from Czech mythology. According to the legend probably dating back to the 15th century, Blaník, a mountain in today’s Czech Republic, was inhabited by a sleeping, but undefeatable army, that will be awakened at the enemies’ arrival. The legend of Blaník was re-discovered in the context of Czech nationalism towards the late 19th century.²⁷⁷ Other than the Czech people, Durdik suggests to his readers, the Acehnese did allegedly not need mythological “heroes” but succeeded in their resistance due to their “bravery” alone. Despite his apparent sympathies for the Acehnese, it is important to note here that Durdik was nevertheless himself an active participant in the Dutch invasion of Aceh. This tension between his own position as a second-class medical officer with the KNIL and his alleged solidarity with the Acehnese resistance is not reflected in his memoirs.²⁷⁸ For as will be discussed in the following section, many ‘medical mercenaries’ *did* ascribe themselves an important and rather active role in “fighting” diseases prevalent in the Dutch Colonial Army in Sumatra.

²⁷⁵ Ibid., pp. 47f.

²⁷⁶ Ibid., p. 53.

²⁷⁷ See Holubec, Stanislav (2021): ‘Between the Czech Krkonoše and the German Riesengebirge: Nationalism and Tourism in the Giant Mountains, 1880s–1930s’, in: *Nationalities Papers*, pp. 1–23.

²⁷⁸ The historian Tomasz Ewertowski has analyzed Polish travel writings on nineteenth-century Java that show similar discursive tensions between national identity and partaking in colonial discourses, see Ewertowski, Tomasz: ‘Javanese Mosaic. Three Polish Representations of Java from the Second Half of the 19th Century’, in: *Indonesia and the Malay World 50 (147)*, pp. 211–233, pp. 211–233.

Invisible Enemies: Masculinity, ‘Medical Mercenaries’, and the Beriberi Problem

In their testimonies, many ‘medical mercenaries’ repeatedly asserted their expert status as university-educated men. “As both doctors and servicemen”, historian Jessica Meyer points out, “these men held positions which gave them access to important forms of masculine authority, particularly over young working-class rankers, through officer status and professional expertise.”²⁷⁹ At the same time, being non-combatant army officers living among combatant troops, medical officers held an ambivalent position within these homosocial, male, and highly violent spaces. Even though, as the historian John Tosh had observed, late 19th century Victorian masculinity was coined by a “declining investment in physical violence”,²⁸⁰ many ‘medical mercenaries’, as becomes evident in their testimonies, felt the need to constantly reiterate their importance within the army as well as their manliness, despite refraining from physical violence. For as has been observed by Philippa Levine, “the colonial experience figured prominently as a place where one’s manliness could be forged and tested in rigorous but heroic conditions.”²⁸¹ Physicians in Aceh claimed such manly characteristics by underlying the fact that they, too, experienced violence, hardships, and dangers. In doing so, they attributed themselves with hegemonic, masculine traits such as bravery commonly embodied by the combatant troops. The Austrian medical officer Heinrich Breitenstein even goes as far as to claim in his memoirs that, in fact, the physician was the bravest member of the army when he wrote that:

“The doctor [...] must suppress the storm in his soul; he must not defend his life; he must save the lives of those close to him, he lets the bullets whiz around his ears, he does not think of his life – he must remain calm; he is braver because he does not have to fight, he is braver because he cannot fight [...]”²⁸²

As we can see here, Breitenstein ascribes physicians – and with that implicitly also himself – a particularly crucial role in the Aceh War. And in some ways, he was right in his assessment: thousands of European and indigenous troops serving the Dutch troops succumbed to the persistent Acehnese resistance fighters’ *klewang* and an even greater number died of allegedly tropical, epidemic, or venereal diseases.²⁸³ Furthermore, as the quote implies, medical officers,

²⁷⁹ Meyer, Jessica (2020): ‘Medicos, Poultrice Wallahs and Comrades in Service. Masculinity and Military Medicine in Britain during the First World War’, in: *Critical Military Studies* 6 (2), pp. 160–175, here p. 165.

²⁸⁰ See Tosh, John (2005): ‘Masculinities in an Industrializing Society. Britain, 1800-1914’, in: *Journal of British Studies* 44 (2), pp. 330–342, here, p. 333.

²⁸¹ Levine, Philippa: *Prostitution, Race & Politics. Policing Venereal Disease in the British Empire*, New York: Routledge 2003, p. 258.

²⁸² Breitenstein, *Sumatra*, p. 151.

²⁸³ See Den Hertog, *De Militair-Geneskundige Verzorging in Atjeh*, pp. 83–102.

often found themselves in the midst of the battlefields, in particular when they joined military expeditions in the military posts in the interior of Sumatra. In his memoirs, the Swiss Heinrich Erni remembers how “the physician, who was stationed on one of these posts, was also responsible for the neighboring posts” that he visited “once or twice a week with a military escort.” “Visiting the neighboring posts”, he adds, “was often dangerous when the Acehnese attacked the convoys, which happened to me four times in 1882. Or if the Acehnese attacked the posts, one had to try to get through the fire unscathed.”²⁸⁴ Dangers awaited even in the Dutch-occupied capital of Aceh in Kota Radja. When describing the central hospital, Erni adds how “A whole row of barracks stood next to each other and were protected against attacks from the Acehnese by a two-man-high strong palisade fence, in which there were firing embrasures. Every evening a division of troops came to the hospital on guard and manned the various posts.”²⁸⁵ As Erni’s descriptions suggest, in the context of colonial warfare, such experiences of dangers “on the ground” were part and parcel of the self-fashioning of European men, in particular if they – as in the case of medical officers – occupied an ambivalent position in the colonial social order as non-combatant militaries with officer status. A further key element of this self-representation of ‘medical mercenaries’ was the importance of their own roles as physicians within the KNIL. Erni’s contemporary Heinrich Breitenstein, for example, wrote that:

“In its principles, the modern science of war is as much dependent on the performance of dead material as it is on that of living material; military hygiene is therefore an important part of war science, and its representatives – the military doctors – are for this reason alone an equal part of the army system.”²⁸⁶

Interestingly, Breitenstein hence strongly emphasizes the “scientific nature” of both warfare and medicine. On the one hand, this corresponds with the increased rationalization of warfare, that historians have described as a typical attribute of European modernity.²⁸⁷ On the other hand, Breitenstein’s notion of a “scientific” physician is symptomatic of medicine in the age of the ‘laboratory revolution’, which was accompanied by an elevated self-confidence of European medical experts, who increasingly regarded themselves both as practitioners and as scientists (see chapter 3). This confidence was, however, tarnished by the dangers encountered in the tropical environment, that to physicians was of much greater concern than the Acehnese

²⁸⁴ Erni, *Die Behandlung der Verwundeten*, pp. 29f.

²⁸⁵ *Ibid.*, p. 17.

²⁸⁶ Breitenstein, *Sumatra*, p. 151.

²⁸⁷ See Martin, John Levi (2005): ‘The Objective and Subjective Rationalization of War’, in: *Theory and Society* 34 (3), pp. 229–275; Pick, Daniel: *War Machine. The Rationalisation of Slaughter in the Modern Age*, New Haven: Yale University Press 1993.

“enemy” and their *klewang*. Heinrich Erni, for example, describes the Aceh River as an “enemy [...] just as dangerous as the Acehnese”, in particular in the rainy season when it “regularly overflows its banks.”²⁸⁸ In a letter to his brother-in-law, Friedrich Wilhelm Stammeshaus compares the war in Aceh with his experiences in the Franco-Prussian War, writing that:

“Once again, I find myself on the battlefield, as I did 10 years ago, but the circumstances are somewhat different. Back then, a national war with a national army to defend the fatherland, here a colonial war to subjugate a [...] tribe with a mercenary army in a tropical country where, in addition to the fanatical enemy, the climate must be defeated too.”²⁸⁹

Heinrich Erni, too, would remark that the “unhealthy tropical climate” claimed “way more victims than the enemy’s bullet.”²⁹⁰ Indeed, the tropical environment, and more particularly, “tropical” diseases such as malaria and beriberi, deeply troubled Western physicians in the tropics.²⁹¹ While malaria – though still fatal in many cases – could be more or less effectively treated with quinine, a medication extracted from the cinchona bark, beriberi, a vitamin B1 deficiency with diverse and contradicting symptoms that often resulted in death, left physicians in the 1880s and 1890s largely clueless.²⁹² As a glimpse into the official reports (*Kolonial Verslag*) by the Dutch colonial government reveals, beriberi caused the most illness-related absences and fatalities in Aceh on the part of the Dutch, in particular among their indigenous troops. In 1880, for example, 3290 troops stationed in Aceh fell ill with beriberi, among whom 366 succumbed to the disease, as opposed to 303 suffering from dysentery (with 99 deaths) and a mere 8 cases of “gewalddadige dod” (violent killing).²⁹³ In a rather pessimistic manner, Heinrich Breitenstein commented:

“If, therefore, [...] 25% [of native soldiers who had fallen ill with beri-beri] had died, it can be understood that a constant change of troops had to take place to be able to hold out against the brave and courageous Acehnese. [...] Unfortunately, the Indian army was too small to be able to send fresh and healthy soldiers to Aceh. [...] With such heavy loss of life, *everything stood helpless in the face of this invisible enemy*; public opinion, the Dutch government and the Indian government loudly demanded a remedy, because otherwise the army would be worn out in Aceh or Sumatra's north coast would have to be abandoned. *Since the military medical corps in Aceh itself knew of no remedy for this dreadful condition*, the inspector of the civil medical service was sent to Aceh in September to study the disease and make suggestions for its improvement.”²⁹⁴

²⁸⁸ Erni, *Die Behandlung der Verwundeten*, p. 20.

²⁸⁹ Letter from Friedrich Wilhelm Stammeshaus to brother-in-law, 5 December 1880, private collection.

²⁹⁰ Erni, *Die Behandlung der Verwundeten*, p. 13.

²⁹¹ See Arnold, David: ‘Introduction. Tropical Medicine before Manson’, in: idem (ed): *Warm Climates and Western Medicine*, pp. 1–19.

²⁹² See Arnold, David: *Colonizing the Body. State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press 1993; Arnold, David (2010): ‘British India and the “Beriberi Problem”’, in: *Medical History* 54 (3), pp. 295–314; Carpernter, Kenneth: *Beriberi, White Rice, and Vitamin B. A Disease, a Cause, and a Cure*, Berkeley: University of California Press 2000. Also see chapter 3.

²⁹³ *Kolonial Verslag*, Bijlage D, pp. 2–6, ’s Gravenhage: Algemeene Landsdrukkerij 1881.

²⁹⁴ Breitenstein, Heinrich (1887): ‘Briefe aus Indien. Die Beri-Beri-Epidemie auf Atjeh’, in: *Internationale Klinische Rundschau*, pp. 902–905, here p. 904. Emphasis added by the author.

What is striking about Breitenstein's analysis of the devastating effects of the beriberi disease is how the medical officer resorts to a military vocabulary implied by terms such as the "invisible enemy", who could, analogous to the Acehnese resistance, not be defeated.²⁹⁵ Somewhat contradictory to the self-fashioning of 'medical mercenaries' in Aceh, who presented themselves as both brave and heroic military men while simultaneously embodying the advances of European medical science in the age of the 'laboratory revolution', their accounts on the pathogenic particularities of the tropical environment as well as diseases such as beriberi makes them appear rather helpless. The rationalization and medicalization of modern warfare, as it seems, remained a chimera, and European medicine was never the omnipotent "tool of empire" some scholars want us to believe.

²⁹⁵ For military rhetoric in medical language see De Souza Correa, Silvio Marcus (2016): 'Contre les "Ennemis Invisibles": Récits de Deux Médecins Militaires sur le Sud-Ouest Africain Allemand (1904-1905)', in: *Histoire, Médecine et Santé* 10, pp. 79–93; Gradmann, Christoph (2000): 'Invisible Enemies. Bacteriology and the Language of Politics in Imperial Germany', in: *Science in Context* 13 (1), pp. 9–30.

2.2 Class: Vice in the Camps and *Kampoengs*

In the context of asymmetric guerrilla warfare in Aceh, European soldiers and officers always had to be alert to hostile attacks. Nevertheless, their daily lives in the *kampoengs* in northwestern Sumatra were often characterized by monotony and boredom. Many European soldiers in Aceh would thus kill time by jointly singing songs and drinking alcohol.²⁹⁶ The KNIL troops received a daily ration of alcohol in order to help them endure the hardships of their day-long expeditions into the jungles of the Malay Archipelago: “There was no setting out without the morning ration of gin. In the course of the morning, a second drink was passed out, an extra tot of gin, intended to renew the troops’ energy.”²⁹⁷ Others killed their time by visiting local prostitutes living as “camp followers” in the vicinity of the military stations.²⁹⁸ Meanwhile, many upper- and middle class Europeans in the colonies observed the “licentious” behavior of these “white subalterns” – in particular lower-class European soldiers and sailors – with a high degree of concern, as it threatened the myth of European superiority on which their rule over the colonies was ideologically based.²⁹⁹

Alcohol

Medical officers who were in charge of monitoring the bodies of European lower-class soldiers in military hospitals and on expeditions observed the soldiers’ drinking behavior with utmost concern. “Most officers”, historian Erica Wald observes in the case of military medicine in colonial India, “held strong class assumptions that meant that they viewed the soldiers as brutish, barely controllable louts.”³⁰⁰ At the same time, the nineteenth century “was a time of

²⁹⁶ See Krauer, Philipp: *Colonial Mercenaries. Swiss Military Labour and the Dutch East Indies, c. 1848–1914*, PhD thesis, ETH Zurich, Zurich 2022, pp. 73–77.

²⁹⁷ De Moor, ‘An Extra Ration of Gin for the Troops’, p. 138.

²⁹⁸ See Hesselink, Liesbeth: ‘Prostitution. A Necessary Evil, Particularly in the Colonies. Views on Prostitution in the Netherlands Indies’, in: Locher-Scholten, Elsbeth/Niehof, Anke (eds): *Indonesian Women in Focus. Past and Present Notions*, Leiden: KITLV Press 1992, pp. 205–224; for a broader South and Southeast Asian context see Pivar, David (1981): ‘The Military, Prostitution and Colonial Peoples’, in: *The Journal of Sex Research* 17 (3), pp. 256–269; Mondal, Sonia (2022): ‘Women in Cantonments. Evolution of Regulated Military Prostitution in Colonial India’, in: *Indian Journal of Gender Studies* 29 (3), pp. 384–393.

²⁹⁹ See Fischer-Tiné, Harald: *Low and Licentious Europeans. Race, Class, and “White Subalternity” in Colonial India*, New Delhi: Orient Blackswan 2009; Fischer-Tiné, Harald: ‘Liquid boundaries. Race, Class, and Alcohol in Colonial India’, in: Fischer-Tiné, Harald/Tschurennev, Jana (eds): *A History of Alcohol and Drugs in Modern South Asia*, London: Routledge 2013, pp. 89–115.

³⁰⁰ Wald, Erica: *Vice in the Barracks. Medicine, the Military and the Making of Colonial India, 1780-1868*, London: Palgrave Macmillan 2014, p. 3. Also see Stanley, Peter: *White Mutiny. British Military Culture in India*, New York: New York University Press 1998; Peers, Douglas: ‘Imperial Vice. Sex, Drink and the Health of British

growing hostility to alcohol. Religious, feminist, and welfare campaigners pointed to the physical and spiritual misery liquor strewed in its path, and the temperance pledge became a watchword of serious respectability.”³⁰¹ However, even within the European anti-alcohol movement, opinions on the ‘right way’ to deal with the alcohol issue, in particular among the lower classes, could differ heavily. While certain anti-alcohol advocates called for moderate consumption, the so-called ‘teetotalers’ endorsed the complete abstinence of alcoholic beverages.³⁰²

Some medical officers in the Dutch East Indies would follow the calls for abstinence shared by some of their contemporaries in Europe. In 1895, a number of “noble officers” founded the *Amethysten Vereeniging* (Amethyst Association), a society dedicated to uplifting “mindere militairen” (lower-rank soldiers) in the Dutch Colonial Army. In the first paragraph of its statutes, the Association declares its main purpose which is “to counteract alcoholism in society and especially the abuse of alcoholic beverages by the Dutch East Indies Army and Navy and thus to contribute to the eradication of alcoholism.”³⁰³ At the forefront of the society’s foundation was the German medical officer Dr. Fiebig, who regularly shared his “scientific” (sic!) views on the moral and health-related urgency of abstinence among KNIL militaries in the Dutch East Indies press as well as in public talks.³⁰⁴ To Fiebig, stressing the scientificity of medicine served as a discursive tool of asserting authority within the complex social space of the multi-ethnic colonial army.³⁰⁵ However, like in Europe, voices calling for complete abstinence occupied a minority position within the anti-alcohol discourse. Most of Fiebig’s

Troops in North Indian Cantonments, 1800-1858, in: Killingray, David/Omissi, David (eds): *Guardians of Empire. The Armed Forces of the Colonial Powers, c. 1700-1964*, Manchester: Manchester University Press 1999, pp. 25–52; Fischer-Tiné, ‘Liquid Boundaries’.

³⁰¹ Levine, *Prostitution, Race & Politics*, p. 274. For the history of late nineteenth century temperance more broadly see Pilley, Jessica/Kramm, Robert/Fischer-Tiné, Harald (eds): *Global Anti-Vice Activism, 1890-1950. Fighting Drinks, Drugs, and “Immorality”*, Cambridge: Cambridge University Press 2016; Kamenov, Nikolay: *Global Temperance and the Balkans. American Missionaries, Swiss Scientists and Bulgarian Socialists, 1870-1940*, Cham: Palgrave Macmillan 2020.

³⁰² See Spöring, Francesco: *Mission und Sozialhygiene: Schweizer Anti-Alkohol-Aktivismus im Kontext von Internationalismus und Kolonialismus 1886-1939*, Göttingen: Wallstein Verlag 2017, pp. 53–56; Yeomans, Henry: *Alcohol and Moral Regulation. Public Attitudes, Spirited Measures and Victorian Hangovers*, Bristol: Policy Press 2014, pp. 35–64; Blok, Gemma (2012): ‘Gentle Knights: Masculinity, Teetotalism and Aid for Alcohol Abuse c. 1900’, in: *BMGN – Low Countries Historical Review* 127 (1), pp. 101–126.

³⁰³ Red. D. C. ‘Open Brief aan de mindere Militairen in Nederlandsch-Indië’, in: *Deli Courant*, 24 August 1895.

³⁰⁴ See, for example, Fiebig, Friedrich Joseph Max: ‘Alcoholisme en Amethysme. Een Woord ter Opheldering’, in: *De Nieuwe Vorstenlanden*, 15 July 1896; ‘Lezing over het Amethysme te houden door Dr. Fiebig in de Militaire “Sozieteit Concordia”’, in: *Java-Bode*, 5 May 1897.

³⁰⁵ For tensions surrounding lay vs. professional/medical opinions on alcohol consumption see Goodman, Sam (2018): ‘Unpalatable Truths. Food and Drink as Medicine in Colonial British India’, in: *Journal of the History of Medicine and Allied Sciences* 73 (2), pp. 205–222. For the medicalization of anti-alcohol movements see Spöring, *Mission und Sozialhygiene*, pp. 56–65; Kamenov, *Global Temperance and the Balkans*, pp. 107–113

colleagues in the Dutch Colonial Army did not share his radical views on complete abstinence. Commenting on Fiebig's Amethyst Association, Heinrich Breitenstein wrote that

“I doubt whether this association will and can successfully propagate its theories. Dr. Fiebig condemns the use of alcohol in any form, at any time and under any circumstances, i.e. he finds alcohol not only superfluous but even harmful, even in the hands of doctors. Dr. Fiebig therefore goes too far, he misses the point and loses a large part of his supporters in precisely those circles which are called upon to support his plans to counteract the harmful influence of the abuse of alcohol, which he would have had if he had stuck to the actual circumstances.”³⁰⁶

Instead, Breitenstein shares the conviction that alcohol, if consumed in moderation, can even benefit one's health in the tropics. “When I had annoyance upon annoyance in Muarah Teweh,” he commented his time in remote Borneo, “I lost my appetite; but a little glass of wine stimulated it to such an extent that I could eat something [...]”³⁰⁷ Sharing this view, his colleague Heinrich Erni, points to the fact that “[o]ne may be zealous against this use of liquor as one wishes, but it is nevertheless true that a glass of it before a meal promotes digestion that is very slack due to the warm climate and needs stimulation.” He adds that even officers “drank their liquor, usually before lunch or dinner.” This of course did not mean that they regarded excessive alcohol consumption among European soldiers as *per se* unproblematic. “It is clear”, Erni wrote, “that abuse is harmful, especially in a climate where the liver is already suffering enough.”³⁰⁸ Breitenstein even goes as far as to describe chronic alcoholism as a “bogey man” (*Schreckensgespenst*), haunting a great number of European troops trying to relieve their pain and boredom.³⁰⁹ Justifying his own occasional alcohol consumption, he however adds that “[i]f I have, or have had, the strength of character [*Charakterstärke*] to drink wine with pleasure, and my means permitted me to drink wine in any quantity, and yet to make only a modest use of it, then I may cautiously appeal to everyone to do the same.”³¹⁰ In other words: In contrast to the lower-class soldiers, who were allegedly easily tempted by the vices encountered in the barracks, medical officers claimed to embody bourgeois virtues such as self-restraint and temperance that allowed them to consume alcohol in a respectable and even healthy manner.

Not only the quantity, but also the quality of the alcohol consumed could become a strong marker of class distinction within a colonial setting. As has been argued by the historian Sam Goodman, “the act of drinking [had] as much to do with social performance as [...] with

³⁰⁶ Breitenstein, Heinrich: *21 Jahre in Indien. Aus dem Tagebuche eines Militärarztes, Erster Theil: Borneo*, Leipzig: Th. Grieben's Verlag 1899, p. 25.

³⁰⁷ *Ibid.*, p. 26.

³⁰⁸ Erni, *Die Behandlung der Verwundeten*, p. 26.

³⁰⁹ Breitenstein, *Sumatra*, p. 99.

³¹⁰ Breitenstein, *Borneo*, p. 27.

personal taste, with space in each instance a governing influence on choice of beverage, intent, behavior, and the perceived identity of the drinker themselves.”³¹¹ Local liquors, for example, were considered to be, though cheaper, unpalatable, unhealthy, and were often subjected to illegalization or heavy regulation.³¹² ‘Sound’ European alcoholic beverages such as ale or beer, on the other hand, were regarded as a more suitable choice for European soldiers to consume.³¹³ In the Dutch East Indies, too, the *what*, *where* and *when* of alcohol consumption was closely monitored towards the end of the 19th century. The canteens surrounding the military camps, in particular, were seen as appropriate spaces to contain the negative effects of drunkenness as they ‘shielded’ the European soldiers’ licentious behaviors from the public gaze and allowed to control both the quality and quantity of drinks served. In 1890, the Dutch East Indies Army Administration examined whether the draught beer prices in the remoter military canteens – where prices skyrocketed due to high transportation costs – could be reduced somehow. Through these price reductions, the army hoped for a decrease in “cases of drunkenness” that had become noticeable “in the more conveniently located canteens where beer prices are affordable for the soldier, from which it can be deduced that the soldier makes less use of the poor, harmful alcoholic drinks available outside in the pubs at low prices.”³¹⁴

Moreover, while the consumption of local liquor or gin was considered to be inherently unhealthy and somewhat immoral, drinking imported, European beverages containing a low percentage of alcohol could become a marker of bourgeois, European respectability.³¹⁵ This is reflected in the letters of the Swiss ‘medical mercenary’ Ernest Guglielminetti. In the writings to his parents from Aceh, he repeatedly complains about the low quality of alcohol – in particular the beer and gin – available in the Dutch camps. It is therefore “with great joy” that he remarks on the arrival of a parcel he requested from Switzerland that contained, among others, “12 bottles of white wine Fendant (8% Alcohol)”, “1 Para slipper blue”, “1 sausage

³¹¹ Goodman, Sam (2020): ‘Spaces of Intemperance & the British Raj 1860-1920’, in: *The Journal of Imperial and Commonwealth History* 48 (4), pp. 591–618, here, p. 595.

³¹² See Hardiman, David (1985): ‘From Custom to Crime. The Politics of Drinking in Colonial South Gujarat’, in: *Subaltern Studies* 4, pp. 165–228; Korieh, Chima: ‘Dangerous Drinks and the Colonial State. Illicit Gin Prohibition and Control in Colonial Nigeria’, in: *African Economic History* 31, pp. 101–115; Fischer-Tiné, *Liquid Boundaries*, pp. 93f.

³¹³ See Wald, Erica (2018): ‘Governing the Bottle: Alcohol, Race and Class in Nineteenth-Century India’, in: *The Journal of Imperial and Commonwealth History* 46 (3), pp. 397–417, here pp. 398 f.; Groeneveld, Sabina: “‘A Hotbed of Sins’ or “‘Just like Home’”? Drinking Cultures in Colonial Quingdao (1897-1914)”, in: Ernst, Waltraud (ed): *Alcohol Flows Across Cultures. Drinking Cultures in Transnational and Comparative Perspective*, London: Routledge 2020, pp. 139–158.

³¹⁴ Koloniaal Verslag, Bijlage C, ’s Gravenhage: Algemeene Landsdrukkerij 1890, p. 36.

³¹⁵ For drinking choices and their ties to the performance of gender, class, and race in colonial contexts see Studer, Nina Salouâ: ‘The Same Drink? Wine and Absinthe Consumption and Drinking Cultures Among French and Muslim Groups in Nineteenth Century Algeria’, in: Ernst, Waltraud (ed): *Alcohol Flows Across Cultures. Drinking Cultures in Transnational and Comparative Perspective*, London: Routledge 2020, pp. 20–43.

salami”, “6 tablecloths”, “30 bottles export Pilsen beer”, “1 tin English biscuits”, “1 tin Basler Lekerli”, “3 bottles Odeurs”. “It’s a lovely souvenir”, he adds, “that I’ll be able to gnaw on with pleasure for more than a year.” Guglielminetti particularly stresses his excitement about the wine and liquor from home: “I will report on how the wines and the liquors are doing later, as soon as they are rested and my taste for these good, real things has become somewhat accustomed again.”³¹⁶ At least two aspects about Guglielminetti’s parcel are noteworthy: On the one hand, his order contained typical Swiss products such as the “Basler Leckerli”, a traditional spice biscuit from the city of Basel, or Fendant, white wine produced, among others, in his home Canton Wallis. The consumption of these products in Aceh can thus be regarded as a way to maintain and perform national or regional identity in the far-away tropics. On the other hand, the “conspicuous consumption” of high-quality, low percentage alcohol can here be interpreted not only as a strategy to sustain one’s health in the tropics, but moreover as a marker of class distinction vis-à-vis the uneducated, lower-class soldiers, who excessively consumed lower-quality gin and thereby threatened their physical well-being.³¹⁷

Prostitution

Alcohol was not the only ‘vice’ that ‘tempted’ soldiers in the camps of Aceh. Another cause of great concern in the context of colonial military camps was the high prevalence of sexually transmitted diseases – referred to as “venereal diseases” at the time. Syphilis in particular was believed to threaten the health and morale of the European “race”.³¹⁸ From the perspective of colonial militaries, the spread of the disease implied a practical urgency, as syphilis resulted in disease-related shortfalls among its troops. In the 1880s, every single issue of the Dutch colonial government’s yearly report lists syphilis as one of the major causes of illness among its soldiers.³¹⁹

Medical officers, too, noted the issue of VD and its devastating effects on the army’s health. “Aceh,” Heinrich Erni observes, “is a good ground for venereal diseases, which are spread by the military women [*Soldatenfrauen*] who are allowed to stay in the barracks.”³²⁰ With the term

³¹⁶ Letter from Ernest Guglielminetti to his mother, Rau, 5 May 1888, in: UB NL 175, Aa 1-27, A19.

³¹⁷ On the conspicuous consumption of alcohol in colonial settings see Fischer-Tiné, *Liquid Boundaries*, pp. 93–95.

³¹⁸ Levine, *Prostitution, Race & Politics*, p. 2.

³¹⁹ See Koloniaal Verslag, ’s Gravenhage: Algemeene Landsdrukkerij 1880-1890.

³²⁰ Erni, *Die Behandlung der Verwundeten*, 37.

Soldatenfrauen, Erni here refers to Asian and Indo-European women or so-called *njai*, who served European men as housekeepers and sometimes as substitute wives, and whose presence in the camps was largely tolerated, if not encouraged, by the Dutch colonial government (see chapter 2.3.2).³²¹ Heinrich Breitenstein, on the other hand, regards the *Kasernefrauen* (barrack women), as he described the *njai*, as a “minor source of syphilis”. Rather, he adds:

“Venereal diseases only spread from those European and Malay soldiers who do not keep a ‘housekeeper’ and are not married. The greater part of the troops are in the service of Venus vulgivaga [...]. The priestesses of free love [prostitutes] are recruited from the lowest strata of the Malay, half-European and half-Chinese population and are equally accessible to both nations [...]”³²²

Other than Erni, who primarily blamed the *njai*, Breitenstein located the cause for syphilis in the interaction between Malay, Indo-European, and Chinese prostitutes “from the lowest strata of population” and the Dutch Colonial Army’s soldiers. From the perspective of the European middle-class in the colonies, these sexual interactions threatened not only the soldiers’ health, but above all ideals of bourgeois, European masculine respectability.³²³ At the same time, however, prostitution was regarded as a “necessary evil” that allowed men to “satisfy their natural sexual appetite” by many contemporary observers in the Netherlands and the Dutch East Indies. Consequently, prostitution was legally permitted under the condition that measures were implemented to contain the spread of venereal diseases.³²⁴ Furthermore, the Dutch East Indies government largely restricted the immigration of European women to the Indies up until the early 20th century.³²⁵ This included the complete absence of European prostitutes in the 19th century Dutch East Indies, whose presence within the British Empire deeply threatened the myth of white supremacy.³²⁶ Instead, prostitutes in the Indies mainly stemmed from the poorer segments of the Malay, Javanese, and Chinese communities, whose

³²¹ See Bosma/Raben, *Being ‘Dutch’ in the Indies*; Baay, Reggie: *De Njai. Het Concubinaat in Nederlands-Indië*. Amsterdam: Athenaeum-Polak & Van Genneep 2008; Stoler, *Carnal Knowledge and Imperial Power*; Ming, Hanneke (1983): ‘Barracks-Concubinage in the Indies, 1887-1920’, in: *Indonesia* 35, pp. 65–94.

³²² Breitenstein, Heinrich: ‘Die Circumcision in der Prophylaxe der Syphilis’, in: *Versammlung deutscher Naturforscher und Ärzte in Karlsbad im September 1902*, pp. 478–482, here pp. 480f.

³²³ See Levine, *Prostitution, Race & Politics*, p. 8.

³²⁴ Hesselink, ‘Prostitution. A Necessary Evil’, pp. 206f.

³²⁵ See Stoler, *Carnal Knowledge and Imperial Power*; Gouda, Frances: *Dutch Culture Overseas. Colonial Practice in the Netherlands Indies, 1900-1942*, Amsterdam: Amsterdam University Press 1995.

³²⁶ See Fischer-Tiné, *Low and Licentious Europeans*, pp. 186–226; Jain, Sagaree (2017) ‘The Queen’s Daughters. White Prostitutes, British India and the Contagious Diseases Acts’, in: *Indian Journal of Women and Social Change* 2 (1), pp. 4–10; Kufakuriani, Ushewedu: ‘Empire and Sexual Deviance. Debating White Women’s Prostitution in Early 20th Century Salisbury, Southern Rhodesia’, in: Jackson, W./Manktelow, E.J. (eds): *Subverting Empire*, London: Palgrave Macmillan 2015, pp. 205–225; Levine, Philippa (2002): ‘The White Slave Trade and the British Empire’, in: *Criminal Justice History* 17, pp. 133–146.

alleged sexual promiscuity provided a further justification for the institution of colonial prostitution as a whole.³²⁷

Rather than requiring European men to attend regular medical check-ups, the Dutch colonial government approached the containment of venereal diseases by medically monitoring the bodies of Asian prostitutes. In this, the Dutch Empire followed larger global trends in the control of venereal diseases that mainly targeted women. In 1864, for example, the British government introduced the Contagious Diseases Act that forced prostitutes who had contracted VD into so-called “lock hospitals”. In the course of the cantonment act of the same year, lock hospitals were also introduced in military areas in British India to isolate infected women from European soldiers. Similar Contagious Disease legislations, including the lock hospital system, would be introduced in British-ruled territories in North America, the Caribbean as well as in several ports in East Asia in the following years.³²⁸ While the British Empire took a systematic approach to the control of women’s bodies by establishing separate women’s hospitals, the Dutch colonial government chose to integrate the containment of syphilis among its troops into its existing establishment of biopolitics. In 1853, the Dutch East Indies government introduced *the Reglement tot wering van de schadelijke gevolgen, welke uit de prostitutie voortvloeijen* (Regulation to counteract the damaging results of prostitution), that prompted prostitutes to register with the local police and to undergo examination by a local European physician. In case of a VD infection, the women were then legally obliged to visit a hospital for treatment until they fully recovered. Nevertheless, illegal modes of prostitution continued to escape state

³²⁷ See Hesselink, ‘Prostitution. A Necessary Evil’, pp. 211–213. For the exotification and sexualization of Asian women in the Dutch East Indies more broadly, see Protschky, Susie (2008): ‘Seductive Landscapes. Gender, Race and European Representations of Nature in the Dutch East Indies in the Late Colonial Period’, in: *Gender & History* 20 (2), pp. 372–398; Stoler, Ann Laura: *Race and the Education of Desire. Foucault’s History of Sexuality and the Colonial Order of Things*, Durham: Duke University Press 1995, pp. 155–158.

³²⁸ See Levine, *Prostitution, Race & Politics*, pp. 40–42; Wald, *Vice in the Barracks*; Levine, Philippa (1994): ‘Venereal Disease, Prostitution, and the Politics of Empire. The Case of British India’, in: *Journal of the History of Sexuality* 4 (4), pp. 579–602; Ballhatchet, Kenneth: *Race, Sex and Class under the Raj. Imperial Attitudes and Policies and their Critics, 1793-1905*, London: Weidenfeld and Nicolson 1980; Howell, Philipp: *Geographies of Regulation. Policing Prostitution in Nineteenth-Century Britain and the Empire*, Cambridge: Cambridge University Press 2009; Phillips, Richard: *Sex, Politics and Empire. A Postcolonial Geography*, Manchester: Manchester University Press 2006. For the control of venereal diseases in the German Colonial Empire see Walther, Daniel Joseph: *Sex and Control. Venereal Disease, Colonial Physicians, and Indigenous Agency in German Colonialism, 1884-1914*, New York: Berghahn 2015. For French Indochina see Tracol-Huynh, Isabelle (2009): ‘La Prostitution au Tonkin Colonial, entre Races et Genres’, in: *Genre, Sexualité & Société* 2, online, DOI: <https://doi.org/10.4000/gss.1219>; for colonialism in Africa see Vaughan, Megan: *Curing their Ills. Colonial Power and African Illness*, Cambridge: Polity Press 1991, pp. 129–154; Van Heyningen, Elizabeth (1984): ‘The Social Evil in the Cape Colony 1868-1902. Prostitution and the Contagious Diseases Act’, in: *Journal of Southern African Studies* 10 (2), pp. 170–197; Pande, Amrita (2020): ‘De(coding) “Loose Women” in Colonial Archives’, in: *Journal of Contemporary African Studies*, online, DOI: <https://doi.org/10.1080/02589001.2020.1761012>. For a more general overview see Kozma, Liat: ‘Prostitution and Colonial Relations’, in: Rodríguez García, Magaly/Heerma van Voss, Lex/Van Nederveen Meerkerk, Elise (eds): *Selling Sex in the City. A Global History of Prostitution, 1600s-2000s*, Leiden: Brill 2017, pp. 730–747.

control, and the spread of VD was not effectively contained.³²⁹ In October 1883, “the regional and local heads of government were invited [...] to enforce the regional and local laws against the detrimental effects of prostitution with the utmost severity [...]” In March of the same year, the Dutch East Indies Government “also expressed the desire that the medical examination of prostitutes and the treatment of the sick among them should only be left to Dokter Djawa in exceptional cases. This should, as far as possible, be the task of the local European doctors.”³³⁰ The containment of syphilis, as it seems, was such a great concern to the Dutch that Dokter Djawa – Javanese physicians trained in European medicine, whose expertise was strongly doubted by their European colleagues – could not be trusted with the task of controlling VD.³³¹ It is in this context that the Dutch colonial government’s decree on the regulation of prostitution explicitly states that “in the absence of another opportunity on the spot, the sick prostitutes – on condition that they are properly separated – can be admitted for treatment to the military hospitals, and if these do not exist or do not offer room, to the local prisons.”³³² Medical officers were thus also responsible for monitoring prostitutes with the aim of containing VD. Heinrich Breitenstein, for example, remembers several instances in which he examined patients for VD. In his testimonies, he strongly criticizes the colonial government’s approach of focusing on women only. Rather, he argues, “syphilis follows the Europeans as they penetrate into the interior, where it is not at home [endemic].” In his view, European soldiers with their promiscuous sexuality were to blame for the spread of the disease.³³³ Breitenstein here regards the problem of prostitution, just like the alcohol issue, primarily as a matter of class rather than race or gender, and thereby argues against the Dutch Colonial government’s official (racialized) approach of tackling the spread of VD. Being a ‘foreigner’ publishing his memoirs with a Leipzig-based publishing house, Breitenstein seemed to have been in a relatively comfortable position to criticize the official policies implemented by the Dutch colonial government.³³⁴ Even though Breitenstein did take up the Dutch citizenship in 1895,³³⁵ most likely in order to become promoted to first class medical officer, he kept close ties to the Habsburg Empire after

³²⁹ See Hesselink, ‘Prostitution. A Necessary Evil’, p. 206.

³³⁰ *Koloniaal Verslag*, Bijlage C, ’s Gravenhage: Algemeene Landsdrukkerij 1884, p. 105.

³³¹ For the Dutch colonial government’s medical training programmes directed at Javanese elites, the so-called STOVIA, see Hesselink, Liesbeth: *Healers on the Colonial Market. Native Doctors and Midwives in the Dutch East Indies*, Leiden: KITLV Press, 2011, pp. 163–224.

³³² *Koloniaal Verslag*, Bijlage C, ’s Gravenhage: Algemeene Landsdrukkerij 1884, p. 105.

³³³ Breitenstein, Heinrich (1884): ‘Die Syphilis in Indien’, in: *Wiener Medizinische Presse* 25, 1435–1437.

³³⁴ Breitenstein did take up the Dutch citizenship in 1895, probably in order to become promoted to first class medical officer and passed away in Den Haag in 1930. He did however keep close ties to the Habsburg Empire even after moving to Netherlands. His at times critical tone towards the Dutch Colonial Government repeatedly caused suspicion in the Dutch press (see chapter 1).

³³⁵ See ‘Naturalisatie van Heinrich Breitenstein’, in: *Staatsblad van het Koninkrijk der Nederlanden* 115, 13 July 1895.

returning to Europe (see chapter 3.4). The more critical passages in his published memoirs were repeatedly downplayed in Dutch reviews of his book, accusing him of misunderstanding the “true” conditions in the Dutch East Indies.³³⁶

Notwithstanding the various vicious temptations surrounding the military camps, in none of the available sources – neither published nor private – do the medical officers admit to themselves engaging in ‘immoral’ sexual practices or excessive drinking – whether this corresponds to the truth must remain an open question. What can be stated with certainty is that, at least in their self-fashioning, they observed the licentious behavior of the lower-class European soldiers, excessively drinking and engaging with prostitutes from the “lower strata of [native] society”, from a rational, scientific, and morally superior distance. They thereby discursively distinguished themselves from lower-class, Europeans and practically performed their bourgeois respectability by consuming ‘high quality alcohol’ and allegedly refraining from ‘immoral’ sexual encounters.³³⁷

³³⁶ See reviews in *Algemeen Handelsblad*, 14 December 1902; *De Sumatra Post*, 21 December 1899.

³³⁷ On the construction of bourgeois, European respectability in the Dutch East Indies see Stoler, *Carnal Knowledge and Imperial Power*. For the construction of bourgeois masculinities vis-à-vis “brutish” lower-class soldiers see Murphy, Sharon: ‘Making (Protestant) Men. *Alfred and Galba* and the East India Company Soldiers’, in: Ellis/Meyer (eds), *Masculinity and the Other*, pp. 219–235; Banister, Julia: *Masculinity, Militarism and Eighteenth-Century Culture, 1689-1815*, Cambridge: Cambridge University Press 2020.

2.3 Race: Fragile Boundaries

The Dutch East Indies' government exhibited a comparatively large tolerance for interracial relationships and ethnic diversity. The historians Remco Raben and Ulbe Bosma even go as far as to refer to the Dutch colony as a "Creole Empire", highlighting the broad acceptance of ethnically diverse and mixed backgrounds among the Indies' population.³³⁸ This, of course, did not mean there was no racial segregation in place. The Dutch East Indies legal system divided its populations into three categories: *Europeanen* ("Europeans"), *Inlanders* ("natives"), and *Vreemde Oosterlingen* ("Foreign Orientals", mainly of Chinese or Arabic descent). Individuals of mixed European and indigenous descent could however potentially obtain the legal status of a European, provided that they were legally acknowledged by their European father. These so-called Indo-Europeans played a crucial role in the Dutch colony's economy, industry, and (local) governance.³³⁹ Other than in the British Empire, the category of 'Europeanness' thus was more formative in terms of legal leeway and social status than national belonging or 'whiteness'.³⁴⁰ The military camps in the Dutch East Indies, too, reflected high degrees of ethnic diversity. On the one hand, a majority of the KNIL's soldiers hailed from the indigenous populations of the Dutch overseas colonies. Its combatant troops comprised mainly of Ambonese, African, and Javanese soldiers serving in the lower ranks, who were housed together with their European colleagues.³⁴¹ On the other hand, as has been alluded to above, the Dutch largely tolerated the presence of so-called *njai*, Asian and Indo-European women who lived with European soldiers, serving them as housekeepers and as 'substitute wives'. While marriage was subjected to strict legal regulations – European soldiers needed to ask for permission from their superiors, which was only granted in exceptional cases – the system of barrack

³³⁸ See Bosma/Raben, *Being 'Dutch' in the Indies*.

³³⁹ See Luttikhuis, Bart (2013): 'Beyond Race. Constructions of "Europeanness" in Late-colonial Legal Practice in the Dutch East Indies', in: *European Review of History* 20 (4), pp. 539–558; Luttikhuis, Bart: *Negotiating Modernity. Europeanness in late Colonial Indonesia, 1910-1942*, PhD thesis, European University Institute, Florence 2014; Coppel, Charles: 'The Indonesian Chinese: "Foreign Orientals", Netherlands Subjects, and Indonesian Citizens', in: Hooker, M. (ed): *Law and the Chinese in Southeast Asia*, Pasir Panjang Singapore: ISEAS Institute of Southeast Asian Studies 2002, pp. 131–149; Claver, Alexander: 'From Denial to Opportunity: Chinese Access to Colonial Law in the Netherlands Indies (1800-1942)', in: Dauchy, Serge et al. (eds): *Colonial Adventures. Commercial Law and Practice in the Making*, Leiden: Brill 2020, pp. 221–244. For a general overview of the Dutch East Indies' legal history see Dekker, Albert/Van Katwiltjk, Hanneke: *Recht en Rechtspraak in Nederlands-Indië*, Leiden: KITLV 1993.

³⁴⁰ For the legal, racial division in the British Empire see Kolsky, Elizabeth: *Colonial Justice in British India*, Cambridge: Cambridge University Press 2010. For the category of "Eurasians" in British India see Fischer-Tiné, *Low and Licentious Europeans*, pp. 58–74. For anxieties surrounding inter-ethnic sexual encounters in the British Empire see Levine, Philippa: 'Sexuality, Gender and Empire', in: idem, *Gender and Empire*, pp. 134–155.

³⁴¹ See Ming, 'Barracks-Concubinage in the Indies', pp. 66f.

concubinage was largely tolerated without any major legal or moral restrictions.³⁴² Only in the late colonial period in the 20th century, the practice of barrack concubinage came under increased public scrutiny.³⁴³

This last section will discuss the ways in which medical officers from Germanophone Europe perceived these different ‘others’ they encountered during their service in Aceh, how they discursively attempted to uphold racialized and gendered boundaries integral to colonial rule, and to what extent these boundaries turned permeable when investigated more closely through more intimate testimonies.

‘Martial Races’ & Amok

The Dutch practice of recruiting non-European soldiers for service in their colonial armies can be dated back to the 1620s, when the VOC recruited Japanese and Chinese soldiers, freed enslaved people as well as Pampangas from the Philippines.³⁴⁴ The recruitment patterns of the VOC mainly followed the availability of military workforce. Throughout the 19th century, and after the Dutch overseas Empire was handed over to the Dutch Crown, the Dutch increasingly displayed a preference for soldiers from certain ethnic groups. In the aftermath of the Java War (1825-1830), Dutch distrust towards the Javanese population – who constituted the largest ethnic group within the Empire’s Southeast Asian territories – resulted in a “recruitments crisis” as the KNIL’s ranks could not be filled with European soldiers alone. Consequently, in 1831, the Dutch opened a recruitment station on the West African Gold Coast.³⁴⁵ By recruiting or abducting African soldiers – the so-called *Belanda Hitam* (“Black Dutch”) – for their colonial army, the Dutch followed the example set by the British West India regiments, whereas, after the British abolition of the transatlantic slave trade in 1807, the British recruited liberated enslaved people from Sierra Leone for their colonial army. Even though *Belanda Hitam* were numerically less significant than the Javanese within the KNIL, their efforts were positively

³⁴² See Ming, ‘Barracks-Concubinage in the Indies’; Groen, Petra: “‘Zedelijkheid en martialiteit’. Het Kazerneconcubinaat in Nederlands-Indië rond 1890’, in: Bloembergen, Marieke/Raben, Remco (eds): *Het Koloniale Beschavingsoffensief. Wegen naar het Nieuwe Indië, 1890–1950*, Leiden: KITLV Uitgeverij 2009, pp. 25–51; Baay, *De Njai*.

³⁴³ See Stoler, Ann Laura (1992): ‘Sexual Affronts and Racial Frontiers. European Identities and the Cultural Politics of Exclusions in Colonial Southeast Asia’, in: *Comparative Studies in Society and History*, 34 (3), pp. 514–551.

³⁴⁴ De Moor, Jaap: ‘The Recruitment of Indonesian Soldiers for the Dutch Colonial Army, c. 1700-1950’, in: Killingray/Omissi (eds), *Guardians of Empire*, pp. 53–69, here p. 54.

³⁴⁵ See *ibid.*, p. 57.

noted by Dutch observers at the time. They were granted a European legal status but were nevertheless subordinated under the European soldiers in the colonial social order, receiving the same pay but poorer equipment.³⁴⁶ The same conditions applied to the so-called “Ambonese” soldiers who were, alongside the *Belanda Hitam*, considered to be brave and loyal fighters. It is important to note here that the category “Ambonese” itself was “in fact wholly artificial” as it “included not only men from Ambon, but also men from the Kei Islands, Manadonese”.³⁴⁷ Due to their alleged bravery and stamina, they were among the most popular Southeast Asian recruits; in the Aceh War, their numbers rose to 4’249 men (12%) in 1904, as opposed to roughly 3’000 West Africans.³⁴⁸

In actively recruiting ethnic groups that were considered to be particularly “warlike”, the Dutch followed transimperial discourses surrounding so-called “martial races”. In the aftermath of the Indian mutiny of 1857-59, and with the aid of eugenicists and “race scientists”, the British colonial government, for example, claimed to have identified South Asian “races”, who had not only remained loyal to the Crown during the mutiny, but who possessed (inherited) physical and mental qualities that deemed them particularly fit for military service: Gurkhas, Sikhs, Marathas, and Rajputs.³⁴⁹ Even though according to the historian Jaap de Moor, the “British colonial discourse of the ‘martial races’, with their inherited attributes, never existed in Dutch Indonesia” and the “Ambonese [...] were not praised primarily for their inherited military skills, but rather for their loyalty to the Dutch, their devotion to the House of Orange and their attachment to the Christian faith”³⁵⁰, the accounts of Germanophone medical officers reflect a certain sense of awe for their “Ambonese” patients’ bravery and stamina. Heinrich Breitenstein, for example, remembers how “[o]n 23 October 1893 an Ambonese soldier – from the Moluccas – came to my treatment who, incredible as it may seem, had served as a soldier up to that day, although he had a large tumor in his abdominal cavity.”³⁵¹ The Catholic Ernest Guglielminetti furthermore expressed his deepest admiration of the Ambonese’s integrity, in particular their staunch adherence to the Catholic faith.³⁵²

³⁴⁶ See Van Kessel, Ineke (2009): “‘Courageous but Insolent’”. African Soldiers in the Dutch East Indies as seen by Dutch Officials and Indonesian Neighbours’, in: *Ocean of Stories. Communication & Contested Identities across the Indian Ocean 4 (2)*, pp. 51–84, here pp. 61–75; Krauer, *Colonial Mercenaries*, pp. 70f.

³⁴⁷ De Moor, ‘The Recruitment of Indonesian Soldiers’, pp. 62–64. Quote from p. 64.

³⁴⁸ See Van Kessel, ‘African Soldiers in the Dutch East Indies’, p. 56; Krauer, *Colonial Mercenaries*, pp. 70f.

³⁴⁹ See Barua, Pradeep (1995): ‘Inventing Race. The British and India’s Martial Races’, in: *The Historian 58 (1)*, pp. 107–116, here pp. 108–111; Streets-Salter, Heather: *Martial Races. The Military, Race, and Masculinity in British Imperial Culture, 1857-1914*, Manchester: Manchester University Press 2011; Omissi, David: *The Sepoy and the Raj. The Indian Army, 1860-1940*, Basingstoke: Palgrave Macmillan 1998; Killingray, David: ‘Guardians of Empire’, in: idem/Omissi, *Guardians of Empire*, pp. 1–24, here pp. 14–16.

³⁵⁰ The Moor, ‘The Recruitment of Indonesian Soldiers’, p. 59.

³⁵¹ Breitenstein, *Sumatra*, p. 97.

³⁵² See letter from Ernest Guglielminetti to his mother, Hospital Padang, undated, in: UB NL 175, Aa 1-27, A13.

The Javanese soldiers, despite their numerical significance within the army, ranked on the bottom of the racial hierarchy among the colonial troops. Not only did they receive the lowest pay, quality of food, and equipment. They were also frequently belittled in their professional roles as soldiers.³⁵³ Other than the “Ambonese” and West African soldiers, they were completely denied ideals of military masculinity such as bravery, strength, or stamina. The discursive emasculation of the Javanese soldiers is reflected in the memoirs by Czech officer Durdik. While being full of admiration for the Acehnese resistance fighters (see chapter 2.1.2), he describes the Javanese as:

“a good, docile, considerate people, extraordinarily respectful of their people and of the elderly, remarkably modest, sincere and simple in their behavior. The Javanese would deserve a better fate if justice prevailed in the world, if in the world everyone was judged by his actions. The Javanese are like good children, not yet spoiled by their parents and they remain so all their lives. That is why they are oppressed by their monks and the Dutch and largely robbed by the Chinese. They are the exact replica of Leon Tolstoi’s characters: they do not oppose evil, do not like evil and do not defend themselves against evil. Because of their goodness and simple spirit, they do not even belong to the present world order, where the law of ‘woe to the good’, i.e., to the weak, to the defenseless and to those who do not defend themselves, is verified at every moment.”³⁵⁴

Unlike the Acehnese, whom he considers to be brave and persistent fighters, he describes the Javanese as kind and respectful, but with that child-like, defenseless and in a sense if not effeminate, then definitely not masculine. It is to him due to their docile nature that they are ruled by the Dutch, which is why, as he would add, the Czech nationalists should not take them as role models but rather follow the example set by the Acehnese in fighting for their nation state.³⁵⁵

A further important stereotype with regard to Asian men was closely enmeshed with transimperial discourses surrounding amok. Derived from the Malay *amuk*, roughly translating to rampage or anger, Europeans observed several instances of allegedly violent outbursts committed by ethnic Malay men in British Malaya or the Dutch East Indies that they described as acts of amok in contemporary sources. These European discursive constructions on uncontrolled acts of violence were inherently gendered as only men were believed to have the capacity to run amok.³⁵⁶ In the early twentieth century, the trope of Malay men being

³⁵³ See De Moor, ‘The Recruitment of Indonesian Soldiers’, p. 61.

³⁵⁴ Durdik, *Un Médecin Militaire à Sumatra*, pp. 46f.

³⁵⁵ See *ibid.*

³⁵⁶ See Wu, Jialin Christina: ‘Disciplining Native Masculinities. Colonial Violence in Malaya, “Land of the Pirate and the Amok”’, in: Dwyer, Philipp/Nettelbeck, Amanda (eds): *Violence, Colonialism and Empire in the Modern World*, Cham: Springer 2018, pp. 175–196; Saha, Jonathan (2013): ‘Madness and the Making of a Colonial Order in Burma’, in: *Modern Asian Studies* 47 (2), pp. 406–435; Bolton, Sony Coráñez: *Crip Colony. Mestizaje, US*

predisposed to amok were increasingly psychologized and used as a legitimization strategy to justify European rule in Southeast Asia.³⁵⁷ Medical officers, too, tried to make sense of their Malay patients falling into frenzy. Heinrich Breitenstein, for instance, remembers “a case of amok” taking place just one hour from the fort in Aceh he was stationed in. “The furious man had wounded four people before it was possible to render him harmless; an Acehnese and a Chinese were killed; a second native received five wounds and the fourth victim only a stab in the left forearm.” Breitenstein continues by describing how he heroically attempted to save the wounded men and asked the bystanders what had happened to the rampant “native” before running amok. After careful consideration of all factors, Breitenstein concludes that:

“this case disputes all previous theories that have been put forward about the Malay custom of running amok. This man did not smoke opium, he was not seized by any religious madness, he did not want to take his own life in this unusual way in order to partake of the joys of heaven despite the prohibition of suicide; he was a sick man who was delirious in a fever.”³⁵⁸

What is interesting about Breitenstein’s analysis is that not only does he follow the widespread stereotype of amok being conducted by male members of the Malay ‘race’. He further medicalizes such racialized notions of ‘amok’ by describing the phenomenon as a reaction to high fever. In other words, other than Ambonese patients, whom European medical officers remember as particularly resilient to pain and hardships, the naturally ‘effeminate’ Malay allegedly were so unfit to deal with illness that the pain resulted in irrational behavior such as rampages tied to their race through the diagnosis ‘amok’. Racial hierarchies were an integral part of the everyday lives in the multi-ethnically composed military camps in Aceh with certain ‘races’ granted access to hegemonic, European ideals of military masculinity and others being infantilized and effeminized. This also influenced the ways in which foreign medical officers perceived and diagnosed their patients: they largely followed established colonial stereotypes on the supposedly ‘brave’ and ‘martial’ Ambonese, ‘child-like’ and ‘effeminate’ Javanese, and ‘irrational’, ‘amok-running’ Malays.

Imperialism, and the Queer Politics of Disability in the Philippines, Durham: Duke University Press 2023, pp. 131–161; Tay, Eddie: *Colony, Nation, and Globalisation. Not at Home in Singaporean and Malaysian Literature*, Hong Kong: Hong Kong University Press 2011, pp. 15–30.

³⁵⁷ See Pols, Hans (2007): ‘Psychological Knowledge in a Colonial Context. Theories on the Nature of the “Native Mind” in the Former Dutch East Indies, in: *History of Psychology* 10 (2), pp. 111–131.

³⁵⁸ Breitenstein, *Sumatra*, pp. 95f.

Dukun & Njai

While being rather critical of the effects local prostitutes would have on the moral and health of European soldiers, European medical officers were not equally dismissive of the indigenous housekeepers – or *njai*. The Dutch Colonial Army largely approved of the presence of *njai* in its military camps, as these indigenous women allegedly kept the troops' morale up, took care of the European soldiers' domestic work, and often served them as sexual and romantic companions. In case their European father legally acknowledged them as his own, children resulting from such relationships would receive the legal status of a 'full' European. Many of the (unacknowledged) Indo-European daughters resulting from barrack concubinage would themselves become *njai*, other concubines were mostly of Malay, Javanese, or Chinese descent. It is further important to mention that these relationships were not entered on equal terms. Sexual encounters between *njai* and their European 'employers' were highly asymmetrical and subjected to severe power imbalances in the racialized colonial social order. Europeans could decide to leave or fire 'their' housekeeper at any time without facing any consequences. Only in rare instances did European soldiers eventually even marry 'their' *njai*. In the military camps, marriage was however subjected to strict legal limitations: soldiers were to ask permission from their superiors.³⁵⁹

The Swiss medical officer Heinrich Erni, who resided a 'mere' 7 years in the Dutch East Indies, showed strong resentments concerning sexual relations between indigenous women and European men in general, despite the high degree of tolerance displayed in official, colonial policies.³⁶⁰ Heinrich Breitenstein, on the other hand, who served in the Indies for 21 years and seemed more accustomed to the social norms among colonial society, cautiously highlights the benefits of such arrangements in his published memoirs:

"In the years of guerrilla warfare, his housekeeper is a truly faithful and careful nurse. Weary from the heavy patrol duty through the swampy rice fields, he finds a bowl of tea, coffee and soup on his return and can devote himself to rest while his 'wife' cleans his clothes and weapons. He would not be able to 'be deployed' from time to time if it were not for the fact that his housekeeper leaves him the scarcely allotted time to rest and takes care of his bodily needs. If he is ill or wounded, she takes care of him. Last but not least: Any control of venereal diseases is necessary and possible."³⁶¹

In other words, in Breitenstein's view the presence of a *njai* not only made soldiers' lives more comfortable, but also facilitated the containment of venereal diseases, given that, as he

³⁵⁹ See Ming, 'Barracks-Concubinage in the Indies'; Groen, 'Zedelijkheid en martialiteit'; Baay, *De Njai*.

³⁶⁰ See Erni, *Die Behandlung der Verwundeten*, p. 37.

³⁶¹ Breitenstein, *Borneo*, p. 215.

would add, even unmarried *njai* could be easily and regularly monitored for their sexual health. Breitenstein even goes beyond pure medical reasons when urging the colonial government to endorse its soldiers to get married, adding that a “‘soldatesca’ [‘untamed soldier’] did not fit into the framework of colonial policy and even less into modern state life. The professional soldier in the colonies represents the preserving, protecting part of European civilization.”³⁶² To Breitenstein, marriage was one of the key foundations of the “European civilization” described and a powerful tool in upholding European men’s respectability in the colonies. The multiple roles of *njai* as housekeepers, sexual servants, and quasi-wives as well as their endorsement by European medical professionals such as Breitenstein also point to the close links between social and sexual hygiene towards the late nineteenth century. As has been observed by John Tosh, one of the main functions of the legal structure of marriage was to domesticate the sexuality of European men, in particular if they were lower-class.³⁶³ However in the eyes of the colonial government, financial concerns outweighed such medical considerations: Married *njai* potentially created additional costs such as widow’s pensions. Consequently, permissions were only granted to non-commissioned officers or soldiers who could prove their financial stability.³⁶⁴

Even though it would have fallen within the framework of the social and legal norms in the Indies, the medical officer Breitenstein made it very clear that he would never enter any kind of romantic relationship with a *njai*. His memoirs are fraught with derogatory comments on the women he employed as housekeepers. Alluding to the “superstitious nature” of his *njai* in Aceh, he wrote:

“I rarely came to the kitchen; this was the domain of my housekeeper, who was a Christian from the island of Ambon. Only for a short time was I able to keep this native woman in my service because, despite her Christian faith, she was not a whit better than all her Mohammedan colleagues.”³⁶⁵

Rather than getting romantically involved with an indigenous woman, in 1886 Breitenstein tied the knot with a Dutch woman called Margarethe van Leenhoff whom he had met during a leave in the Netherlands and who would accompany him to Aceh.³⁶⁶ Despite living in ‘remote’, tropical Sumatra, the couple seemed eager to perform a bourgeois lifestyle to the best of their abilities. He admires, for example, how his “small but energetic wife succeeded in turning this

³⁶² Breitenstein, *Sumatra*, 121. On marriage as a ‘civilized’ alternative to prostitution also see Levine, *Prostitution, Race & Politics*, pp. 269f.

³⁶³ See Tosh, ‘Masculinities in an Industrializing Society’.

³⁶⁴ See Ming, ‘Barracks-Concubinage in the Indies’, pp. 69–71.

³⁶⁵ Breitenstein, *Sumatra*, 7.

³⁶⁶ ‘Ondertrouwd: H. Breitenstein en E. Margarethe van Leenhoff’, in: *Java-Bode*, 12 June 1886.

‘stable’ [where they lived in Aceh] into a sweet home [...].”³⁶⁷ Furthermore, he remembers how he and his wife – despite the ongoing war – attended countless receptions held for officers in the Dutch Colonial Army, and even a performance of the operetta “Grande Duchesse”.³⁶⁸

If we move away from the published documents such as Breitenstein’s memoirs and zoom in on more personal testimonies, in particular the letters medical officers sent to their families at home, their views on and encounters with *njai* appear more ambivalent. In a letter to his mother, Ernest Guglielminetti complains about the lack of Europeans in the remote military camp in Rau while noting the high presence of Indo-European women. “The girls of this mixture”, he commented, “have something Italian about them, which is why they sometimes look very nice. They are often bought by the bored European civil servants, who are stationed for years in such dull posts. These so-called housekeepers are sold by their mother for little money (60 to 70 frs [Swiss francs] circa what costs more must be an extra fine girl) and then dressed and fed [by their owner]. The housekeepers also have the right to half a bed and a piece of love from their owner.” On the one hand, Guglielminetti hereby points to the slave-like conditions under which the *njai* were employed. On the other hand, his letter is fueled with sexist comments on Indo-European housekeepers, whom he regards to be clingy and trick ‘their’ employer into having children or even get married for the sole purpose of her personal benefit and a sense of social upward mobility.³⁶⁹ He furthermore expresses little sympathy for the practice when writing:

“Whether it is that a European woman would hardly be able to live in this unhealthy climate or the strenuous journeys required, or whether the Dutch have become used to it throughout the centuries – I don’t know, but the fact is that even [...] among the best and most distinguished families such marriages are judged most gently [...] and they make no secret of it even in larger places.”³⁷⁰

The fact that Guglielminetti appears to be particularly outraged about such forms of miscegenation among even “the most distinguished families” again points to the class-dimension inherent to medical officers’ judgement of barrack concubinage. While they considered relationships between lower-class European men and *njai* more or less appropriate to keep up the troops’ morale and health, middle-class men rather had to refrain from sexual encounters with indigenous women as they would thereby overstep racial and class boundaries. At the same time, however, Guglielminetti’s shattering judgement of inter-ethnic relationships

³⁶⁷ Breitenstein, *Sumatra*, p. 119.

³⁶⁸ *Ibid.*, p. 130.

³⁶⁹ For the negative portrayal of Indo-European children in the Dutch East Indies see Boudewijn, Petra: “‘You Must Have Inherited This Trait from Your Eurasian Mother’”. The Representation of Mixed-race Characters in Dutch Colonial Literature’, in: *Dutch Crossing. Journal of Low Countries Studies* 40 (3), pp. 239–260.

³⁷⁰ Letter from Ernest Guglielminetti to his mother, Rau, undated [1888], UB NL 175 Aa 1-27, A20.

can also be read as a case of national (and cultural) misunderstanding. Among Dutch families living in the Indies, concubinage was an integral part of a respectable, bourgeois life in the Indies and became stigmatized only in the early 20th century with the immigration of a growing number of European women to the colony.³⁷¹ Regardless of his condemnation of the practice of concubinage, Guglielminetti does find a number for excuses as to why even higher-ranking military men, despite their class-consciousness, would be tempted to enter into such ‘immoral’ arrangements:

“So you see, dear mother, that external circumstances – the impossibility of obtaining European women, the necessity of placing at the head of many servants a housewife who knows how to talk to people well and how to buy cheapest – almost force one to look for a foreign woman [. ...] if he has to live for a long time in a small nest; who can blame him if, in order not to be robbed by his housekeeper and to gain her trust, he treats her as well as possible, even takes her to bed with him! If the government sends an officer [...] in his prime to such a lost post, will the good Lord hold it against him if he, in perhaps immoral ways, gets hold of that little bit of sexual pleasure [plaisir] that nature allows the poorest scoundrel in the city and every dog in the street? Thank God, I do not yet find myself in this terrible dilemma, in this difficult struggle between nature and duty, because I often travel to larger places [...] and can marry [one of the many] European women if I have the need.”³⁷²

Rather than holding officers accountable for what he considered ‘immoral’ behavior, Guglielminetti puts the blame on the Dutch colonial government that in his eyes does not take into account the “nature” of men who, in the face of the remoteness of the posts, had no choice but to satisfy their sexual needs in what he regards as ‘immoral’ sexual encounters – and thereby pre-emptively excuses himself, should he ever enter into such a relationship. Furthermore, Guglielminetti links bourgeois, European respectability to environmental factors when considering the stay in remote nature with a simultaneous high presence of racialized ‘others’ as a catalyst of immoral behavior. Despite his performative outrage about interracial relationships, in a letter to his siblings he does not refrain from pointing to the beauty of the Asian and Indo-European women he met in the Dutch East Indies. He wrote that “[s]ome of the ladies of the choral society are not bad either – ask Guillaume whether I should bring all the women back with me, or just some, he should have them selected in Brig, most of them are easy to have, some of them of good race.”³⁷³

Indeed, in some rare instances, ‘medical mercenaries’, too, cultivated sexual relations with a *njai* and thereby overstepped the racialized, ideological boundaries of bourgeois respectability they claimed to embody. One example for this is the Prussian Friedrich Wilhelm Stammeshaus who had entered a relationship with a Chinese *njai*, whose name is unfortunately not transmitted

³⁷¹ See Gouda, *Dutch Culture Overseas*, pp. 112–117

³⁷² Letter from Ernest Guglielminetti to his mother, Rau, undated [1888], UB NL 175 Aa 1-27, A20.

³⁷³ Letter of Ernest Guglielminetti to his sister Mathilde, Paloe, 13 December 18??, UB NL 175 As 56-57, A57.

in his personal testimonies. In 1881, she gave birth to a son, whom Stammeshaus recognized as his own, naming him Friedrich Wilhelm, after himself. The acceptance by his father granted Stammeshaus Jr. the legal status as European. Following his father's footsteps, he would serve in the Aceh War in 1904. 5 years later, he joined the colonial government's domestic administration where he was promoted to *controleur* of Aceh after the region's 'pacification'. Due to his Indo-European heritage and fluency in several local languages, Stammeshaus Jr. was allegedly highly popular among both the European as well as the Acehnese population in northwestern Sumatra. Besides, he built the largest ethnographic collection from Aceh, which is today located in the Tropenmuseum in Amsterdam.³⁷⁴ Stammeshaus senior, however, never wed the Chinese mother of his son. Instead, in 1886, he married the Dutch Gretchen Ruysenaers. In a letter to his father, he enthusiastically reported the joyful announcement:

"As you will have seen from further mailings, my wedding with Gretchen Ruysenaers took place on 5 May in Lahat, in the house of Captain Platt. The marriage was performed by the civil registrar, Assistant Resident Larive, who also later consoled the parents of the bride and groom at the banquet. It was a pity that, apart from Gretchen's brother, none of our mutual relatives could be present at the wedding. On 3 June I left Lahat with Gretchen and *little Wilhelm*."³⁷⁵

As a matter of course, Stammeshaus mentions, in addition to his marriage, that was entirely in keeping with the bourgeois family ideal, his son from what from a Prussian perspective was an 'immoral' relationship with an ethnically Chinese woman, yet completely in line with the social norms in the Dutch East Indies. What his parents thought about this arrangement is not known. Nevertheless, Stammeshaus' openly communicated sexual engagement with an Asian woman points to the fragile nature of the racialized boundaries in the colonies, set in the name of upholding bourgeois European notions of respectable, middle-class masculinity as they would be propagated in the travelogues written by Breitenstein et al.

Lastly, there was a second group of indigenous women, who represented a major concern to the likes of Erni and Breitenstein: indigenous medical experts, and, in particular, the so-called *dukun*, traditional healers who were prevalent all across the Malay Archipelago. Their presence and popularity became a particular issue in the eyes of European medical experts, as "expertise about the medicinal properties of nature's herbs and roots, whether real or imagined, was a fund of feminine knowledge and thus a source of Indies women's superior power and ability to cope

³⁷⁴ The fascinating story of F.W. Stammeshaus Jr. has been uncovered by the Dutch historian John Klein Nagelvoort. See Nagelvoort, John Klein: *Toean Stammeshaus. Leven en Werken in Koloniaal Atjeh*, Volendam: LM Publishers 2019

³⁷⁵ Letter from Friedrich Wilhelm Stammeshaus to his father, 22 August 1886, private collection. Emphasis by the author.

with their natural environment.”³⁷⁶ Across the colonized world, indigenous medical traditions were transmitted by as well as linked to femininity and woman in a similar vein as folk medicine in Europe.³⁷⁷ In the logic of late 19th century European professionalization of scientific expertise, whereas the responsibility for institutionalized health care in the European colonies was largely placed in the hands of university-educated physicians, a vast majority of them being middle-class and male, feminized medical traditions certainly caused irritation.³⁷⁸ This issue was even more striking in the context of medical care in military camps in the colonies, where European medical men held a monopoly on the treatment of injured and disease-inflicted soldiers. In their official testimonies, European medical officers do not show much conviction of local healing traditions and experts. Heinrich Erni, for example, claims to have learned little about indigenous medicine during his stay in Aceh, “because we were enemies to them [the local populations].”³⁷⁹ He does remember one instance in which he encountered a “native” who “sold medications at the local markets.” He then however adds that the locals “had already realized that the European fever remedy, quinine, was better than their doctor's and often came to fetch quinine pills.”³⁸⁰ While this might hold true for quinine, Erni’s statement certainly does not correspond with the realities of medical preferences in the late nineteenth century Indies. First, the chronic lack of European medical professionals in the Dutch East Indies, in particular in the civil sector, meant that a majority of health care was provided by local medical experts. Second, many of Erni’s and Breitenstein’s patients – both European and indigenous – were highly intrigued by the medical alternatives offered by indigenous herbal medicine.³⁸¹ In fact, indigenous patients were greatly suspicious of European physicians. “The natives in the village”, Guglielminetti would write, “do not quite trust the European doctors, they fear, that we will poison them [...]” Rather, many indigenous patients would prefer to treat their illness with a local *dukun* instead.³⁸² The popularity of the *dukun* seemed to have been particularly

³⁷⁶ Gouda, Frances (1993): ‘Nyonyas on the Colonial Divide: White Women in the Dutch East Indies, 1900–1942’, in: *Gender & History* 5 (3), pp. 318–342, here p. 335; Pols, Hans (2009): ‘European Physicians and Botanists, Indigenous Herbal Medicine in the Dutch East Indies, and Colonial Networks of Mediation’, in: *East Asian Science, Technology and Society* 3 (2/3), pp. 173–208.

³⁷⁷ See, for example, Mukharjee, *Gender, Medicine, and Society*; Yakushko, Oksana (2018): ‘Witches, Charlatans, and Old Wives. Critical Perspectives on History of Women’s Indigenous Knowledge’, in: *Women & Therapy* 41 (1/2), pp. 18–29.

³⁷⁸ On the ways that gender ‘informed the cultures of medicine itself’, see Brown, Michael (2010): “‘Like a Devoted Army’”. Medicine, Heroic Masculinity, and the Military Paradigm in Victorian Britain’, in: *Journal of British Studies* 49 (3), pp. 592–622.

³⁷⁹ Erni, *Die Behandlung der Verwundeten*, p. 72.

³⁸⁰ *Ibid.*, p. 74.

³⁸¹ See Hesselink, *Healers on the Colonial Market*. Many physicians would become key figures in anticolonial and nationalist struggles, see Mukharji, *Nationalizing the Body*; Pols, Hans: *Nurturing Indonesia. Medicine and Decolonisation in the Dutch East Indies*, Cambridge: Cambridge University Press 2018.

³⁸² Letter from Ernest Guglielminetti to his sister Mathilde, Rau, undated, Fort de Cock, 15 August 1887, in: UB NL 175, Aa 56-57, A56.

threatening to the sense of scientific superiority of European medical officers, as can be exemplified by how Heinrich Breitenstein repeatedly marginalized his (female) indigenous colleagues' expertise throughout his memoirs. He wrote, for example, that

“These ladies have absolutely no medical knowledge; they do not individualize at all; old or young, man or woman; first or last stage of the disease [...] cause or consequence of other diseases [...] everything runs on the same template. The dosage is also very primitive; their herbs are dispensed ‘by the handful’, by the fingertip, and so on.”³⁸³

What was even more scandalous to him than the *dukun*'s lack of precision and sense for causality was the fact that even many of his European colleagues were nonetheless convinced by the herbal medical treatments they had to offer. While “the patient could not know” at “what a low level the Malay's medical traditions” were situated, he commented, “[i]t is outrageous, how even *scientific men* switch from the post hoc to the propter hoc and join in the hymn to the arts of the *dukun*.”³⁸⁴ The popularity of indigenous herbal traditions in the Dutch East Indies appeared to have challenged European physicians' self-perceptions as (male) carriers of a supposedly ‘superior’ (scientific) knowledge. This sense of superiority thus had to be reclaimed through the stigmatization of indigenous women's expertise. Despite such efforts, indigenous herbal cures by no means waned in popularity and European medical professionals such as Breitenstein failed to completely impose their gendered order of medical care and European scientific hegemony on to Indies society.³⁸⁵

³⁸³ Breitenstein, *Borneo*, p. 165.

³⁸⁴ *Ibid.*, 164. Emphasis added.

³⁸⁵ See Pols, ‘Indigenous Herbal Medicine in the Dutch East Indies’.

Conclusion

An intersectional analysis of Germanophone ‘medical mercenaries’ in the Aceh War reveals that dichotomies such as ‘indigenous’ vs ‘European’ were not monolithic categories that went without contestation. First, their testimonies reveal a contingent relationship between regionalism, nationality and Europeanness.³⁸⁶ Vis-à-vis the Acehnese enemies, ‘medical mercenaries’ generally claimed belonging to a larger European (Christian) civilization that they believed to be incompatible with the ‘fanatic’ Muslims they encountered in Aceh. Furthermore, in their writings, they reproduced established, colonial discourses surrounding the ‘martial’ Ambonese, the ‘effeminate’ Javanese, or the ‘amok running’ Malay. On an individual level, however, such oversimplified categorizations of irrational, Southeast Asian ‘others’ do not hold up. Wallis-born Ernest Guglielminetti, himself a Catholic, for example, expresses certain sympathies for the “devote” Catholic Ambonese. The Czech Pavel Durdik even goes as far as presenting the “brave” and “persistent” Acehnese to his readers as a role model for the Czech struggle for independence. Durdik’s open sympathy for the Acehnese ‘enemies’ would have been unthinkable in an official Dutch publication at the time. A transimperial perspective – or the consideration of non-Dutch European archives and actors – thus allows to further differentiate the category ‘European’ within the complicated configurations of class, gender, religion, nationality, and regionalism, that structured the imperial social order in the Dutch East Indies. Second, to medical officers, medical expertise proved to be a powerful discursive tool in distinguishing themselves from their lower-class, European colleagues in the Dutch Colonial Army. In their testimonies, the lower-class soldiers are described as “untamed”, uneducated, and unable to appropriately assess and avoid dangerous temptations such as the excessive consumption of low-quality alcohol or an irresponsible and immoral sexual behavior that resulted in the spread of venereal diseases. Medical officers themselves contended their belonging to the morally superior, respectable middle-class by claiming that their rational (medical) knowledge about moderate and responsible alcohol consumption as well as their alleged abstinence from interracial relationships enabled them to uphold a bourgeois lifestyle even in the temptation-fueled tropics. Furthermore, they practically performed their class – and regional – identity through sending letters to their families, reading regional newspapers or consuming luxury goods and wines from home. These practices were enabled through the well-

³⁸⁶ On the contingency of national identity in 19th and early 20th century colonialism, see Arnold, David (2015): ‘Globalization and Contingent Colonialism. Towards a Transnational History of “British” India’, in: *Journal of Colonialism and Colonial History* 16 (2), online, DOI: [10.1353/cch.2015.0019](https://doi.org/10.1353/cch.2015.0019).

established postal service and transportation infrastructure in late 19th century Southeast Asia that connected remote places such as the alpine town of Brig or the Prussian hinterlands with the far-away Dutch East Indies. Third, despite their repeated claims to a hegemonic position in the colonial social order, medical officers were themselves gendered beings whose masculinity was under constant threat. Being non-combatant members of a colonial army, they felt the need to constantly reiterate the hardships and violence they experienced in an attempt to claim masculine attributes that were hegemonic in a military context. The fragility of the supposed hegemonic nature of medical officers' masculine identity as "scientific" and "rational" medical authorities is further expressed in their helplessness when facing "invisible enemies" such as the beriberi disease and the high popularity of indigenous medical traditions transmitted by *dukun*. The testimonies of 'medical mercenaries' thus reveal further insight into the contested and fragile nature of European hegemony in the tropics that required constant performative acts to protect it from collapsing. At the same time, it raises serious doubts about the effectiveness of its "tools of empire" such as medicine.

Lastly, the case of 'medical mercenaries' from Germanophone Europe in Aceh demonstrates the transimperial dimension of the discursive construction and practical performance of bourgeois, European, masculine identities. Not only were non-Dutch Europeans actively involved in reproducing colonial stereotypes of racialized 'others' and lower-class European bodies, fueling these discourses with presumably "scientific", medical substance. Through their letters and published memoirs, they disseminated fears of fanatic Muslims and sexualized depictions of "native" women way into the European hinterlands in Brig or Prussia. At the same time, their case indicates that bourgeois, male identities even in regions with seemingly little affiliation to late 19th century European colonialism such as the Habsburg Empire or Switzerland were co-constructed – and challenged – in ('foreign') colonies.

3 ‘Men on the Spot’ and Dutch Colonial Medicine: Transimperial Tensions in Early Bacteriology

“It will not be very long before a question will have to be resolved in Atjeh that will be decisive for the hygienic conditions of this country for a long time. The grim gravediggers will come and ask: ‘Where shall we bury our corpses?’”³⁸⁷

“Where shall we bury our corpses?” It was with this rather morbid question that the physician Dr. Otto Gelpke commented on the high death toll caused by the beriberi disease among Dutch troops stationed in Aceh, northwestern Sumatra, in the 1870s. Gelpke himself was a direct observer of the devastating effect of diseases during the Dutch war against the Acehnese Sultanate: Born a Swiss national, he served the Dutch Colonial Army as second rank medical officer from 1877 to 1880. Already during and shortly after his military service, Gelpke attempted to capitalize on the first-hand experiences he made during his time in the Dutch East Indies. He became an active contributor to the Dutch East Indies’ medical journal *Geneeskundige Tijdschrift voor Nederlandsch-Indië* (GTNI) where he published – exclusively in German – on potential ‘solutions’ for the threats posed by diseases such as beriberi.

As has been discussed in the previous chapter, allegedly³⁸⁸ tropical diseases such as malaria, cholera, or beriberi deeply troubled both individual physicians stationed in Aceh and the Dutch Colonial Army as a whole, as they caused significantly higher death rates even than the enemy’s blade. Identifying the causes and effective treatments for diseases prevalent in the tropics was thus matter of great urgency to colonial governments, as they were directly linked to the military success and eventual consolidation of the European overseas empires in the late 19th century.³⁸⁹

³⁸⁷ Gelpke, Otto (1879): ‘Beri-Beri’, in: *Geneeskundig Tijdschrift voor Nederlandsch-Indië (GTNI) XIX*, pp. 256–282, here p. 256.

³⁸⁸ As has been discussed in detail by the historian of medicine David Arnold, tropical medicine was the only medical subdiscipline dedicated to a geographically and climatically delimited space. Many of the diseases termed “tropical” however also occurred in temperate climates and served to discursively construct the “tropics” as inherently “other”. In this subchapter, the term “tropical diseases” is thus used in its sense of the discursive construction of the “tropics” – coined “tropicality” by Arnold – rather than a descriptive category. See Arnold, David: ‘Introduction. Tropical Medicine before Manson’, in: idem (ed): *Warm Climates and Western Medicine. The Emergence of Tropical Medicine, 1500-1900*, Amsterdam: Rodopi 1996, pp. 1–19, here pp. 3–10.

³⁸⁹ See Curtin, Philip: *Death by Migration. Europe’s Encounter with the Tropical World in the Nineteenth Century*, Cambridge: Cambridge University Press 1989, pp. 130–158; Curtin, Philip: ‘Disease and Imperialism’, in: Arnold (ed), *Warm Climates and Western Medicine*, pp. 99–107; Harrison, Mark (1992): ‘Tropical Medicine in Nineteenth-Century India’, in: *The British Journal for the History of Science 25 (3)*, pp. 299–318; Headrick, Daniel: *Power over Peoples. Technology, Environments, and Western Imperialism 1400 to Present*, Princeton: Princeton University Press 2009, pp. 226–256; Anderson, Warwick: *Colonial Pathologies. American Tropical Medicine, Race, and Hygiene in the Philippines*, Durham: Duke University Press 2008; Chakrabarti, Pratik: *Medicine and Empire 1600-1960*, Basingstoke: Palgrave Macmillan 2014, pp. 45–43; Downs, Jim: *Maladies of Empire. How Slavery, Imperialism, and War Transformed Medicine*, Cambridge: The Belknap Press of Harvard University Press 2021, pp. 88–113; Zaugg, Roberto (2016): ‘Guerre, Maladie, Empire. Les Services de Santé

Medical officers such as the Swiss Otto Gelpke, in turn, attempted distinguishing themselves as ‘experts’ on diseases such as malaria or beriberi in colonial and European medical journals. In all of this, Gelpke was by no means an exception. Dozens of the roughly 300 ‘medical mercenaries’ from Germanophone Europe who were recruited by the KNIL throughout the 19th century up until the First World War became heavily involved in discussions surrounding the young disciplines of bacteriology and tropical medicine. This chapter investigates the history of medical research in the Dutch East Indies in the last two decades of the 19th century through the accounts of German-speaking physicians employed in the Dutch Military Health Service (*Militair-Geneskundige Dienst*). By focusing on these ‘men on the spot’, the chapter aims at demonstrating that early research in bacteriology transcended both the paradigmatic dichotomies between practical/experimental and applied/laboratory science as well as neatly separated national and imperial contexts.

The research interest of the chapter is threefold. First, while the history of tropical medicine was intricately linked to the aggressive colonial expansion in the age of high imperialism towards the end of the 19th century,³⁹⁰ the same can be said only to a very limited extent in the case of the history of bacteriology. Only in recent years, historians have started to highlight the importance of colonial contexts in the making of late 19th century bacteriological knowledge. This scholarship has, however, mostly remained stuck in nation- or empire-centered “containers”.³⁹¹ Existing historiography on medicine in the Dutch East Indies, for example, has so far primarily focused on the production, application, and dissemination of medical knowledge within the Netherlands and their colonies.³⁹² Relatedly, historiographical enquiries

Militaires en Situation Colonial Pendant le Long XIXe Siècle’, in: *Histoire, Médecine et Santé* 10, pp. 9–16; Bauche, Manuela: *Medizin und Herrschaft: Malariabekämpfung in Kamerun, Ostafrika und Ostfriesland (1890-1919)*, Frankfurt am Main: Campus 2017.

³⁹⁰ See, for example, Neill, Deborah: *Networks in Tropical Medicine. Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890-1930*, Stanford: Stanford University Press 2012; Livingstone, David N. (1999): ‘Tropical Climate and Moral Hygiene: The Anatomy of a Victorian Debate’, in: *The British Journal for the History of Science* 32 (1), pp. 93–110; Arnold (ed), *Warm Climates and Western Medicine*; Ehlers, Sarah: *Europa und die Schlafkrankheit. Koloniale Seuchenbekämpfung, europäische Identität und moderne Medizin 1890-1950*, Göttingen: Vandenhoeck & Ruprecht 2019; Bhattacharya, Nandini: *Contagion and Enclaves. Tropical Medicine in Colonial India*, Liverpool: Liverpool University Press 2012; Bashford, Alison (2000): “‘Is White Australia possible?’ Race, Colonialism and Tropical Medicine”, in: *Ethnic and Racial Studies* 23 (2), pp. 248–271.

³⁹¹ See, for example, Velmet, Aro: *Pasteur’s Empire. Bacteriology and Politics in France, its Colonies, and the World*, New York: Oxford University Press 2020; Chakrabarti, Pratik: *Bacteriology in British India. Laboratory Medicine and the Tropics*, Suffolk: Boydell & Brewer 2012. Important attempts to illuminate connections between geo-cultural divides in the history of medicine have been made in Digby, Anne/Ernst, Waltraud/Mukharji, Projit B. (eds): *Crossing Colonial Historiographies. Histories of Colonial and Indigenous Medicines in Transnational Perspective*, Newcastle upon Tyne: Cambridge Scholars Publishing 2010.

³⁹² See Van Bergen, Leo: *Uncertainty, Anxiety, Frugality. Dealing with Leprosy in the Dutch East Indies, 1816-1942*, Singapore: NUS Press 2018; Pols, Hans: ‘Quarantine in the Dutch East Indies’, in: Bashford, Alison (ed): *Quarantine. Local and Global Histories*, London: Palgrave Macmillan 2016, pp. 85–102; Varhave, J.P.: ‘Malaria, Epidemiology and Immunity in the Malay Archipelago’, in: Van Heteren, G.M/De Knecht-Van Eekelen,

into the colonial connections of the “father of bacteriology” Robert Koch have mainly focused on the German Colonial Empire as a site of bacteriological knowledge production despite the fact that Koch himself made some of his most important discoveries in British India and Egypt.³⁹³ The activities of German(ophone) bacteriologists who took advantage of the research opportunities awaiting in ‘foreign’ empires – both before and during the German Empire’s entry in the colonial race in 1884 – have barely fallen under historiographical scrutiny so far.³⁹⁴ The first subchapter thus aims to expand the spatial framework of the history of early bacteriology by proposing ‘Germanophoneness’ as a lens of analysis in exploring the transimperial nature of late-nineteenth century medical discourse. The chapter demonstrates how the German language emerged as one of the *linguae francae* of late 19th century scientific communication and thereby connected medical researchers from Berlin to Batavia and Tokyo. Second, a further aim is to emphasize the need of writing historiographies of bacteriology beyond an exclusive focus on medical ‘pioneers’ such as Robert Koch, Christiaan Eijkman, or Louis Pasteur. While earlier research in medical history has presented bacteriology around 1900 as a *fait accompli*, more recent historiographies have demonstrated that the hypotheses of Robert Koch et al. were highly contested all the way into the early twentieth century.³⁹⁵ Medical ‘men on the spot’ in European colonies were particularly hesitant in accepting the bacteriological paradigms that contradicted their view on the pathogenic particularities of tropical regions. “They were”, to put it in the words of historian Leo van Bergen, “practitioners who trusted their personal observations, which gave them no reason to accept contagion, even though many European scientists were arguing otherwise in the meantime.”³⁹⁶ In the second subchapter, I intend to

A./Pulissen, M.J.D. (eds): *Dutch Medicine in the Malay Archipelago 1816–1942*, Amsterdam: Rodopi 1989, pp. 87–104.

³⁹³ See for example Eckart, Wolfgang: *Medizin und Kolonialimperialismus. Deutschland 1884-1945*, Paderborn: Schöningh 1997; Gradmann, Christoph (2016): ‘Africa as a Laboratory. Robert Koch, Tropical Medicine and Epidemiology’, in: Vögele, Jörg/Schulter, Katharina (eds): *Epidemien und Pandemien in historischer Perspektive*, Wiesbaden: Springer 2016, pp. 325–335; Wedekind, Klemens: *Impfe und herrsche. Veterinärmedizinisches Wissen und Herrschaft im kolonialen Namibia 1887-1929*, Göttingen: Vandenhoeck & Ruprecht 2021; Eckart, Wolfgang (2002): ‘The Colony as Laboratory. German Sleeping Sickness Campaigns in German East Africa and in Togo, 1900-1914’, in: *History and Philosophy of the Life Sciences* 24 (19), pp. 69–89.

³⁹⁴ One important exception is the work of Irene Poczka, who has analyzed the correspondences between Prussian physicians and German-speaking Russian medical experts on the cholera epidemics in Russia between 1829 and 1892. See Poczka, Irene: *Die Regierung der Gesundheit. Fragmente einer Genealogie liberaler Governmentalität*, Bielefeld: Transcript 2017, pp. 217–357.

³⁹⁵ See, for example, Ogawa, Mariko (2000): ‘Uneasy Bedfellows: Science and Politics in the Refutation of Koch’s Bacterial Theory of Cholera’, in: *Bulletin of the History of Medicine* 74 (4), pp. 671–707; Mann, Michael (2017): ‘Kolonialismus in den Zeiten der Cholera. Zum Streit zwischen Robert Koch, Max Pettenkofer und James Cuninghame über die Ursachen einer epidemischen Krankheit’, in: *Comparativ* 15 (5/6), pp. 80–106; Worboys, Michael (2007): ‘Was there a Bacteriological Revolution in Late Nineteenth-Century Medicine?’, in: *Studies in History and Philosophy of Biological and Biomedical Sciences* 38 (1), pp. 20–42.

³⁹⁶ Van Bergen, *Uncertainty, Anxiety, Frugality*, p. 103. A similar argument has been very forcefully made recently in Mitra, Sarbajit: *Intoxicants and Hindu Subject Formation in 19th Century Bengal*, PhD dissertation, SOAS, London 2023, chapter 2.

shed some light on this hesitancy by investigating why and how many medical ‘men on the spot’ vigorously refuted the ‘novel’ hypotheses put forward by bacteriologists. Other than Leo van Bergen, I argue that the early refutation of bacteriology did not primarily stem from contradictory observations and ideological biases, but rather resulted from a struggle for scientific authority and power between individual physicians competing for the scientific ‘truth’ about pathogenic microorganisms. I demonstrate how medical ‘men on the spot’ capitalized on their practical experience with diseases in the colonies in claiming scientific authority vis-à-vis the laboratory scientists in the metropolises. Third, and related, in the third subchapter I propose a contingent relationship between bacteriological universalism and ecological determinism in late 19th century medical discourse. Even though some medical officers did claim an inherent ‘otherness’ of the tropical climate and diseases, they, too, conducted experiments, dissected patients, and attempted to isolate or identify microorganisms and parasites potentially causing diseases in the tropics. In their research methods, they thus differed only to a somewhat limited extent from their colleagues in the laboratories. In turn, I demonstrate how bacteriologists in Europe based their findings on hands-on observations and experiences in the colonies and thus did not remain untouched by colonial ideology. Despite the medical subdiscipline’s claims to universality, ‘race’ thereby continued to be powerful marker of distinction in European understandings of the human body and its predisposition to disease. Finally, in the last subchapter, I hint at the ways in which environmental determinism and perceptions of the tropical climate and diseases as inherently ‘other’ also shaped physicians’ views of the nature and pathogenicity – or lack thereof – in Germanophone Europe itself. For this purpose, I demonstrate how the former ‘medical mercenaries’ Heinrich Erni and Heinrich Breitenstein capitalized on their experiences in the KNIL after ending their service by founding *Kurpraxen* (spa clinics³⁹⁷) in Germanophone Europe. They advertised their clinics to patients returning from ‘the tropics’, stressing the healing properties of the environment in the European hinterlands that they discursively constructed as diametrically opposed to the pathogenic tropics.

³⁹⁷ In historiography, the German term ‘Kur’ with its strict medical connotation is commonly translated with the English term ‘spa’. See, for example, Large, David Clay: *The Grand Spas of Central Europe: A History of Intrigue, Politics, Art, and Healing*, Lanham: Rowman & Littlefield 2015.

3.1 ‘German’ Bacteriology in a Transimperial World

In recent years, a large and growing body of literature has pointed to the ‘hegemonic’ status of German science and the up-and-coming Humboldtian university system in the second half of the nineteenth century as well as its close ties to European colonialisms. As has been convincingly demonstrated by historians such as Ulrike Kilchberger, Moritz von Brescius, and others, German experts were highly involved in the scientific endeavors of ‘foreign’ imperial powers long before the high tide of German imperialism.³⁹⁸ This held particularly true for the Dutch Empire, which was “traditionally permeable”³⁹⁹ for ‘foreign’ scientists (see chapter 1.1.2). The close ties between German science and the Dutch Empire apply just as much to the medical and microbiological sciences in the age of the ‘laboratory revolution’ of the late nineteenth century.⁴⁰⁰ Understanding the production of knowledge primarily as an act of multidirectional communication,⁴⁰¹ the present subchapter investigates the significance of the German language in the transimperial circulation and contestation of bacteriological knowledge in the late 19th century.

Germanophone Medical Officers and Dutch Colonial Medicine

The history of bacteriological research in the Dutch East Indies was inextricably linked to the German bacteriological discourse surrounding the discoveries of Robert Koch. Renowned Dutch medical researchers such as Christiaan Eijkman or Cornelis Adrianus Pekelharing had worked and studied in Robert Koch’s laboratories in Berlin before conducting further microbiological research in the Dutch East Indies. In 1899, Robert Koch himself visited Batavia (Jakarta) in order to study malaria. Once he arrived in the Dutch East Indies, Koch was

³⁹⁸ See Von Brescius, Moritz: *German Science in the Age of Empire. Enterprise, Opportunity and the Schlagintweit Brothers*, Cambridge: Cambridge University Press 2019; Ellis Heather/Kirchberger, Ulrike (eds): *Anglo-German Scholarly Networks in the Long Nineteenth Century*, Leiden: Brill 2014; Manjapra, Kris: *Age of Entanglement. German and Indian Intellectuals Across Empire*, Cambridge: Harvard University Press 2014.

³⁹⁹ Zangger, Andreas: *Koloniale Schweiz. Ein Stück Globalgeschichte zwischen Europa und Südostasien (1860-1930)*, Bielefeld: Transcript 2011, p. 351.

⁴⁰⁰ For the high presence of Germans in the laboratories in the Botanical Gardens in Buitenzorg see Weber, Andreas (2019): ‘Collecting Colonial Nature. European Naturalists and the Netherlands Indies in the Early Nineteenth Century’, in: *BMGN – Low Countries Historical Review* 134 (3), pp. 72–95; Wagner, Florian: ‘Inventing Colonial Agronomy: Buitenzorg and the Transition from the Western to the Eastern Model of Colonial Agriculture, 1880s–1930s’, in: Kirchberger/Bennett (eds), *Environments of Empire*, pp. 103–128.

⁴⁰¹ See Secord, James A. (2004): ‘Knowledge in Transit’, in: *Isis* 95 (4), pp. 654–672. See also Raj, Kapil (2013): ‘Beyond Postcolonialism ... and Postpositivism. Circulation and the Global History of Science’, in: *Isis* 104 (2), pp. 337–347.

accommodated by members of the *Vereeniging tot Bevordering der Geneeskundige Wetenschappen in Nederlandsch-Indië* (Association for the Advancement of the Medical Sciences in the Dutch East Indies), of which he himself was a corresponding member.⁴⁰² The arrival of the “famous” German bacteriologist in the Dutch East Indies was reported on and celebrated in the Dutch colonial press.⁴⁰³ What these reports fail to mention is that even before Koch’s arrival, medical experts from Germanophone Europe were deeply involved in debates surrounding the cause and appropriate control of epidemic diseases in the Dutch East Indies. As has been elaborated in chapters 1 and 2, physicians from the German and Austrian Hungarian Empire as well as Switzerland provided the largest share of non-Dutch, European medical experts in the Dutch East Indies. At the same time, the health system in the Indies was largely monopolized by the military throughout the 19th century, granting medical officers a privileged position in studying the bodies of patients suffering from diseases prevalent in the colony. Many ‘medical mercenaries’ were thus eager to capitalize on their first-hand observations of ‘epidemic’ diseases such as cholera or beriberi as well as their access to instruments, statistics, and deceased patients in the Dutch colonial hospitals in order to partake in the highly topical medical debates of the late nineteenth century. The most important forum for Germanophone medical officers to disseminate the results of their medical research in the Dutch East Indies was the *Geneeskundig Tijdschrift voor Nederlandsch-Indië* (GTNI). The establishment of the GTNI was closely linked to the *Vereeniging tot Bevordering der Geneeskundige Wetenschappen in Nederlandsch Indië* that was founded by the Dutch physician and chief of the Indies’ medical services Willem Bosch in 1851. In 1852, only one year after the *Vereeniging* was founded, the first issue of the GTNI was launched. The journal existed until the Japanese occupation of Indonesia in 1942 and published a total of roughly 4500 articles. The GTNI provided the most important platform for the discussion of medical research in and about the Dutch East Indies. In the second half of the 19th century, most of the contributions revolved around the causes and cure of beriberi, cholera, and the plague.⁴⁰⁴

The GTNI accepted articles submitted both in German and in Dutch, which clearly lowered the linguistic threshold for German-speaking physicians to publish their findings and

⁴⁰² See letter from Dr. G. Grijns to Robert Koch, 21 September 1899, Robert Koch Institut, Nachlass Robert Koch, as/b1/097.

⁴⁰³ See ‘De beroemde Robert Koch’, in: *De Locomotief*, 18 September 1899; ‘Robert Koch te Batavia’, in: *De Locomotief*; 26 September 1899.

⁴⁰⁴ See Tan, Sian Nio: *Zur Geschichte der Pharmazie in Niederländisch-Indien (Indonesien) 1602-1945*, Würzburg: jal-verlag 1976, p. 74. For an overview of the history of the GTNI, see Van Bergen, Leo/Hesselink, Liesbeth/Verhave, Jan Peter (eds): *The Medical Journal of the Dutch Indies 1852-1942. A Platform for Medical Research*, Jakarta: Indonesian Academy of Sciences 2017.

observations in the Dutch East Indies. Moreover, the military monopoly on medical health care in the Indies was reflected in the professional background of the GTNI authors. In 1882, for example, eight out of fourteen articles listed in the GTNI were authored by medical officers, two of whom originated from the German and one from the Austrian-Hungarian Empire.⁴⁰⁵ After having returned to Europe, many Germanophone medical officers formerly employed with the KNIL discussed and disseminated their observations from the Dutch East Indies in German-language medical publications and at specialized congresses in Germanophone Europe. In 1896, for example, the Austrian ‘medical mercenary’ Carl Weintraub shared his thoughts on beriberi in the *Wiener Klinik*, an Austrian journal explicitly dedicated to “practical experiences”.⁴⁰⁶ The Austrian medical officer Heinrich Breitenstein and the German KNIL-physician Karl Däubler, too, reported on their findings on the aetiology of beriberi in Vienna-based medical journals. The latter’s article was based on a presentation he had held in Frankfurt am Main at the 68th *Versammlung deutscher Naturforscher und Ärzte* (Assembly of German Natural Scientists and Physicians), one of the major forums in the course of which German(ophone) naturalists and physicians exchanged their views on state-of-the-art research.⁴⁰⁷ In 1886, the Swiss medical officer Heinrich Erni presented his hypothesis of a “beriberi worm” at the *Versammlung deutscher Naturforscher und Ärzte*. His findings seemed to have aroused the interest of the Ceylon-based physician J. D. Macdonald, who translated Erni’s presentation from German into English and published his account in the *Report on Anaemia, or Beri-Beri, of Ceylon* in 1887.⁴⁰⁸ ‘Medical mercenaries’ knowledge from the Indies thus circulated beyond the Netherlands and their colonies as well as their European countries of origin.

In some instances, medical officers were even appointed directly by the KNIL’s medical corps to scientifically investigate diseases that were particularly prevalent among the colonial troops. In 1886, for example, Leipzig-born medical officer Friedrich Joseph Max Fiebig was given a temporary leave from his military duties and relocated to Padang to study the aetiology of beriberi. Fiebig was accompanied by an unnamed Dutch medical officer, who had spent

⁴⁰⁵ See ‘Inhoud’, in: *GTNI XXII.*, 1882, pp. V.–VI.

⁴⁰⁶ See Weintraub, Carl (1896): ‘Aerztliche Erfahrungen über die “Beriberi”, eine Krankheit der tropischen und subtropischen Gegenden’, in: *Wiener Klinik* 22, pp. 265–328.

⁴⁰⁷ See Breitenstein, Heinrich (1887): ‘Briefe aus Indien. Die Beri-Beri-Epidemie auf Atjeh (Sumatra) 1885-1886’, in: *Internationale Klinische Rundschau* 1, pp. 902–905, pp. 1000–1002, pp. 1030–1031 and pp. 1061–1063; Däubler, Karl (1896): ‘Die Beri-Berikranheit’, in: *Wiener Klinische Rundschau. Organ für die gesammte praktische Heilkunde sowie für die Interessen des ärztlichen Standes* X (40), pp. 678–679.

⁴⁰⁸ See Kynsey, W.R.: *Report on Anaemia, or Beri-Beri, of Ceylon*, Colombo: Government Printing Office, Colombo, 1887, pp. 53–56.

several months in Amsterdam to become acquainted with the latest trends in bacteriology.⁴⁰⁹ During his research stay, Fiebig exchanged views and experimental results with fellow medical researchers stationed in Padang. Among others, he collaborated with Japanese health officer Sugenoja, who would shortly after accompany the Dutch East Indies' Inspector of Army Medical Services J. J. Cornelissen to Aceh in order to study the aetiology of beriberi.⁴¹⁰

Japanese Connections

It is not too far-fetched to assume that Fiebig and Sugenoja discussed the outcomes of their bacteriological experiments in the former's native language German when they met in Padang. Like the Dutch colonial government, Japan cultivated close ties to Germanophone medicine throughout its modern history. The earliest contacts of Japanese physicians with European medical traditions can be traced back to the seventeenth century, when the German surgeon Engelbert Kaempfer visited Japan on board of a ship of the VOC. The most prominent figure in early German-Japanese medical encounters is most certainly the Würzburg-born physician Philipp Franz von Siebold. In 1822, Siebold enlisted as a medical officer for the Dutch Colonial Army. One year later, he was relocated to the Dutch trading post Dejima in Japan. Alongside his medical practice, Siebold would compile a large natural history collection and publish widely on the Japanese flora and fauna. Moreover, he established a school where he would train Japanese students in European medical traditions. His Japanese students would in turn acquaint him with the study of Japanese botany and herbal medicine.⁴¹¹ Later in his career, Siebold would become an important figure in diplomatic exchanges between the Japanese, Dutch, and Russian governments and is commonly ascribed a crucial role in the opening of Japan to the West in the late 19th century.⁴¹² Large parts of Siebold's ethnographic, zoological, and botanical

⁴⁰⁹ See 'De Javabode schrijft', in: *De Maasbode*, 19 July 1886.

⁴¹⁰ See Fiebig, M. (1889): 'Geschichte und Kritik der bacteriologischen Erforschung der Beri-Beri Krankheit', in: *GTNI XXIX.*, pp. 249–315, here p. 257; 'Beri-Beri', in: *Het Nieuws van den Dag*, 22 November 1886.

⁴¹¹ For an overview of von Siebold's scientific career, see Compton, James/Thijsse, Gerard: 'The Remarkable P.F.B. von Siebold, his Life in Europe and Japan', in: *Curtis's Botanical Magazine* 30 (3), pp. 149–316; Thiede, Arnulf/Keil, Gundolf/Hiki, Yoshiki (eds): *Philipp Franz von Siebold and his Era. Prerequisites, Developments, Consequences and Perspectives*, Berlin: Springer 2000.

⁴¹² For Siebold's diplomatic career, see Franz, Edgar: *Philipp Franz von Siebold and Russian Policy and Action on Opening Japan to the West in the Middle of the Nineteenth Century*, Munich: Iudicium 2005; Plutschow, Herbert: *Philipp Franz von Siebold and the Opening of Japan. A Re-Evaluation*, Folkestone: Global Oriental 2007.

collections from Japan are today located in the Museum of Natural History and the Museum of Ethnology in Leiden, the SieboldHuis in Leiden, as well as in several German museums.⁴¹³

From 1870 onwards, the Japanese Meiji regime actively pursued the integration of ‘German’ science into their scientific landscape. These efforts are to be situated in the larger context of the Meiji restoration, wherein the Japanese government sought to ‘modernize’ the nation according to the ‘Western’ model.⁴¹⁴ As a result, numerous German chemists, physicists, mathematicians, physicians, and social scientists were invited to contribute their expertise to Japanese institutions of higher education, including the medical faculties.⁴¹⁵ In 1871, the Meiji government appointed the German physicians Benjamin Karl Leopold Müller and Theodor E. Hoffmann to reform the medical school in Tokyo. Müller and Hoffmann introduced a German-inspired educational system for medicine, including a preparatory school modelled after the German *Gymnasium*. The curriculum covered a wide range of subjects, including conversational as well as specialized medical German. Additionally, hundreds of Japanese medical students, among them the famous Japanese bacteriologist Kitasato Shibasaburō,⁴¹⁶ were sent to Berlin to study under Robert Koch. As a consequence of the Meiji regime’s reform

⁴¹³ See Vos, Ken (2009): ‘The Composition of the Siebold Collection in the National Museum of Ethnology in Leiden’, in: *Senri Ethnological Studies* 54, pp. 39–48; Richtsfeld, Bruno: ‘Die Sammlung Siebold im Staatlichen Museum für Völkerkunde, München’, in: Peter Noever (ed): *Das alte Japan. Spuren und Objekte der Siebold-Reisen*, Munich 1997, pp. 209f.

⁴¹⁴ For the relationship between the German Empire and Meiji Japan, see Cho, J. M./Roberts, Lee M./Spang, Christian W.: ‘Introduction: German-Japanese Relations from Meiji to Heisei. A Case Study of Entangled History’, in: idem (eds): *Transnational Encounters between Germany and Japan*, New York: Palgrave Macmillan 2016, pp. 1–15 ; Kim, Hoi-eun (2015): ‘Made in Meiji Japan. German Expatriates, German-Educated Japanese Elites and the Construction of Germanness’, in: *Geschichte und Gesellschaft* 41 (2), pp. 288–320; Shibata, Masako (2004): ‘Controlling National Identity and Reshaping the Role of Education. The Vision of State Formation in Meiji Japan and the German *Kaiserreich*’, in: *History of Education* 33 (1), pp. 75–85; Wippich, Rolf-Harald (1995): ‘Infected with German Measles. Meiji Japan under German Cultural Influence’, in: *History of European Ideas* 20 (1-3), pp. 399–403. For the Meiji Restoration more broadly, see Hellyer, Robert/Fuess, Harald (eds): *The Meiji Restoration. Japan as Global Nation*, Cambridge: Cambridge University Press 2022; Sims, Richard: *Japanese Political History Since the Meiji Restoration, 1868-2000*, New York: Palgrave Macmillan 2002, pp. 1–68 and Ravina, Mark: *To Stand with the Nations of the World. Japan's Meiji Restoration in World History*, New York: Oxford University Press, 2017.

⁴¹⁵ See Grimm-Solem, Erik (2005): ‘German Social Science, Meiji Conservatism, and the Peculiarities of Japanese History’, in: *Journal of World History* 16 (2), pp. 187–222; Nakatsuji, Shinichi (2022): ‘German Chemists in Japan and Vice Versa in the Meiji Era’, in: *Nachrichten aus der Chemie* 70 (6), pp. 18–23; Chikara, Sasaki (1994): ‘The Adoption of Western Mathematics in Meiji Japan, 1853-1903’, in: *The Intersection of History and Mathematics* 15, pp. 165–186; Gooday, Graeme/Low, Morris (1999): ‘Technology Transfer and Cultural Exchange. Western Scientists and Engineers Encounter Late Tokugawa and Meiji Japan’, in: *Osiris* 13 (1), pp. 99–128. For science in Meiji Japan more broadly, see Low, Morris (ed): *Building a Modern Japan. Science, Technology, and Medicine in the Meiji Era and Beyond*, New York: Palgrave Macmillan 2005.

⁴¹⁶ In the case of Japanese names, the surname precedes the first name in this article, as is customary in Japan.

activities, German became the dominant language of Japanese medical education and research.⁴¹⁷ Many Japanese bacteriologists would later publish their works in German.⁴¹⁸

As will be discussed in more detail in the following subchapters, medical officers in the Dutch East Indies were aware of, and also commented on, the findings of their Germanophone Japanese and German colleagues in the laboratories in Japan. In their scientific publications, they did not articulate any racist resentments towards their East Asian peers. In fact, historians have attributed the historical relations between the Dutch and Japan a rather exceptional position in the larger picture of European-East Asian trade and diplomacy. For most of the early modern era, the Dutch were the only European region who had permission to trade with Japan. Moreover, the Dutch language transformed into a major “contact language” in Tokugawa and Meiji Japan.⁴¹⁹ Consequently, in the 19th century, the Japanese held a rather exceptional position in the hybrid, yet racially hierarchical social order in the Dutch East Indies (for the Dutch East Indies’ social formation see chapter 2). Other than the ‘natives’ or the ‘foreign Orientals’, they were recognized by European observers as a ‘civilized’ people. In 1899, the Japanese were even granted the legal status of ‘European’.⁴²⁰ The high status of the Japanese in the European racial hierarchy was just as much reflected in the scientific community. German and Dutch bacteriologists and anti-contagionists alike respected their Japanese colleagues as equal authorities in the bacteriological discourse.

⁴¹⁷ See Hoi-eun, Kim: *Doctors of Empire. Medical and Cultural Encounters between Imperial Germany and Meiji Japan*, Toronto: University of Toronto Press 2014; Bowers, John (1979): ‘The Adoption of German Medicine in Japan. The Decision and the Beginning’, in: *Bulletin of the History of Medicine* 53 (1), pp. 57–80.

⁴¹⁸ For example, Ogata, Masanori (1897): ‘Ueber die Pestepidemie in Formosa’, in: *Centralblatt für Bakteriologie und Parasitenkunde Abt. I, 21*, pp. 769–777; Miura (1888): ‘Beiträge zur Pathologie der Kakke [beriberi]’, in: *Archiv für pathologische Anatomie und für klinische Medicin* 114, pp. 385–394. For Japan’s long tradition of *linguae francae* in its diplomacy and transnational encounters see Clements, Rebekah (2019): ‘Brush Talk as the “Lingua Franca of Diplomacy in Japanese-Korean Encounters, c. 1600-1868”’, in: *The Historical Journal* 62 (2), pp. 289–309.

⁴¹⁹ See Joby, Christopher: *The Dutch Language in Japan (1600-1900). A Cultural and Sociolinguistic Study of Dutch as a Contact Language in Tokugawa and Meiji Japan*, Leiden: Brill 2021; Laver, Michael: *The Dutch East India Company in Early Modern Japan. Gift Giving and Diplomacy*, London: Bloomsbury 2020.

⁴²⁰ See Fasseur, Cees: ‘Cornerstone and Stumbling Block. Racial Classification and the Late Colonial State in Indonesia’, in: Cribb, Robert (ed): *The Late Colonial State in Indonesia. Political and Economic Foundations of the Netherlands Indies, 1880-1942*, Leiden: KITLV Press 1994, pp. 31–56; Ken’ichi, Goto: *Tensions of Empire. Japan and Southeast Asia in the Colonial and Postcolonial World*, Athens Ohio: Ohio University Press 2003, pp. 3–23. Rather ironically, the Japanese Racial Equality Proposal presented at the Treaty of Versailles in 1919 was rejected by the major Western delegations. See Shimazu, Naoko: *Japan, Race and Equality. The Racial Equality Proposal of 1919*, London: Routledge 1998; Lake, Marilyn/Reynolds, Henry: *Drawing the Global Colour Line. White Men’s Countries and the International Challenge of Racial Equality*, Cambridge: Cambridge University Press 2012, pp. 284–309.

French Dis/connections

Conspicuous only in its absence in the Japanese and German medical accounts surrounding epidemic diseases in the Dutch East Indies is the Pasteurian strand of late nineteenth-century bacteriology, even though there were only minor differences between the two bacteriologist's medical paradigms. Indeed, the relationship between Louis Pasteur and Robert Koch was coined by a strong degree of animosity throughout their scientific careers. Pasteur and Koch had met first in 1881 at the International Congress of Medicine in London. In the following years, their scientific exchanges repeatedly resulted in personal attacks aimed at discrediting each other's research findings. During their encounter at the 4th International Hygiene Congress in Geneva in 1882, linguistic misunderstandings were at the heart of their dispute: Even though Koch read French, he was unable to understand or speak it well. During Pasteur's speech in Geneva, Koch misunderstood Pasteur referring to his work as "orgueil Allemand" (German pride) instead of "recueil Allemand" (German Compendium), which the latter took as a personal offense. The controversy at the same time reflected the growing hostilities between the German Empire and France following the Franco-Prussian War (1870-1871).⁴²¹ In 1883, both the French and the Germans sent state commissions to Egypt to compete in a transnational race for the scientific truth about the aetiology of cholera.⁴²² The competition between Koch and Pasteur, however, went beyond nationalist sentiments and simultaneously inscribed itself in their approaches to tackle epidemic diseases. While Pasteur's main research focus was directed towards immunization methods, most importantly vaccines, Koch rather put a strong emphasis on sanitary regulations. In other words, while the Pasteurian strand of research targeted individuals in the battle against disease, Koch et al. proposed top-down public health approaches encompassing entire populations.⁴²³ The measures proposed by Pasteur, Koch, and their respective followers to contain contagious diseases directly influenced public health policies in the German and French colonies.⁴²⁴

⁴²¹ See Brock, Thomas: *Robert Koch: A Life in Medicine and Bacteriology*, Washington D.C.: ASM Press 1999, pp. 174–177.

⁴²² See Mann, 'Kolonialismus in den Zeiten der Cholera'; Ogawa, 'Uneasy Bedfellows'.

⁴²³ See Brock, *Robert Koch*, p. 177; Velmet, *Pasteur's Empire*, pp. 11–16; Trankell, Ing-Britt/Ovesen, Jan (2004): 'French Colonial Medicine in Cambodia. Reflections of Governmentality', in: *Anthropology & Medicine 11 (1)*, pp. 91–105; Weindling, Paul: 'Scientific Elites and Laboratory Organization in *fin de siècle* Paris and Berlin. The Pasteur Institute and Robert Koch's Institute for Infectious Diseases Compared', in: Cunningham, Andrew/Williams, Perry (eds): *The Laboratory Revolution in Medicine*, Cambridge: Cambridge University Press 2002, pp. 170–188. For Louis Pasteur and the French public hygiene movement more broadly, see Latour, Bruno: *The Pasteurization of France*, Cambridge: Harvard University Press 1993.

⁴²⁴ For bacteriology in the French colonial empire see Moulin, Anne Marie: 'Tropical without the Tropics. The Turning-Point of Pastorian Medicine in North Africa', in: Arnold (ed), *Warm Climates and Western Medicine*, pp.

As has been alluded to above, Austrian, Swiss, and German physicians researching in the Dutch East Indies did not take notice of the competition between Koch and Pasteur and did not comment at all on the latter's 'individualistic' approach to the containment of epidemic diseases. Rather, they seemed to have been mainly preoccupied with the bacteriological paradigm proposed by Robert Koch et al. that suggested the existence of pathogenic microorganisms whose spread was to be contained by implementing strict, top-down sanitary health measures. The ways in which 'medical mercenaries' questioned the hypotheses put forward by Kochian bacteriologists will be discussed in more detail in the following subchapters. For now, it seems as if the fact that the German language had established itself as lingua franca of scientific communication between Japanese, German, Swiss, and Austrian bacteriologists resulted in a wider reception of Robert Koch's medical paradigms as opposed to Louis Pasteur's contemporaneous microbiological discoveries among Germanophone physicians in the Dutch East Indies.

Characteristic of this linguistic divide is the case of the French-speaking Swiss bacteriologist Alexandre Yersin, who had studied in Lausanne, Marburg, and Paris, where he was trained in Pasteur's laboratory in 1886. Cultivating close ties to French bacteriologists following the Pasteurian paradigm, Yersin would later work as a physician in French Indochina. In 1894, he was appointed to the Pasteur Institute by the French government, where he allegedly discovered the plague bacillus.⁴²⁵ Around the same time, the Austrian-Hungarian and Japanese governments sent commissions to Hong Kong and Bombay to investigate the aetiology of the plague. There was, however, no collaboration between these respective national endeavors.⁴²⁶ Generally speaking, Yersin, originating from the Francophone part of Switzerland, seemed to have been primarily oriented towards French bacteriology, while his Germanophone Swiss colleagues mostly followed the German discourse, negotiating their position between the bacteriologist Robert Koch and the localist Max von Pettenkofer (see chapter 3.2).

To summarize, the close, historically grown ties between Germanophone medicine and physicians, on the one hand, and the Dutch Empire as well as Meiji Japan, on the other, led to

160–180; Velvet, *Pasteur's Empire*. For the German Colonial Empire see Eckart, 'The Colony as Laboratory', Ehlers, *Europa und die Schlafkrankheit*.

⁴²⁵ See Kaba, Mariama: 'Alexandre Yersin', in: *Historisches Lexikon der Schweiz (HLS)*, 04.02.2014, online, <https://hls-dhs-dss.ch/de/articles/014701/2014-02-04/>, [accessed: 18.02.2022]; Jennings, Eric T.: *Imperial Heights. Dalat and the Making and Undoing of French Indochina*, Berkeley: University of California Press 2011. Also see Yersin, Alexandre (1894): 'La Peste Bubonique à Hong-Kong', in: *Annales de l'Institut Pasteur* 8, pp. 662–667.

⁴²⁶ See Flamm, H. (2018): 'Die österreichische Pestkommission in Bombay 1897 und die letzten Pest-Todesfälle in Wien 1898', in: *Wiener Medizinische Wochenschrift* 168, pp. 375–383.

the establishment of the German language as one of the *linguae francae* of medical research in and about East and Southeast Asia in the late nineteenth century. Despite their common language of communication, exchanges between Dutch, German, Swiss, Austrian, and Japanese scientists did not go along without tension. Rather, as will be discussed in the following subchapter, they competed in a transimperial race for the ‘scientific truth’ about diseases in the tropics between Berlin, Amsterdam, Sumatra, and Tokyo.

3.2 Competing Explanations and Epistemic Insecurity

As has been convincingly argued by the historian Douglas Peers, the fact that a majority of contributors to colonial knowledge were affiliated with the military had a direct impact on the kind of medical knowledge that was produced as well as the decision as to what diseases were studied.⁴²⁷ This holds just as true in the case of the GTNI, with a significant number of contributors serving the KNIL as medical officers. Moreover, the Dutch colonial government had a particular interest in uncovering the ‘truth’ about the aetiology of those diseases that decimated its army’s manpower. Two diseases that aroused particular attention in Dutch colonial medical discourse in the last decades of the nineteenth century were beriberi and cholera as they were particularly prevalent among soldiers in the Dutch Colonial Army. According to medical officer Heinrich Breitenstein, among all fatalities, 5% of the European and 25% of the indigenous soldiers in Aceh died from beriberi in 1886 alone.⁴²⁸ ‘Medical mercenaries’ hence met with little resistance when trying to capitalize on their experiences in the tropics to enter the vivid debates triggered by the ‘laboratory revolution’ of the late nineteenth century. Not only were they given access to the medical statistics and research infrastructure of the Dutch colonial hospitals, but they were able to dissect hundreds of corpses of deceased Javanese and Chinese patients they had previously treated (see chapter 3.3.1).⁴²⁹

The Colonial Contestation of the Bacteriological Paradigm

Many ‘men on the spot’ researching in colonies were rather reluctant to accept the ‘novel’ bacteriological paradigm famously proposed by their European colleagues Robert Koch and Louis Pasteur, who located the cause of epidemic diseases in infectious microorganisms. First, bacteriology, as has been suggested by the historian of South Asia Pratik Chakrabarti, “directly confronted the nineteenth-century medical paradigm in India, based on anticontagionism and climatic determinism”.⁴³⁰ Chakrabarti’s observation applies just as much to the tropical Dutch

⁴²⁷ See Peers, Douglas (2005): ‘Colonial Knowledge and the Military in India, 1780-1860’, in: *The Journal of Imperial and Commonwealth History* 33 (2), pp. 157–180.

⁴²⁸ See Breitenstein, ‘Briefe aus Indien’, p. 904.

⁴²⁹ For the dissection of human bodies in colonial medicine see Chatterjee, Srilata (2015): ‘Healing the Body. Colonial Medical Practice and the Corporeal Context’, in: *Proceedings of the Indian History Congress* 76, pp. 546–554; Macdonald, Helen (2005): ‘Reading the “Foreign Skull”. An Episode in Nineteenth-Century Colonial Human Dissection’, in: *Australian Historical Studies* 36 (125), pp. 81–96.

⁴³⁰ Chakrabarti, *Bacteriology in British India*, p. 23.

East Indies, where environmental determinism and tropes about the tropics as the “White Man’s Grave” dominated medical discourse way into the early twentieth century (see chapter 1.2.1).⁴³¹ Second, and relatedly, bacteriology was at its core a universal theory, as bacteria could allegedly be isolated and studied in laboratories all around the world. Such universalism clashed with colonial ideology and notions of tropicality, that proposed inherent differences between the “West” and the “Rest”, including differences between European and colonized bodies, environments, morals, or diseases.⁴³² Third, despite the late nineteenth-century advancements in laboratory and microbiological research, the final cause for many epidemic diseases in the tropics could only be conclusively ‘proven’ in the early twentieth century. Robert Koch, for example, repeatedly failed to meet one of his postulates, namely infecting animals with the cholera bacillus, which became a major point of criticism among his adversaries.⁴³³ The thiamine vitamin, whose deficiency caused beriberi, was only isolated from rice in 1926. In the light of such lack of evidence, it seems plausible to understand the late nineteenth-century as an age of “epistemic insecurity” in colonial medical discourse.⁴³⁴

As has been alluded to above, medical practitioners in the army were just as involved in the late nineteenth-century discussions surrounding epidemic diseases as were their peers in the laboratories in Berlin and Tokyo. A disease that caused contestation among medical practitioners was beriberi, whose symptoms ranged from fever, nausea and oedema to dizziness, mental confusion or paralysis of the limbs.⁴³⁵ The wide range of symptoms corresponded with the diversity of explanations on the aetiology of the disease. Before the Dutch medical officer Christiaan Eijkman suggested the correlation between the consumption of polished rice and beriberi in 1897, which would win him a Nobel Prize in 1929,⁴³⁶ contagionist explanations of the disease became increasingly popular in the aftermath of Robert Koch’s ‘discovery’ of the comma bacillus in 1883/84. Theories that proposed an infectious cause of beriberi gained further momentum in the light of the results by the Pekelharing-Winkler commissions. In 1886, the Dutch colonial government appointed Cornelis Pekelharing, professor of pathology in

⁴³¹ See Pols, Hans (2018): ‘Health and Disease in the Tropical Zone. Nineteenth-century British and Dutch Accounts of European Mortality in the Tropics’, in: *Science, Technology and Society* 23 (2), pp. 324–339.

⁴³² See Velmet: *Pasteur’s Empire*, pp. 5–8. On discourses of ‘tropicality’ see Arnold, David: *The Tropics and the Traveling Gaze. India, Landscape, and Science, 1800-1856*, Seattle: University of Washington Press 2014; and Arnold, David (1991): ‘The Indian Ocean as a Disease Zone, 1500-1950’, in: *South Asia. Journal of South Asian Studies* 14 (2), pp. 1–21.

⁴³³ See Mann, ‘Kolonialismus in den Zeiten der Cholera; Ogawa: ‘Uneasy Bedfellows’.

⁴³⁴ See Van Bergen: *Uncertainty, Anxiety, Frugality*.

⁴³⁵ On the contestation of the aetiology of beriberi see Arnold, David (2010): ‘British India and the “Beriberi Problem”’, in: *Medical History* 54 (3), pp. 295–314; Carpernter, Kenneth: *Beriberi, White Rice, and Vitamin B. A Disease, a Cause, and a Cure*, Berkeley: University of California Press 2000.

⁴³⁶ See ‘Christiaan Eijkman’, in: *Encyclopedia Britannica*, <https://www.britannica.com/biography/Christiaan-Eijkman> [accessed 14.02.2022].

Utrecht, and Cornelis Winkler to systematically investigate the cause of beriberi. Before heading towards the Dutch East Indies, Pekelharing and Winkler were sent to Berlin to visit Robert Koch's laboratory and become acquainted with the state-of-the-art in bacteriological research. In the Indies, Christiaan Eijkman, who had met Pekelharing and Winkler in Berlin, volunteered as an assistant to the commission. The Pekelharing-Winkler commission stayed in the Indies for eight months, at the end of which they claimed to have isolated a microorganism responsible for beriberi.⁴³⁷ They were not alone in suggesting a pathogenic bacterium to cause beriberi: João Batista de Lacerda, who had conducted experimental beriberi investigations in the laboratories of the National Museum of Natural History in Rio de Janeiro,⁴³⁸ and Masanori Ogata, a member of the medical faculty at the Imperial University of Tokyo, who had previously studied in Munich and in Berlin, also claimed to have discovered and isolated a bacillus responsible for beriberi. In Japan, contagionist theories became the dominant doctrine on the aetiology of beriberi (or *kakke* in Japanese), which can primarily be attributed to the fact that a majority of Japanese medical researchers in the last two decades of the nineteenth century had been trained in Koch's laboratories in Berlin (see chapter 3.1).⁴³⁹ Moreover, the rapid identification of the cause and cure of beriberi in Japan, too, followed a practical urgency: epidemic diseases, and most importantly beriberi, posed a major public health issue in Meiji Japan in the 1880s. Beriberi was particularly prevalent in the Japanese military, turning the search for effective cures of the disease into a matter of national security. Western-trained Japanese bacteriologists strongly doubted the effectiveness of traditional Japanese medicine and urged the Japanese government to base their public health policies on laboratory-based data. Nevertheless, the bacteriological paradigm remained highly contested and traditional Japanese medicine did not lose importance in the beriberi debate.⁴⁴⁰

The bacteriological paradigm on the aetiology of beriberi was just as much challenged by Germanophone 'medical mercenaries' in the Dutch Colonial Army, many of whom kept themselves up to date on the latest discoveries made by their colleagues in the German and

⁴³⁷ See De Knecht-van Eekelen, Annemarie (2019): 'Het Bacteriologisch Dogma', in: *Nederlands Tijdschrift voor Medische Microbiologie* 27 (1), pp. 14–19; Carpenter, Kenneth (2012): 'The Discovery of Thiamin', in: *Annals of Nutrition and Metabolism* 61 (3), pp. 219–223; Carpenter, *Beriberi, White Rice, and Vitamin B*, pp. 32–35.

⁴³⁸ See de Lacerda, João Batista: *Etiologia e Genesis do Beriberi. Investigações Feita no Laboratorio de Physiologia Experimental do Museu Nacional*, Rio de Janeiro: Liv. Contemporânea de Faro et Lino 1883.

⁴³⁹ See Bay, Alexander (2008): 'Beriberi, Military Medicine, and Medical Authority in Prewar Japan', in: *Japan Review* 20, pp. 111–156.

⁴⁴⁰ See *Ibid.*; Carpenter, *Beriberi, White Rice, and Vitamin B*, pp. 1–14; Bay, Alexander: *Beriberi in Modern Japan. The Making of a National Disease*, Rochester: University of Rochester Press 2012; Sugiyama, Yoshifumi/Seita, Akihiro (2013): 'Kaneshiro Takaki and the Control of Beriberi in the Japanese Navy', in: *Journal of the Royal Society of Medicine* 106 (8), pp. 332–334.

Japanese laboratories.⁴⁴¹ One of the most persistent opponents of the contagionist paradigm was the Swiss medical officer Otto Gelpke. Gelpke believed that beriberi was caused by the consumption of rotten fish imported from China. “For the past two months,” he commented, “I have been asking every beriberi sufferer if they ate dried fish, and in 25 cases, I have always received the answer ‘yes’.”⁴⁴² Based on this observation, Gelpke concluded that “[the] beri-beri disease spreads wherever [fish from China] is caught and eaten; it will appear in epidemics wherever these fish migrate.”⁴⁴³ Eleven years later, Gelpke was still convinced that “[o]f all the factors which come into consideration in the investigation of the hygienic defect [among beriberi patients], the most important seems to me to be nutrition.”⁴⁴⁴ He did, however, for reasons unknown to his readers, change his mind as to which food precisely had “poisoned” its beriberi-struck consumers: rice. Gelpke then heavily criticized contagionists who had prematurely dismissed dietary explanations due to unsuccessful bacteriological examinations of rice:

“According to a report in the Batavia newspapers, 45 different varieties of rice were examined at that time [of Professor Pekelharing’s investigations]. No microorganisms were found and that is enough for the bacillus fanatics to consider the rice question settled.”⁴⁴⁵

In Gelpke’s eyes, bacteriologists were thus “fanatics” blinded by their search for pathogenic microorganisms in explaining the cause of diseases in the colonies. Gelpke’s colleague in the KNIL, the German medical officer Friedrich Joseph Max Fiebig was similarly harsh in his treatment of the advocates of bacteriological hypotheses on beriberi. Building on microscopic investigations conducted by his compatriots Erwin von Baelz in Tokyo and Heinrich Botho Scheube in Kyoto, Fiebig shared the conviction that beriberi should be counted among the miasmatic-contagious diseases, with both pathogenic microorganisms as well as environmental conditions being involved. He was particularly unconvinced by bacteriologists’ attempts to prove the contagious nature of beriberi by infecting animals with isolated beriberi bacilli. The results of the animal experiments conducted by Masanori Ogata, Pekelharing and others were allegedly not only controversial among other bacteriologists such as Sugenooya or Kitasato Shibasaburō.⁴⁴⁶ They were, according to Fiebig, quite simply put, “too good to be true”. Fiebig

⁴⁴¹ For the late acceptance of Eijkman’s dietary theory of the aetiology of beriberi see Somers Heidhues, Mary: ‘The Epidemic that wasn’t. Beriberi in Bangka and the Netherlands Indies’, in: Van Dijk, Kees/Gelman Taylor, Jean (eds): *Cleanliness and Culture. Indonesian Histories*, Leiden: KITLV 2011, pp. 61–93.

⁴⁴² Gelpke, ‘Beri-Beri’, p. 277.

⁴⁴³ *Ibid.*, p. 274.

⁴⁴⁴ Gelpke, Otto (1890): ‘Ein Beitrag zur Bestreitung der Beriberi’, in: *GTNI XXX*, p. 146.

⁴⁴⁵ *Ibid.*, p. 147.

⁴⁴⁶ See Fiebig, ‘Geschichte und Kritik’, pp. 253–279.

thus indirectly accused Pekelharing et al. of manipulating their results according to the bacteriological doctrine.⁴⁴⁷ Among Fiebig's supporters was his Austrian KNIL-colleague Dr. Heinrich Breitenstein, who too claimed that contagionists had come to the hasty conclusion that "[i]f, as has recently been done by some, malaria fever is to be counted among the contagious diseases, because all infectious diseases suddenly became contagious, then of course beriberi must also be included among the latter."⁴⁴⁸ Instead, Breitenstein believed that Dr. Fiebig's study on the miasmatic cause of beriberi could promise interesting results.⁴⁴⁹

A further alternative to the bacteriological paradigm on the aetiology of beriberi was suggested by the Swiss medical officer Heinrich Erni. After numerous examinations of his patients' faeces, Erni insisted on having found a worm that in his opinion was responsible for all symptoms caused by beriberi. To Erni, it appeared to be the same worm that had also been identified in the intestines of workers constructing the Gotthard tunnel in Switzerland. Indeed, the hookworm (*ancylostoma duodenale*) was highly debated in the 1870s in the context of the construction of the Gotthard tunnel in the Swiss Alps. Several tunnel workers passed away as a result of their worm infection, which led to a growing panic concerning the health of miners across German-speaking Europe, in particular the hygienic conditions in the vicinity of the construction sites.⁴⁵⁰ With his worm theory, Erni thus tapped into a wide-spread discourse surrounding the health of working-class bodies in Switzerland and Germany at the time. Erni further supported his argument by claiming to have confirmed the presence of said worm in the intestines of deceased Javanese convicts he had dissected in the hospital in Aceh.⁴⁵¹ The Prussian doctor Friedrich Wilhelm Stammeshaus, Erni's colleague in Aceh, followed up on these discoveries by examining worms that Erni had brought to the military hospital in Panteh Perak, Aceh, in 1882. Stammeshaus too conducted dissections on his deceased Malay, Javanese, and Chinese patients, stating that:

"These macro- and microscopic finding makes it beyond doubt that the nematodes found belong to the anchylostoma duodenalia, which were discovered by Dubini in Milan in 1838 and which were later observed mainly in Egypt, further in Brazil, Cayenne and on the Comoro Islands. Recently, these parasites were found by Italian and Swiss physicians among workers in the St. Gothard [sic!] tunnel."⁴⁵²

⁴⁴⁷ Ibid., p. 283f.

⁴⁴⁸ Breitenstein, 'Briefe aus Indien', p. 1001.

⁴⁴⁹ See ibid., p. 1063.

⁴⁵⁰ See Bluma, Lars: 'The Hygienic Movement and German Mining 1890-1914', in: *European Review of History* 20 (2), pp. 177–196, here pp. 181–187.

⁴⁵¹ See Erni, Heinrich (1882): 'Beri-Beri. Pernicieuse Anaemie und Eingeweidewürmer', in: *GTNI XXII*, 1882, pp. 97–116.

⁴⁵² Stammeshaus, Friedrich Wilhelm (1882): 'Over het Voorkomen van Anchylostomum Duodenale (Dochmius Duodenalis) in de Darmen van Beri-Beri en andere Lijken', in: *GTNI XXII*, pp. 117–125, here p. 122.

He cautiously concluded that the worms might explain some of the symptoms, but further causes had to be investigated, as he had found the same worm in patients' intestines who had not suffered from beriberi.⁴⁵³ In general, Erni's worm theory was – as opposed to miasmatic, dietary, or contagionist explanations of the aetiology of beriberi – not taken seriously by his peers. Fiebig, for example, heavily criticized Erni by accusing him of being ignorant of the writings of his Japan-based colleagues Heinrich Botho Scheube and Erwin Baelz, who had conducted “the first scientific pathological-anatomical investigations of beriberi with modern instruments”, as well as of ignoring the findings of “other coryphaei of our science” who had long refuted a parasitical aetiology.⁴⁵⁴

Despite the strong opposition Erni met regarding his worm theory on the aetiology of beriberi, he would remain a persistent anti-contagionist even after his return to Europe. In 1889, Erni contributed to a special issue of the German journal *Hygienische Tagesfragen* that was edited by the famous German localist and Koch-opponent Max von Pettenkofer and dedicated to cholera. In his article *Die Cholera in Indien*, Erni denounced the bacteriological theories on the aetiology of cholera that had been put forward by Robert Koch after the ‘discovery’ of the comma bacillus in 1883. Essentially, he raises three arguments against Koch: First, Koch had repeatedly failed to infect animals with the bacillus he had isolated. Second, Koch had claimed “that his cholera bacillus perishes remarkably quickly when it dries out”. This is however “in direct contrast to the experience in the [Dutch East] Indies”, where “cholera disappears precisely due to the rain and reappears in the dry season”. Third, while Koch regarded cholera as a contagious disease, Erni remembered “no single instance in which a doctor or a nurse in the Dutch East Indies fell ill after their contact with the patients”.⁴⁵⁵ Erni thus concluded that:

“In general, it can be asserted that all of Koch's theories about cholera in India are in direct contradiction with reality. On the other hand, the Indian doctor will completely agree with Cuningham and Pettenkofer that contagiousness cannot be assumed directly from cholera patients, and that cholera is bound to localities [...].”⁴⁵⁶

In the debate surrounding the aetiology of cholera between the German Robert Koch, on the one hand, and the British James Cuningham and the German Max von Pettenkofer, on the other, Erni clearly followed the latter's localist paradigm that strictly rejected a bacteriological cause

⁴⁵³ See *ibid.*

⁴⁵⁴ Fiebig, M. (1885): ‘Voorloopige Mededeeling omtrent de Oorzaken en het Wezen der Beri-Beri’, in: *GTNI XXIV*, pp. 223–243, here pp. 230f.

⁴⁵⁵ Erni-Greiffenberg, Heinrich: ‘Die Cholera in Indien’, in: *Hygienische Tagesfragen VII.*, 1890, pp. 59–80, here pp. 65–70.

⁴⁵⁶ *Ibid.*, p. 76.

underlying the cholera disease.⁴⁵⁷ In doing so, Erni was no exception. As a close reading of the publications of ‘medical mercenaries’ in the GTNI (and beyond) demonstrates, many were rather reluctant in accepting the bacteriological hypothesis of their Germanophone colleagues in the laboratories in Berlin, Amsterdam, and Tokyo. It would however be wrong to regard them as scientific amateurs blinded by colonial imaginaries proposing an inherent ‘otherness’ of tropical environments and diseases and basing their adherence to anti-contagionist explanations solely on instinct and pride. These ‘men on the spot’ were readily supported by the Dutch Colonial Army, diligent in their research methods, and eager to uncover the ‘truth’ about the aetiology of allegedly epidemic diseases threatening the military success in the tropics. Moreover, in the 1880s and 90s, the scientific ‘truth’ about diseases such as beriberi was far from being conclusively ‘proven’, and practitioners just as much competed in the transimperial race for the aetiology of disease as ‘armchair’ laboratory scientists.

The Practitioner’s Privilege

As has been demonstrated above, most ‘medical mercenaries’ researching diseases ‘on the spot’ in the tropics kept themselves up to date on the latest research results in the topical field of bacteriology. In arguing against the bacteriological paradigm, many believed they had a significant advantage over their white-coated colleagues in the metropolitan universities. First and foremost, “[t]he former remained practicing ‘physicians in the tropics’, rather than theoretical ‘tropical physicians.’ Clinical observation, instead of scientific, technological debate, came first.”⁴⁵⁸ Many ‘men on the spot’ thus claimed that it was precisely their ‘practical experience’ that granted them a privileged access to the true nature of diseases. In doing so, they attempted to directly capitalize on their first-hand experiences in the tropical Dutch East Indies. By discursively constructing a (false) dichotomy (see chapter 2.3.) between laboratory and field science in the late 19th century they attempted to uphold their scientific authority as experts on ‘tropical’ diseases. Other than laboratory scientists, they argued, they stood in regular contact with patients suffering from beriberi or cholera in supposedly pathogenic environments. In arguing against Robert Koch, Heinrich Erni wrote, for example:

⁴⁵⁷ On the debate between Robert Koch, James Cuninghame and Max von Pettenkofer, see Mann, ‘Kolonialismus in Zeiten der Cholera’; Ogawa, ‘Uneasy Bedfellows’.

⁴⁵⁸ Van Bergen, *Uncertainty, Anxiety, Frugality*, pp. 80f. Also see Worboys, Michael: ‘Germs, Malaria and the Invention of Mansonian Tropical Medicine. From “Diseases in the Tropics” to “Tropical Diseases”’, in: Arnold (ed), *Warm Climates and Western Medicine*, pp. 181–207.

“If Koch, after a six-month stay in India, sees the right to give a decisive opinion on the aetiology of cholera in India, then I believe that I too, after a seven-year stay there, may take the floor on this question, in order to shed light on the accuracy or inaccuracy of Koch’s doctrine on the basis of my own observations.”⁴⁵⁹

Erni here directly correlates the length of an individual researcher’s stay in the tropics with the accuracy of the research results. Accordingly, he claims that Koch had not spent enough time in India to conclusively prove his universal bacteriological hypothesis on the aetiology of cholera. Erni himself is confident that he, who had spent seven entire years in a tropical colony, most certainly had the right to speak on the issue of the aetiology of the cholera disease. He even goes as far as to state that his “observations on the course of cholera in [Dutch East] India compel me to doubt even such a celebrated authority as Professor Koch”. To this, however, he adds that such an undertaking is very “daring” “[i]n a time when faith in authority is as rampant as it is today”.⁴⁶⁰ Indeed, Erni had a tough standing in his competition against Robert Koch when he published his hypotheses on cholera in 1889. In the aftermath of Koch’s successful research expeditions to Alexandria and Calcutta in 1883/84, where he had identified important proves for the existence of the comma bacillus that he regarded as the main cause of cholera, the bacteriologist became a celebrated scientist in Germany, carrying the status of a national hero.⁴⁶¹

In general, the universal claims put forward by bacteriologists that detached diseases from their environmental and social contexts⁴⁶² severely threatened the scientific authority of medical practitioners in the tropics, who could previously distinguish themselves from their metropolitan colleagues by referring to their first-hand experiences in tropical environments. In an attempt to uphold their authority in medical discourse, many ‘men on the spot’ stood by the assertion that direct contact with tropical diseases and environments was an indispensable condition in medical research. In arguing against Dutch bacteriologist Van Ecke’s animal experiments, for example, Fiebig was convinced that

“he who knows how difficult it is to draw the line between physiological and abnormally strong [...] degeneration and who sees in a disease a clinical and pathological-anatomical overall picture, for him the proof that Van Ecke’s animals have suffered from beri-beri is not established.”⁴⁶³

⁴⁵⁹ Erni, ‘Die Cholera in Indien’, p. 59.

⁴⁶⁰ Ibid., p. 70.

⁴⁶¹ For Robert Koch’s transformation into a national hero, see Brock, *Robert Koch*, pp. 140–168 and 267–285; Howard-Jones, Norman (1984): ‘Robert Koch and the Cholera Vibrio. A Centenary’, in: *British Medical Journal* 288 (6414), pp. 379–381; Haddad, George (1999): ‘Medicine and the Culture of Commemoration: Representing Robert Koch’s Discovery of the Tubercle Bacillus’, in: *Osiris* 14, pp. 118–137.

⁴⁶² See Velvet, Arno (2019): ‘The Making of a Pastorian Empire. Tuberculosis and Bacteriological Technopolitics in French Colonialism and International Science, 1890-1940’, in: *Journal of Global History* 14 (2), pp. 199–217.

⁴⁶³ Fiebig, ‘Geschichte und Kritik’, 287f.

The rhetorical “he” that Fiebig constructs in his argument is, of course, the medical practitioner, who is presumably better trained to recognize the “overall picture” rather than focusing on microscopic particularities. He adds, rather ironically: “I deem myself authorized to make this judgement, although I am not a bacteriologist, but only a simple practitioner.”⁴⁶⁴ The Swiss physician Otto Gelpke was equally defensive towards laboratory scientists entering discourses surrounding diseases in the tropics. In 1879, he stated that “[e]ven if a few beriberi cases are known to have occurred outside barracks and prisons, it remains undisputed that in barracks, prisons, hospitals etc. [the main] hygeinic [sic!] mistakes are made.” The “solution” to the “beriberi question” is thus “a task for Indian and not European doctors”.⁴⁶⁵ Of course, Gelpke – himself an “Indian doctor” – had a self-interest in claiming a certain authority of physicians in the Indies in solving the beriberi problem. This becomes apparent in his dispute with Dr. Evert van Dieren, who had sent Gelpke his study on beriberi entitled *Beriberi een Rijstvergiftiging* (Beriberi, a rice poisoning) that contradicted Gelpke’s rotten-rice-theory. He accused van Dieren of never having been to the Dutch East Indies and only hearing about diseases in the tropics from textbooks. “He thinks”, Gelpke adds, “that one simply buys the grain on the market and then searches for the matching disease in an encyclopedia at home.”⁴⁶⁶

As we can see in the examples above, ‘medical mercenaries’ ‘on the spot’ did not willingly accept the authority laboratory bacteriologists asserted in the contestation surrounding diseases prevalent in the tropics. Rather, they claimed epistemic authority through their long-standing experiences with patients suffering from beriberi or cholera, which, according to them, could not be reproduced in the laboratories. Of course, in the increasingly racialized Dutch East Indies society at the turn of the twentieth century, there were clear boundaries as to who could claim this kind of epistemic authority. The professionalization of the medical sciences towards the end of the nineteenth century as well as the alleged universal validity of the bacteriological paradigm also meant that indigenous medical traditions became largely stigmatized. Javanese herbal medicine (or *jamu*) and Chinese medicine were increasingly deemed ‘superstitious’ and ineffective by European medical experts towards the end of the nineteenth century.⁴⁶⁷ This had not always been the case: In 1829, German medical officer F.A.C. Waitz published a booklet entitled *Praktische Beobachtungen über einige javanische Arzneimittel* (Practical Observations

⁴⁶⁴ Ibid., p. 288.

⁴⁶⁵ Gelpke, ‘Ein Beitrag zur Bestreitung der Beriberi’, pp. 152f.

⁴⁶⁶ Gelpke, Otto (1898): ‘Ueber die Aetiologie der Beri-Beri. Gelpke contra van Dieren’, in: *GTNI XXXVII*, pp. 108–114, here p. 111.

⁴⁶⁷ See Pols, Hans (2009): ‘European Physicians and Botanists, Indigenous Herbal Medicine in the Dutch East Indies, and Colonial Networks of Mediation’, in: *East Asian Science, Technology and Society* 3 (2/3), pp. 173–208.

on some Javanese Medicines), in which he highlighted the healing properties of certain plants in the Dutch East Indies.⁴⁶⁸ It is highly likely that Waitz acquired his knowledge on Javanese herbal medicine from (both male and female) local *dukun*, traditional healers who are still highly popular in Indonesian society today.⁴⁶⁹

Lastly, even European-trained Javanese physicians were largely excluded from the ‘modern’ scientific European medical community. As has been convincingly argued by historian Hans Pols, “[t]o Indies physicians, the egalitarian nature of the imagined cosmopolitan medical profession provided a distinct contrast to the realities of colonial life, where racial and ethnic distinctions were paramount and educational accomplishment signified little, despite repeated promises to the contrary”.⁴⁷⁰ Numerous Indonesian physicians, such as Mas Wahidin Sudirohusodo, Mas Gondo Soewarno, or Abdul Rivai, grew increasingly frustrated with their in-between position as Western-educated men, who were yet subordinate to their European colleagues in the colonial hierarchy of the late nineteenth and early twentieth century. Indonesian physicians would become key figures in the foundation of the nationalist organization Budi Utomo, which propagated the ‘modernization’ of Indonesian education, technology, and medicine, and which intended to transform Indonesia from a ‘backwards society’ into a ‘modern’, ‘civilized’, and – eventually – independent nation state.⁴⁷¹ In the late nineteenth century, however, the struggle for scientific authority and modernity in Germanophone medical discourse was largely reserved for white, European men as well as (male) individuals from ‘modern’, independent, and Germanophile Meiji Japan.

⁴⁶⁸ See Waitz, F.A.C.: *Praktische Beobachtungen über einige javanische Arzneimittel*, Leipzig: F.A. Brockhaus 1829.

⁴⁶⁹ On the history of indigenous medical practitioners in the Dutch East Indies see Hesselink, Liesbeth: *Healers on the Colonial Market. Native Doctors and Midwives in the Dutch East Indies*, Leiden: KITLV Press, 2011.

⁴⁷⁰ Pols, Hans: *Nurturing Indonesia. Medicine and Decolonisation in the Dutch East Indies*, Cambridge: Cambridge University Press 2018, p. 10.

⁴⁷¹ See *ibid.*, in particular pp. 21–43 and Anderson, Warwick/Pols, Hans (2012): ‘Scientific Patriotism. Medical Science and National Self-Fashioning in Southeast Asia’, in: *Comparative Studies in Society and History* 54 (1), pp. 93–113.

3.3 Contingent Categories: Colonial Ideology and Bacteriological Knowledge

Since Helen Tilley declared “Africa” a “Living Laboratory”, historians of medicine have increasingly begun to explore the significance of colonial field research as well as the study of colonized bodies in the making of modern medicine.⁴⁷² As it seems, bacteriology’s promise that the existence of universally occurring pathogenic microorganisms rendered research outside of the contained space of experimental laboratories obsolete did not hold up. This subchapter aims at illuminating the contingent relationship between research in the colonial field and metropolitan laboratory bacteriology. On the one hand, I demonstrate how ‘medical mercenaries’ in the Dutch East Indies, despite their assertion that their main advantage lay in observation and practical experience, too, followed established methodologies of modern, laboratory medicine: they dissected deceased indigenous patients, kept detailed logbooks and statistics on the spread of epidemics, and attempted to microscopically prove the existence of the various causes they proposed for diseases in the colonies. On the other hand, bacteriologists, too, relied on field research in the ‘colonial laboratory’. Consequently, as has been argued by the historian Pratik Chakrabarti, bacteriologists linked their microbiological findings to earlier notions of climatic and environmental determinism, and “thereby also proposed an apparently paradoxical thesis of germs and geography”.⁴⁷³ As I will argue, this resulted in the fact that colonial ideology, and most importantly ‘race’, continued to be an important marker of distinction in researching the human body and its predisposition to disease, despite the subdiscipline’s claims to universalism.

Between the Field and the Laboratory

The institutionalization of the laboratory as a site of experimental research in Europe dates to the early 19th century. An important landmark was the laboratory established by the German chemist Justus Liebig at the University of Giessen in 1825. Students from all over Europe would flock to Giessen to study under Liebig’s guidance. In the course of the century, more and more disciplines such as physics, physiology, or biology would follow the ‘German model’ and

⁴⁷² See Tilley, Helen: *Africa as a Living Laboratory. Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*, Chicago: University of Chicago Press 2011.

⁴⁷³ Chakrabarti, *Bacteriology in British India*, p. 9.

included isolated, experimental research in their methodological repertoire.⁴⁷⁴ The first medical laboratories emerged across Europe in the 1840s and 1850s.⁴⁷⁵ In the German States and Empire, the establishment of the medical laboratory was, as has been argued by the historian Timothy Lenoir, closely tied to growing self-consciousness of the German bourgeoisie and its self-proclaimed role in public life as well as the institutionalization of medicine as a specialized, scientific discipline.⁴⁷⁶

The establishment of laboratories in the colonies occurred with a slight delay. Following concerns about the efficiency of the British Indian Army and the poor state of health care in colonial South Asia lamented by British residents as well as parts of the Indian elites in the 1880s, the British government established a variety of medical research institutions such as the Imperial Bacteriological Laboratory at Poona in 1890, followed by the bacteriological Laboratory at Agra (1892), the Plague Research Laboratory in Bombay (1896), and various others.⁴⁷⁷ In the Dutch East Indies, the institutionalization of bacteriological research took off in 1888 with the foundation of the *Geneeskundig Laboratorium* (Central Laboratory for Public Health Laboratory Service) in Batavia (Jakarta) that was renamed to Eijkman institute in 1938. In 1890, the Dutch East Indies' government founded the *Parc Vaccinogen Instituut Pasteur* (Pasteur Vaccination Institute) whose aim was to guarantee the constant production of vaccines.⁴⁷⁸ The military monopoly on health care in the late 19th century could also be felt in these seemingly 'neutral' civil institutions. The leading posts in civil medical institutions and laboratories (such as the Pasteur Institute, the *dokter djawa school*, or the medical laboratory in Jakarta) were filled by medical officers.⁴⁷⁹ Moreover, considering the late institutionalization

⁴⁷⁴ There is an extensive body of literature on the history of the institutionalization of the laboratory in the 19th century. Good overviews are Cunningham/Williams (eds): *The Laboratory Revolution in Medicine*; Galison, Peter/Jones, Caroline: 'Factory, Laboratory, Studio. Dispersing Sites of Production', in: Galison, Peter/Thompson, Emily (eds): *The Architecture of Science*, Cambridge: MIT Press 1999, pp. 497–540; Lenoir, Timothy: *Instituting Science. The Cultural Production of Scientific Disciplines*, Stanford: Stanford University Press 1997; Shapin, Steven/Schaffer, Simon: *Leviathan and the Air Pump: Hobbes, Boyle, and the Experimental Life*, Princeton: Princeton University Press 2018.

⁴⁷⁵ See Büttner, J. (1992): 'The Origin of Clinical Laboratories', in: *European Journal of Clinical Chemistry and Clinical Biochemistry* 30 (10), pp. 585–593; Bonah, Christian: *Instruire, Guérir, Server. Formation, Recherche et Pratique Médicales en France et en Allemagne Pendant la Deuxième Moitié du XIXe Siècle*, Strasbourg: Presses Universitaires de Strasbourg 2000.

⁴⁷⁶ See Lenoir, Timothy: 'Laboratories, Medicine and Public Life in Germany 1830-1849. Ideological Roots of the Institutional Revolution', in: Cunningham/Williams (eds): *The Laboratory Revolution in Medicine*, pp. 14–71.

⁴⁷⁷ See Chakrabarti, Pratik (2010): 'Beasts of Burden: Animals and Laboratory Research in Colonial India', in: *History of Science* 48 (1), pp. 125–152; Chakrabarti, *Bacteriology in British India*, pp. 25–60; Gruha, Sumit (1993): 'Nutrition, Sanitation, Hygiene, and the Likelihood of Death. The British Army in India c. 1870-1920', in: *Population Studies* 47 (2), pp. 385–401, here pp. 395–399.

⁴⁷⁸ See Akbar, Maulana/Handayani, Tri (2021): 'Science and Technology Development in Dutch East Indies', in: *Indonesian Historical Studies* 5 (2), pp. 115–133, here p. 126. For laboratory biology in the Dutch colonies see Wille, Robert-Jan: *De Stationisten. Laboratoriumbiologie, Imperialisme en de Lobby voor Nationale Wetenschapspolitiek 1871-1909*, PhD thesis, Radboud Universiteit Nijmegen, Nijmegen 2015.

⁴⁷⁹ See Hesselink, *Healers on the Colonial Market*, p. 270.

of laboratories in the colonies, for most of the 19th century, hospitals, prisons, and military garrisons were the main sites of medical research. This granted medical officers direct access to the bodies of disease-inflicted patients for research purposes, with, taking into account the class and racial hierarchies in the colonial social order (see chapter 2), little moral concerns.

To physicians in the tropics, “there were no clear demarcations between the tropical environment and the laboratory”.⁴⁸⁰ This becomes evident in the way the medical officer Heinrich Erni argues in favor of the research conditions he encountered as a medical officer in Aceh:

“Cholera did not progress regularly from one post to another, but skipped one here and there, only to return to it much later. This very remarkable phenomenon, which can be observed so clearly in the peculiar distribution of the Dutch military posts, which are in uninterrupted mutual communication, as if created for the experiment, must convince everyone that the disposition of the locality plays a major role in the possibility of the emergence of an epidemic [...]”.⁴⁸¹

As Erni makes clear here, he regards the military camps in Aceh as “laboratories” of some sort, which offer ideal conditions for the “experimental” study of the spread of diseases. It might very well be that Erni strategically adapts the language of bacteriologists in an attempt to enhance the scientificity of his refutation of Koch’s bacteriological hypotheses on the aetiology of cholera. It would, however, be wrong to regard his appropriation of the methodological repertoire of bacteriologists as a mere discursive strategy to claim scientific authority. While being posted in the hospital in Kota Radja, he experimented with different treatments to cure beriberi. For this purpose, Erni kept a logbook on some of the patients with detailed accounts on the different medications he tested on them. He mentions, for example, the case of “Wongsodrono, a Javanese soldier, 31 years old, who had stayed in Atjeh for 5 years, without ever having seriously fallen ill.” Wongsodrono, who had suddenly fallen ill with beriberi, could effectively be treated with quinine and santonin.⁴⁸² The same goes for Djopopawiro, “a Javanese soldier, 26 years old, who had recently come to Atjeh and rapidly fell ill with beriberi”, whose symptoms also disappeared after Erni prescribed him quinine and santonin.⁴⁸³ In addition to testing different treatments on his patients, he would also examine their faeces where he claimed to have found the worm that allegedly caused beriberi.⁴⁸⁴

⁴⁸⁰ Chakrabarti *Bacteriology in British India*, p. 3. For the plurality of epistemologies in tropical colonies in the age of the ‘laboratory revolution’ also see Tilley, *Africa as a Living Laboratory*.

⁴⁸¹ Erni, ‘Die Cholera in Indien’, p. 62.

⁴⁸² Erni, ‘Beri-Beri’, p. 99.

⁴⁸³ *Ibid.*, p. 102.

⁴⁸⁴ See *ibid.*, p. 104.

Erni was not alone in experimenting on living patients and their bodily fluids during his post as a medical officer. In support of his argument that beriberi had to be considered as a miasmatic-contagious disease, the German Friedrich Joseph Max Fiebig had allegedly microscopically examined the blood of dozens of Javanese and Malay patients in the hospital in Onrust.⁴⁸⁵ Fiebig, too, meticulously monitored the development of his patients' symptoms. "Ronosemito, forced laborer no. 3387, Javanese, 25 to 30 years old" came under his care on January 30, 1884, due to being "infected" with beriberi. The microscopic examination of Ronosemito's urine revealed the presence of "many very large lymphoid cells, which often contain 2-5 large, colorless, shiny micrococci; here and there micrococci clumps of 4 to 6 [pieces] swim in the fluid."⁴⁸⁶

As the accounts cited above suggest, the experiments and microscopic investigations were mainly conducted on Javanese (and other "native") soldiers rather than European patients. This points to the inherently racialized dimension of medical research conducted in the colonies as it has been described by a growing number of historians of colonial medicine.⁴⁸⁷ Being practitioners, 'medical mercenaries' had privileged access to colonized bodies, and in some instances, this even included the corpses of deceased, indigenous patients. After the Javanese forced laborer Ronosemito had passed, Fiebig dissected his body. He wasted no time while waiting to be granted access to the corpse, using the spare time for further microscopic investigations:

"Prediction of section 17 hours after death. The interval was used for the microscopic examination of the dead muscle and blood. The latter, examined 2 1/2 hours after death, shows the following: the red corpuscles have a very irregular shape; between them one sees a shiny, granular substance and numerous single and heaped micrococci."⁴⁸⁸

Both the microscopic investigations of Ronosemito's blood as well as the dissections Fiebig conducted displayed evidence of the presence of various micrococci, which the medical officer regarded as sufficient proof for his hypothesis on the miasmatic-contagionist nature of beriberi.⁴⁸⁹ The Swiss medical officer Otto Gelpke, too, based his theory proposing a dietary

⁴⁸⁵ See Fiebig, "Voorloopige Mededeeling", pp. 223–243.

⁴⁸⁶ Ibid., pp. 224f.

⁴⁸⁷ For the racialized dimension of medical research and experimentation in the colonial field see Chatterjee, 'Healing the Body', pp. 549–551; Schiebinger, Londa: *Secret Cures of Slaves. People, Plants, and Medicine in the Eighteenth-Century Atlantic World*, Stanford: Stanford University Press 2017, pp. 45–64; Tilley, Helen (2016): 'Medicine, Empires, and Ethics in Colonial Africa', in: *AMA Journal of Ethics* 18 (7), pp. 743–753; Arnold, David: *Colonizing the Body. State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press 1993; Washington, Harriet: *Medical Apartheid. The Dark History of Medical Experimentation on Black Americans from Colonial Times to the Present*, New York: Anchor 2008.

⁴⁸⁸ Fiebig, 'Voorloopige Mededeeling', p. 228.

⁴⁸⁹ See ibid., pp. 226–228.

nature of the aetiology of beriberi on dissections he performed on deceased patients in Aceh in 1879 as well as on examinations of convicts in Batavia who would later be transferred to Aceh as forced laborers.⁴⁹⁰ “I have performed many dissections of beriberi corpses,” he wrote, “and the first thing I noticed is a very developed and long-lasting rigor mortis.”⁴⁹¹ In much detail, he describes opening the chest of his former patients, cutting open their hearts, and examining their blood vessels. He expresses his conviction that further dissections, paired with microscopic investigations of patients’ blood, will lead to promising results.⁴⁹² Gelpke’s compatriot Heinrich Erni also closely investigated the bodies of deceased patients in his search for hook worms. In 1882, he dissected the bodies of 4 indigenous men, the aforementioned Javanese soldier Wongsodrono and 3 Javanese convicts. He found that:

“The *appendix* is the most severely affected; *there is not a healthy spot left on the entire mucous membrane*, the small red ulcers are found everywhere. The upper part of the large intestine is also still affected, but the frequency of ulcers decreases considerably and increases towards the bottom. Corresponding to these damages, one finds an *intestinal worm*. In the small intestine, about 1 foot above the appendix, a small worm adheres to the mucous membrane, which moves briskly and is so firmly attached that it cannot be washed away by a stream of water; numerous punctiform sores are found around it. In the coecum there are at least 20 worms of the same kind, which are arranged in tangles like snakes.”⁴⁹³

Erni claims to have found worms in all four dissected patients who had passed from beriberi, which to him proves the parasitological cause of the disease.⁴⁹⁴ In the research publications authored by ‘medical mercenaries’, there is no evidence of resistance they met in being granted access to indigenous corpses for dissection. Only the Austrian medical officer Heinrich Breitenstein explicitly mentions potential difficulties in dissecting indigenous bodies by stating that “in the Dutch-Indian army, half of whose corps consists of Mohammedan soldiers, no dissections are to be performed on native soldiers due to religious reasons with the exception that his family or comrades explicitly give their permission.” After the passing of one of his Ambonese patients, Breitenstein thus recounts:

“After the death of this patient, I sent for his wife and told her that I personally did not believe that her husband had died of poisoning, but that I could only state the true cause of death if I could at least open the abdominal cavity and in this way examine the abdominal contents. She immediately asked me to do so, and the autopsy confirmed the diagnosis *in vivo*: cancer [...].”⁴⁹⁵

⁴⁹⁰ See Gelpke, ‘Beri-Beri’, pp. 262–270.

⁴⁹¹ *Ibid.*, p. 261.

⁴⁹² *Ibid.*, pp. 263–269.

⁴⁹³ Erni, ‘Beri-Beri’, p. 108.

⁴⁹⁴ See *Ibid.*, pp. 97–116.

⁴⁹⁵ Breitenstein, Sumatra, pp. 97f.

Again, in mentioning having to ask for permission for the dissection of a “native” patient, Breitenstein seems to have been the exception. It might very well be that the Dutch colonial government simply did not monitor whether permission had been granted or not, in particular if the dissected patients were convicts or stemmed from neighboring islands such as Java, with their families being out of sight. What can be stated with certainty is that ‘medical mercenaries’ had access to the racialized bodies of colonized patients. This enabled them to fuel their hypotheses on the aetiology of diseases such as beriberi with empirical evidence according to the state-of-the-art scientific standards of their time – microscopic investigations, dissections, and medical experiments.

Bacteriology, Colonial Ideology and Race

Just as much as medical practitioners conducted experimental investigations, late 19th century scientists engaged in experimental, medical research were not confined to the laboratory alone. Indeed, as has been stated by the historian Christoph Gradman, traveling was an integral part to “applied sciences” such as hygiene or bacteriology. The history of the “laboratory revolution” has, however, falsely mostly been written as a history of a “revolution in the laboratory”. The fact that Robert Koch himself travelled to Egypt (1883) and Calcutta (1884) to isolate the bacterium responsible for cholera in itself points to the importance of overseas journeys in early bacteriological research.⁴⁹⁶ Meanwhile, in terms of methodology, early bacteriological research was much messier than retrospective narrations of the discipline would suggest. This just as much applies to the postulates ascribed to Robert Koch that were to be met to prove the bacterial aetiology of a disease, namely 1) the identification of bacteria in infected patients, 2) the isolation and cultivation of said bacteria, and 3) the successful infection of patients with isolated bacteria. Rather, historians of bacteriology have pointed to the

⁴⁹⁶ See Gradmann, Christoph (2003): ‘Das reisende Labor. Robert Koch erforscht die Cholera 1883/84’, in: *Medizinhistorisches Journal* 38 (1), pp. 35–56. For international cholera research in Egypt also see Boyle, Stephanie Anne (2015): ‘Cholera, Colonialism, and Pilgrimage. Exploring Global/Local Exchange in the Central Egyptian Delta, 1848-1907’, in: *Journal of World History* 26 (3), pp. 581–604; Huber, Valeska (2020): ‘Pandemics and the Politics of Difference. Rewriting the History of Internationalism through Nineteenth-Century Cholera’, in: *Journal of Global History* 15 (3), pp. 394–407; Rose, Christopher (2023): ‘Trial by Virus. Colonial Medicine and the 1883 Cholera in Egypt’, in: *Journal of Colonialism and Colonial History* 24 (1), online, DOI: [doi:10.1353/cch.2023.0005](https://doi.org/10.1353/cch.2023.0005). For British India see Arnold, David (1986): ‘Cholera and Colonialism in British India’, in: *Past & Present* 113, pp. 118–151; Watts, Sheldon (2001): ‘From Rapid Change to Stasis. Official Responses to Cholera in British-Ruled India and Egypt’, in: *Journal of World History* 12 (2), pp. 321–374.

historicity of Koch's postulate and their refutation, transformation, and adaption over time.⁴⁹⁷ The infection of animals with isolated bacteria, in particular, repeatedly failed in practice. After it had been declared that animals were unsuitable for experimentation with potential cures against sleeping sickness in the laboratories in Berlin, for example, Koch travelled to German East Africa and Togo between 1906 and 1913. In Africa, he conducted dangerous experiments on African patients, turning colonized bodies into objects of study and the colonies themselves into field laboratories.⁴⁹⁸

At the same time, historians have observed a merger of the “germ theory of disease” and the “gene theory of disease” (most importantly through the rediscovery of Mendel's law of heredity in medicine) in bacteriology at the turn of the 20th century.⁴⁹⁹ In the context of the racial hygiene movement in Germany and Britain, infectious diseases were increasingly regarded as social issues, as a consequence of which the spread of infectious diseases became linked to the movement of certain human ‘races’.⁵⁰⁰ Moreover, in the context of the medicalization of racial heredity the concept of “immunity” was increasingly evoked by medical researchers to postulate differences between distinct human “races” in terms of their susceptibility to infectious diseases.⁵⁰¹ In the aftermath of the European ‘Scramble for Africa’ a special concern was the question as to whether it was possible for the ‘white race’ to permanently settle in tropical colonies.⁵⁰² In an attempt to respond to the possibility of white settlement in the tropics, on February 14, 1908, Robert Koch gave a talk in front of the German Reich Health Council (*Reichsgesundheitsrat*) on the question: “To what extent is the white race capable of permanently colonizing tropical regions and reproducing there, without harming its own nature

⁴⁹⁷ See Gradmann, Christoph (2008): ‘Alles eine Frage der Methode: Zur Historizität der Kochschen Postulate 1840-2000’, in: *Medizinhistorisches Journal* 43 (2), pp. 121–148; Ogawa, ‘Uneasy Bedfellows’.

⁴⁹⁸ See Eckart, ‘The Colony as Laboratory’.

⁴⁹⁹ See Teicher, Amir (2020): ‘Medical Bacteriology and Medical Genetics, 1880-1940. A Call for Synthesis’, in: *Medical History* 64 (3), pp. 325–354; Worboys, Michael ‘From Heredity to Infection: Tuberculosis, 1870-1890’, in: Gaudillière, Jean-Paul/Löwy, Ilana (eds): *Heredity and Infection. The History of Disease Transmission*, London: Routledge 2003, pp. 81–100.

⁵⁰⁰ See Weindling, Paul: ‘Ansteckungsherde. Die deutsche Bakteriologie als wissenschaftlicher Rassismus 1890-1920’ in: Sarasin, Philipp et al. (eds): *Bakteriologie und Moderne. Studien zur Biopolitik des Unsichtbaren 1870-1920*, Frankfurt am Main: Suhrkamp 2007, pp. 354–374; Worboys, Michael: ‘Tuberculosis and Race in Britain and its Empire, 1900-1950’, in: Ernst, Waltraud/Harris, Bernard: *Race, Science and Medicine, 1700-1960*, London: Routledge 1999, pp. 144–166; Bashford, Alison: *Imperial Hygiene. A Critical History of Colonialism, Nationalism and Public Health*, Basingstoke: Palgrave Macmillan 2005, pp. 137–163.

⁵⁰¹ See Besser, Stephan: *Pathographie der Tropen. Literatur, Medizin und Kolonialismus um 1900*, Würzburg: Königshausen & Neumann 2013, pp. 189–205.

⁵⁰² See Bashford, “‘Is White Australia possible?’”; Downs, *Maladies of Empire*, pp. 122–136; Espinosa, Mariola (2014): ‘The Question of Racial Immunity to Yellow Fever in History and Historiography’, in: *Social Science History* 38 (3/4), pp. 437–453; Baucher, Manuela (2015): ‘Race, Class or Culture? The Construction of the European in Colonial Malaria Control’, in: *Comparativ* 25 (5/6), pp. 116–136; Anderson, *Colonial Pathologies*, pp. 207–226.

and health?”⁵⁰³ Among others, Koch shared his observations from Transvaal, where “European settlers have been residing for a long time without compromising their [racial] peculiarity and health, they have not lost their ability to reproduce nor have they formed a mixed race in the course of time.” Koch believes that the tropical highlands, where one might find fewer mosquitoes, better hygienic conditions, and a temperate climate, allow for healthy white settlements. He concludes that

“So far there is nothing to prevent the white race from existing and reproducing permanently on the high plateau of Africa at altitudes of 3000-4000 feet (1000 m and above) without impairing its character and health. This judgement applies primarily to German East Africa and should only include South West Africa in so far as its climatic conditions correspond to those of Transvaal.”⁵⁰⁴

By highlighting the “healthy” climates in the African highlands for the white race, Koch thus merged the bacteriological paradigm with climatic determinism and racial hygiene typical to colonial medical ideology. Moreover, in his talk for the German Reich Health Council, Koch explicitly puts his research into the service of German colonial ambitions on the African continent by assessing the possibility of white settlements in German colonial territories.

Already 10 years before Koch’s talk, the German physician and former ‘medical mercenary’ in Dutch services Karl Däubler argued along similar lines. Däubler had joined the KNIL in 1878 to serve in Aceh, completing the full 5 years of contractually mandatory service.⁵⁰⁵ In 1895, he published a handbook carrying the title *Grundzüge der Tropenhygiene* (Fundamentals of Tropical Hygiene) with the Berlin-based publishing house Otto Enslin. The book seemed to have been quite widely received, which is indicated by the fact that, in 1900, the publishing house launched a second edition. In the preface, Däubler defines his target audience as “the prospective colonial physician [...] who shall not enter into a realm of work that essentially differs from previous [Western] ones.”⁵⁰⁶ On the one hand, the findings described in the handbook are based on his own bacteriological laboratory research that he had most likely conducted at the medical faculty of the Ludwig Maximilian University in Munich. In the preface, Däubler explicitly mentions the generous support he had received from the Munich-based laboratory medical researchers Professor Dr. von Voit, Professor Dr. Kupfer, and Dr. Cremer. On the other hand, Däubler refers to his experiences as a practitioner in the Dutch East

⁵⁰³ Koch, Robert (1908) ‘Ansiedlungsfähigkeit der weissen Rasse in den Tropen’, in: *Gesammelte Werke Robert Kochs* 2,2, Robert Koch Institut, pp. 959–963, here p. 959.

⁵⁰⁴ *Ibid.*, p. 961.

⁵⁰⁵ See Nationaal Archief Den Haag (NL-HaNA), Inventaris van het Archief van het Ministerie van Koloniën, Stamboeken en Pensioenregisters van Militairen KNIL in Oost- en West-Indië, 1815-1949 (1954), nummer toegang 2.10.50, inv. nr. 11, folio 2786.

⁵⁰⁶ Däubler, Karl: ‘preface’ in: *Grundzüge der Tropenhygiene*, Berlin: Verlag von Otto Enslin 1900, n.p.

Indies, thanking his former colleagues for “providing him with material for his research” after he had ended his service.⁵⁰⁷ The first half of the book is dedicated to tropical hygiene and mainly contains practical advice on climate, humidity, drinking water, or appropriate clothing in the tropics. The second, more theoretical part covers so-called tropical pathology and opens with general reflections on diseases in the tropics as well as the subfield racial pathology. Comparing the pathogenic particularities in Europe and in the tropics, he wrote:

“A disease [in the tropics] often differs from its counterpart in Europe by its higher or lower malignity for different races as well as by differences in its progression. Thus we observe in the tropics that typhus abdominalis, introduced from Europe, shows a different distribution than in Europe, where it is ubiquitous. In the tropics, it sticks to places where Europeans live. Natives are rarely affected and survive the disease more easily.”⁵⁰⁸

As his comparison between the tropics and the temperate zones implies, Däubler, despite being a convinced bacteriologist/parasitologist, stresses the importance of locality in the spread of contagious diseases. Furthermore, he proposes hereditary differences in the susceptibility to diseases between different “races”. His racialized notions of diseases and the human body become even clearer in his views on immunity. Other than “native children who develop a certain immunity against malaria in their early youth”, he writes, Europeans born in the tropics remain at high risk to the fatal disease.⁵⁰⁹ Däubler continues by giving detailed accounts on the racial differences (“Rassenunterschiede”) between the “white” and the “colored” races. He claims, for example, “that the size of the red blood cells is not the same in n*⁵¹⁰ and whites.”⁵¹¹ In the case of beriberi, too, he claims that “colored people [Farbige] incline more [to contract it] than white people. In the [Dutch East] Indies”, Däubler adds, “beriberi was considered a native disease until the early 1870s. Even though European started to contract it in Atjeh in 1883, the ratio between [infected] colored and white people remained very unequal.”⁵¹² With little nuance or differentiation, Däubler hence summarizes the indigenous inhabitants of tropical regions around the globe under the term “colored peoples” whose racial susceptibility to diseases he juxtaposes with white Europeans. He concluded that:

“It is therefore hygiene which, in relation to the conditions outlined here, must demand the scientific proof of the pathology of the lower races and their relationship to that of the whites. This is still a large field of

⁵⁰⁷ Ibid.

⁵⁰⁸ Ibid., p. 129.

⁵⁰⁹ Ibid., p. 130.

⁵¹⁰ To avoid unnecessarily reproducing racist terminology, the word n*, used as a derogatory term targeting Black people in historical source material, is not spelled out. This practice is described, for example, in Purtschert, Patricia: *Kolonialität und Geschlecht im 20. Jahrhundert. Eine Geschichte der weissen Schweiz*, Bielefeld: Transcript 2019, p. 79.

⁵¹¹ Däubler, *Grundzüge der Tropenhygiene*, p. 131.

⁵¹² Ibid., p. 132.

research that has barely been worked on, the knowledge of which seems however absolutely necessary for any serious colonization.”

Däubler’s emphasis on the urgency of the scientific investigation of racial pathology implicitly highlights the political stakes attached to racial hygiene: If the German Empire was serious about colonizing the African continent and establishing white settlements, it must consider the racial differences between white and “colored” people with regard to their hereditary immunity to diseases prevalent in the tropics. At the same time, Däubler’s *Grundzüge der Tropenhygiene* demonstrates on a small scale how knowledge acquired by ‘medical mercenaries’ in Dutch services in the 1870s was made useful for German colonial efforts on the African continent after 1884, and how this knowledge was adapted and transformed at the turn of the 20th century with the growing influence of (racial) hygiene (see also chapter 4).

3.4 Europe in the Tropics – the Tropics in Europe

Environmental determinism in colonial medicine did not only shape perceptions of colonized and white bodies and their ‘fitness to survive’ in the tropics. The notion that diseases were tied to local conditions simultaneously influenced the ways European physicians perceived the pathogenicity (or lack thereof) of Europe itself. With that in mind, this last section briefly digresses into the repercussions of colonial medicine and environmental determinism within Germanophone Europe. It does so by shedding light on the ways in which the experiences in the colonial field shaped and shifted how ‘medical mercenaries’ perceived the environments of their own home countries after they returned to Europe for good.

In an attempt to capitalize on the proposed inherent difference between the tropical climate and the temperate zones in Europe, and after having ended their service with the KNIL, the Swiss medical officer Heinrich Erni and the Austrian medical officer Heinrich Breitenstein opened *Kurpraxen* (curative medical or spa clinics) in their respective home countries that they advertised to patients recovering from tropical diseases in Europe. Thereby, they followed a wide-spread practice in European colonial health care, that suggested that patients recovering from diseases such as cholera or tuberculosis were to be relocated to cooler climates. For this purpose, the British, French, and Dutch colonial governments established so-called “hill stations” in the highlands of their tropical colonies in Asia, Africa, and the Caribbean, where the temperatures tended to be more moderate. Moreover, the mountainous landscape and the mostly European architecture surrounding such stations evoked memories of Europe, which were a welcome change from the tropical lowlands and the ‘foreign’ cultures perceived as diametrically ‘other’.⁵¹³ If staying at a hill station did not significantly improve Europeans’ health, they would be sent to Europe for full recovery.

⁵¹³ See Bhattacharya, *Contagion and Enclaves*, pp. 18–52; Veracini, Lorenzo: ‘The Imagined Geographies of Settler Colonialism’, in: Mar, Racey Banivanua/Edmonds, Penelope (eds): *Making Settler Colonial Space. Perspectives on Race, Place and Identity*, London: Palgrave Macmillan 2010, pp. 179–197; Kenny, Judith T. (1995): ‘Climate, Race, and Imperial Authority: The Symbolic Landscape of the British Hill Station in India’, in: *Annals of the Association of American Geographers* 85 (4), pp. 694–714; Bhattacharya, Nandini: ‘Imperial Sanctuaries. The Hill Stations of Colonial South Asia’, in: Fischer-Tiné, Harald/Framke, Maria (eds): *Routledge Handbook of the History of Colonialism in South Asia*, London: Routledge 2021, pp. 319–330; Jennings, Eric ‘Hill Stations, Spas, Clubs, Safaris and Colonial Life’, in: Aldrich, Robert/McKenzie, Kirsten (eds): *The Routledge History of Western Empires*, London: Routledge 2013, pp. 346–361; Lowrie, Claire (2023) ‘Chinese Elites, Hill Stations and Contested Racial Discrimination in Interwar Colonial Malaya and the Philippines’, in: *Journal of Historical Geography* 79, pp. 52–64; Pomfret, David: “‘Beyond Risk of Contagion’. Childhood, Hill Stations, and the Planning of British and French Colonial Cities’, in: Peckham, Robert/Pomfret, David: *Imperial Contagions. Medicine, Hygiene, and Cultures of Planning in Asia*, Hong Kong: Hong Kong University Press 2013, pp. 81–104; Reed, Robert (1979): ‘The Colonial Genesis of Hill Stations. The Genting Exception’, in: *Geographical Review* 69 (4), pp. 463–468; Coleborne, Catharine/McCarthy, Angela (2012): ‘Health and Place in Historical

In the fall of 1897, after having fallen ill in the Dutch East Indies, Heinrich Breitenstein himself underwent curative treatments in Karlsbad, a small town in today's Czech Republic, then part of the Habsburg Empire, that had been a popular spa destination since the early 19th century.⁵¹⁴ In Karlsbad, he claimed to have “found so much relief for his stomach ailments.” Breitenstein was so convinced of the healing properties of the town's hot springs that he let himself be honorably discharged from the KNIL to settle in Karlsbad.⁵¹⁵ He would go on to open his own *Kurpraxis* (spa clinic) in 1898 that he advertised in the Dutch and Indies press, always referring to the fact that he had previously served the KNIL as a first-class medical officer.⁵¹⁶ In an extensive article published in the *Sumatra Post* in 1904, Breitenstein praises the various perks of Karlsbad for patients recovering from diseases in the tropics. “Hundreds and hundreds of sick civil servants, officers and private citizens go on leave to Europe every year,” he writes, “because despite the excellent medical treatment [in the Indies], they cannot recover in the tropical climate [...]. And they long with ‘Sehnsucht’ [yearning] for the moment when they enter European soil and expect to be relieved of their suffering immediately.” He would however add that, among Europeans seeking to recover in Europe, “disappointments often occur.” According to Breitenstein, there is nevertheless reason for hope: “Most of them often need months to regain their full health and regain new strength for the future, although they can get rid of all these ailments much faster and more pleasantly in the world-famous Karlsbad spa.” He then goes on to describe in meticulous detail the various environmental qualities of Karlsbad, in particular the local water that can be drunk or bathed in and has “been the subject of chemical research by professionals” that “provides the main basis for assessing the success of Karlsbad water and its influence on healthy and sick people.” These water-based treatments had been so effective, he claims, that “[o]ver the last ten years, the number of spa guests has increased by an average of 2,000 annually, which proves that Karlsbad is a serious spa and that its reputation is based on the healing power of its springs and other therapeutical

Perspective. Medicine, Ethnicity, and Colonial Identities’, in: *Health and History 14 (1)*, pp. 1–11; Arnold, David (2004): ‘Race, Place, and Bodily Difference in Early Nineteenth-Century India, in: *Historical Research 77 (196)*, pp. 254–273; Kennedy, Dane: *The Magic Mountains. Hill Stations and the British Raj*, Berkeley: University of California Press 1996.

⁵¹⁴ See Large, *The Grand Spas of Central Europe*; Lotz-Heumann, Ute: *The German Spa in the Long Eighteenth Century. A Cultural History*, New York: Routledge 2022; Wood, Karl: *Health and Hazard. Spa Culture and the Social History of Medicine in the Nineteenth Century*, Cambridge: Cambridge Scholars Publishing 2012; Bradley, Ian: *Health, Hedonism and Hypochondria. The Hidden History of Spas*, London: I. B. Tauris & Company 2021; Steward, Jill (2012) ‘Moral Economies and Commercial Imperatives. Food, Diets and Spas in Central Europe: 1800-1914’, in: *Journal of Tourism History 4 (2)*, pp. 181–203.

⁵¹⁵ See ‘Een oude Kennis’, in: *De Locomotief*, 11 May 1898.

⁵¹⁶ See, for example, advertisements in: *Het Vaderland*, 25 April 1898; *Soerabaiasch-Handelsblad*, 18 May 1898; *De Locomotief*, 4 June 1898; *Soerabaiasch-Handelsblad*, 18 May 1898; *Dagblad van Zuid-Holland en 's-Gravenhage*, 9 June 1898.

aids.” Breitenstein expresses his conviction that the health of patients from the Indies seeking to recover from tropical diseases, too, will rapidly improve if cured with the healing waters in Karlsbad.⁵¹⁷

Roughly 10 years before Heinrich Breitenstein, the Swiss physician Heinrich Erni had realized a very similar business model. In 1889, the KNIL veteran opened a medical clinic in the internationally renowned Swiss spa and tourist destination of Gersau. Like Breitenstein’s spa clinic in Karlsbad, Erni’s decision to dedicate his life after the colonial service to curative practices can be directly linked to his experiences in tropical Sumatra. In 1899, he published an article in the German medical journal *Archiv für Schiffs- und Tropen-Hygiene* (Archive for ship- and tropical hygiene) where he commented on the health care in the Dutch East Indies and how it could serve as an example for European nations entering the colonial race in the tropics. “The murderous tropical climate with its diseases [...],” he writes, “rests like a nightmare on countries in the tropics and is the greatest enemy of the white population.” Despite the devastating effect of the tropical environment on European bodies, Erni observes that “some nations have flourishing colonies in the hot zone, such as the British in India and the Dutch in the Malay Archipelago.”⁵¹⁸ Rather optimistically, he praises the Dutch colonial government for its practice of “evacuation” of ill or recovering Europeans:

“The most beautiful and most effective institution is the evacuation of the sick, which is applied on a grand scale and whose success exceeds even the wildest hopes [...]. Malaria patients are primarily cured and saved by this [institution], and also the beri-beri patients, liver patients, etc. are evacuated to the mountains, to the sea, to Europe at the expense of the state. The reason for evacuation is the difference in the climatological conditions of the individual regions of [the Dutch East] Indies, especially the difference between the high altitude and the coastal climate.”⁵¹⁹

According to Erni, the Dutch government in the Indies had thus established a “best practice” in the successful treatment of its disease-struck, European subjects by relocating them to hill stations and, if necessary, to Europe for full recovery. “If we look at Europe”, he however adds, “we do not see a single state who does the same for its ill [...]. Why, for example, should lung patients stay in the city hospitals until they die, while the healing mountain air is so close? [...] The Indian evacuation has been giving the definite answer for many years.”⁵²⁰

⁵¹⁷ Breitenstein, Heinrich: ‘Een en ander uit Karlsbad’, in: *De Sumatra Post*, 26 January 1904. For the history of discourses surrounding the healing properties of (drinking) water in Europe, see Fuchs, Karin: *Baden und Trinken in den Bergen. Heilquellen in Graubünden 16. bis 19. Jahrhundert*, Baden: Hier und Jetzt 2019.

⁵¹⁸ Erni, Heinrich (1899): ‘Die Krankenfürsorge in Niederländisch-Indien’, in: *Archiv für Schiffs- und Tropen-Hygiene* 3, pp. 141–165, here p. 141.

⁵¹⁹ *Ibid.*, p. 150.

⁵²⁰ *Ibid.*, p. 165.

In 1897, Only two years before he published his praise on the Dutch East Indies' evacuation practice, Erni had put forward the perks of curing 'tropical' diseases in the European mountains at the 12th medical congress in Moscow. One of the panels focused on the "climatic treatment of the tuberculous" in Europe in the presence of the "most outstanding professors of Germany and Russia."⁵²¹ At the congress in Moscow, there seemed to have been strong disagreement between advocates of Koch's tuberculin and proponents of the *Höhenkur* ("altitude cure"). Curing patients suffering from tuberculosis or other respiratory diseases in sanatoriums and medical practices in high altitudes has become an established practice in European medical discourse throughout the 19th century.⁵²² Erni, a strong anti-contagionist, believed the altitude cure to be more effective than treatment with tuberculin. In the aftermath of the congress, he published a scientific study on the treatment of pulmonary tuberculosis, in which he defended his position in Moscow with references to his "observations from the colonies for lung patients on the Rigi". Erni claims that the Mount Rigi, situated in the Canton of Schwyz in the heart of Switzerland, was a "suitable place for the observation of sick patients, many of whom go up or are sent up there in large numbers every year."⁵²³ The healing effect that Erni believes to observe in the Swiss mountain landscape is diametrically opposed to the pathogenicity of the tropics – and analogous to the highlands of Sumatra. Patients who were cured by the fresh mountain air showed a "fresh vigorous appearance" as well as "improvements of the lungs" and "contrasted favorably with the pale figures from the south, who were sensitive to every draught of air and only dared to go outdoors wrapped up thickly."⁵²⁴ Erni concludes that such mountain sanatoriums are "the future"⁵²⁵ and "open-air cures are now the word of the day." Thanks to "the establishment of sanatoriums [...] Switzerland is on the right track."⁵²⁶

What Erni does not mention here is that, by opening a medical clinic in Gersau, he had himself become part of the "right track" Switzerland was on in taking advantage of the healing properties of its "healthy" environment. Shortly after his return from the Dutch East Indies in 1886, he opened a medical clinic in Gersau, a small town in the canton of Schwyz, situated at the foot of the Mount Rigi. In 1889, he advertised his clinic in the *Bataviaasch Nieuwsblad*, the

⁵²¹ Erni, Heinrich: *Die Behandlung der Lungenschwindsucht. Beobachtungen aus den Kolonien für Lungenkranke am Rigi*, Gersau: Gebrüder Müller 1898, p. 3.

⁵²² For the history of the sanatorium in Europe see Warren, Peter (2006): 'The Evolution of the Sanatorium: The First Half-Century, 1854-1904', in: *Canadian Bulletin of Medical History* 23 (2), pp. 457–476; For Switzerland, see Gull, Thomas: *Herwigs in Arosa. Die Erfindung eines Kurorts*, Zürich: Hier und Jetzt 2022; Schürer, Christian: *Der Traum von Heilung. Eine Geschichte der Höhenkur zur Behandlung von Lungentuberkulose*, Baden: Hier und Jetzt 2017.

⁵²³ Erni, *Die Behandlung der Lungenschwindsucht*, p. 107.

⁵²⁴ *Ibid.*, p. 108.

⁵²⁵ *Ibid.*, p. 4.

⁵²⁶ *Ibid.*, p. 8.

largest daily newspaper in the Dutch East Indies, referring to the privileged location in the vicinity of Lake Lucerne. Moreover, he claims in the advertisement, the local environment was perfectly suited for “patients from the tropics”, with first- and second-class hotels as well as private apartments being available for prospective patients’ housing.⁵²⁷ Indeed, like Karlsbad, Gersau had made a name for itself as a popular tourist and spa destination even before Erni opened his clinic, welcoming guests from all around Europe, including the Netherlands.⁵²⁸ In 1891, the small town in Schwyz witnessed the presence of two prominent guests: In April of the same year, the Dutch Queen Wilhelmina spent a few days in Gersau accompanied by her mother, who held the regency at the time. Their visit was initially kept secret, but soon became public, resulting in widespread coverage in the Dutch and Dutch East Indies press. “Gersau!”, the *Java-Bode* wrote, “Just a few weeks ago, most people did not even know the town’s name.” With the queen’s visit, this had certainly changed, the newspaper adds. The article’s author further stresses its readers about some “special features” of the “location”, in particular the “climate” and the “surroundings and history” of this “spot”.⁵²⁹ The tourism industry in Gersau seized the opportunity and started actively recruiting guests from the Netherlands after the high-profile visit of the Queen. “Switzerland is expensive? No!!!” the Gersau Spa Association (*Kurverein Gersau*), for example, advertised the municipality as a tourist destination “where holidays are still really holidays” in the Dutch daily newspaper *De Telegraaf* shortly after the Queen’s visit.⁵³⁰ The Gersau-based Hotel Müller, too, repeatedly advertised in the Dutch press.⁵³¹ These advertising campaigns seemed to have paid off. According to Heinrich Erni, guests from the Netherlands, alongside the Germans and French, accounted for the highest proportion of non-Swiss spa patients in the Gersau “lung colonies”.⁵³² It is very likely that some of them had previously resided in the Dutch East Indies and visited Gersau to recover from a tuberculosis infection they caught in the colony.⁵³³ The decision to relocate to the Canton of

⁵²⁷ Erni, Heinrich: ‘Dr. Erni, Kurarts’, in: *Bataviaasch Nieuwsblad*, 16 February 1889.

⁵²⁸ See Tissot, Laurent: ‘Tourismus’, in: *Historisches Lexikon der Schweiz (HLS)*, 08.03.2022, online, <https://hls-dhs-dss.ch/de/articles/014070/2022-03-08/> [accessed: 12.06.2023]; Barton, Susan: *Healthy Living in the Alps. The Origins of Winter Tourism in Switzerland, 1860-1914*, Manchester: Manchester University Press 2014.

⁵²⁹ ‘Gersau’, in: *Java-Bode*, 30 May 1891.

⁵³⁰ Kurverein Gersau: ‘Zwitzerland’, in: *De Telegraaf*, 25 April 1881.

⁵³¹ See, for example, ‘Hôtel en Pension Müller’, in: *Haagsche Courant*, 25 February 1899. For the history of the hotel Müller and its significance in establishing tourism in Gersau see Horat, Erwin: ‘Müller, Josef’, in: *Historisches Lexikon der Schweiz (HLS)*, 19.11.2009, online <https://hls-dhs-dss.ch/de/articles/030433/2009-11-19/> [accessed: 12.06.2023].

⁵³² See Erni, *Die Behandlung der Lungenschwindsucht*, p. 108.

⁵³³ In case of serious illness, the Dutch colonial government sent military personnel and civil servants to the European mountains for a cure. After 12-15 years, they were entitled to 2 years’ paid leave in Europe, regardless of their state of health. See Erni, ‘Die Krankenfürsorge in Niederländisch-Indien’, pp. 162f. However, these privileges were probably reserved exclusively for a thin elite of Europeans. For the European lower class in the colony, a European vacation was unthinkable. See Bosma, Ulbe/Raben, Remco: *Being ‘Dutch’ in the Indies. A History of Creolisation and Empire, 1500-1920*, Singapore: NUS Press 2008, p. 219.

Schwyz after having ended his service with the KNIL also seems to have been worthwhile for the Zurich-born Heinrich Erni. He remained a practicing doctor in Gersau until his death on 10 February 1942.⁵³⁴

⁵³⁴ See Die Trauerfamilie: 'Dr. med. Heinrich Erni', in: *Neue Zürcher Zeitung* 11 February 1942.

Conclusion

A first aim of this chapter has been to add to recent historiographic endeavors that understand the history of bacteriology in its colonial context, which often transcended the boundaries of individual nation states and empires. By proposing the analytical lens of ‘Germanophoneness’, the chapter demonstrated that a specialized community of German-speaking physicians competing for the discovery of the ‘scientific truth’ about the causes and cures of diseases in the tropics emerged at the turn of the twentieth century that connected medical researchers from Berlin, Amsterdam, Sumatra, and Tokyo through German-language medical publications. It further points to the role of the GTNI as a transimperial forum for the contestation of medical research in and about the Dutch East Indies. Second, the chapter illuminated the ways in which medical ‘men on the spot’ in European colonies intervened in late nineteenth-century contestations surrounding bacteriology. Germanophone ‘medical mercenaries’ in the Dutch East Indies directly profited from the colonial situation in their attempts to enter late nineteenth-century medical discourses. The Dutch Colonial Army, eager to shed light on the aetiology of those diseases that ravaged its troops, provided its mercenaries with various opportunities to conduct medical research in their off-duty time. Many of these ‘men on the spot’ continued to hold on to older paradigms of ecological determinism and tropicality and were rather hesitant in accepting the ‘novel’ discoveries of their metropolitan colleagues in the laboratories. Rather than being defined by a paradigm shift, in which the universalist-bacteriological replaced older theories focused on local conditions, late nineteenth-century medical discourse was still heavily characterized by epistemic insecurity. In the contestation for the ‘truth’ about diseases such as beriberi and cholera, ‘medical mercenaries’ claimed scientific authority by referring to their first-hand observations in the tropical colonies and their privileged access to colonized bodies. Of course, in the light of bacteriology’s colonial context, there were clear boundaries as to who was admitted to this struggle for authority. Women were just as much excluded as the Dutch colonial government’s Javanese, Batak, Acehnese, or Chinese subjects, even if the latter were knowledgeable and educated in European or local medical traditions. Only in the twentieth century would this exclusion eventually lead to organized resistance and demands for equal access to ‘modernity’.⁵³⁵ Third, the chapter has proposed a contingent relationship between bacteriological universalism, environmental determinism, and colonial ideology in medicine. Despite presenting their experiences in the colonial field as their prime advantage over their

⁵³⁵ For the role of physicians in the Indonesian struggle for independence, see Pols, *Nurturing Indonesia*.

colleagues in the laboratories, ‘medical mercenaries’, too, resorted to the state-of-the-art research method in proving their hypotheses. They kept meticulous notes on the developments of their patients’ symptoms, conducted microscopic investigations, experimented with different treatments, and dissected numerous colonized bodies. Bacteriologists, in turn, frequently left the contained space of the laboratory to conduct field research in the colonies, where they benefitted from a privileged access to racialized bodies. Even though bacteriology was in its core a universalist theory, race thus continued to serve as an important marker of distinction in studying the human body. The concept of “racial immunity” and sub-disciplines such as “racial pathology” or “racial hygiene” allowed convinced bacteriologists to propose racial differences in the human susceptibility to disease. Moreover, the case of Germanophone medical officers’ interventions in late 19th-century bacteriological discourse allows a small glimpse into the ways medical knowledge was transimperially circulated and transformed between the Netherlands, the Dutch East Indies, Meiji Japan, Germanophone Europe, and the German Empire. In his *Grundzüge der Tropenhygiene*, first published in 1895, the German KNIL veteran Karl Däubler explicitly puts his longstanding experiences as a colonial physician in the Dutch East Indies in the service of German colonial efforts on the African continent. Lastly, notions of the tropics as being inherently pathogenic also influenced the ways in which medical officers perceived and presented the hinterlands of Germanophone Europe itself. In an attempt to capitalize on their former service as medical officers with the KNIL, the Austrian Heinrich Breitenstein and the Swiss Heinrich Erni independently opened spa clinics in regions within their respective home countries. The mountain landscape surrounding Gersau (Erni), or the healing waters of Karlsbad, they claimed, were, in diametrical opposition to the ‘unhealthy’ tropical sphere, highly beneficial to the health of Europeans recovering from tropical diseases.

4 From ‘Koelie Medicine’ via Plantation Hygiene to Global Health: German and Swiss Physicians on Sumatra’s ‘Plantation Belt’

“In earlier years, the high-altitude estates were considered to be climatically unhealthy, and this was used as an excuse for the large losses due to disease and death. Today, the difference in mortality is reduced to a small percentage: The climate remained the same [...] but the pathogens have been driven back everywhere.”⁵³⁶

It was with a sense of optimism that, in 1909, the German physician W.A.P. Schüffner and his Dutch colleague W.A. Kuenen looked back at ten years of public health and hygiene policies aimed at improving the health conditions among indentured laborers employed with the Senembah Company (*Senembah Maatschappij*), one of the largest tobacco conglomerates on Sumatra’s ‘plantation belt’. At that time, Schüffner had been working as the Company’s chief physician for 12 years. He was one – albeit the historiographically most reappraised – among several German and Swiss physicians who had been appointed to secure the health of disease-inflected Javanese and Chinese ‘coolies’ in northeastern Sumatra from the 1870s way into the 20th century. Kuenen joined Schüffner as an assistant in 1902 and was appointed director of the Pathological Laboratory in Medan, established in 1906 by the Senembah Company and the neighboring Deli Company (*Deli Maatschappij*). The laboratory’s main aim was to study diseases prevalent among the Chinese and Javanese ‘coolies’ employed on the European plantations as well as to formulate concrete policy recommendations to decrease the mortality rates among indentured laborers.⁵³⁷ According to the statement quoted above, it was due to “modern” scientific knowledge produced in these laboratories that plantation physicians such as Schüffner and Kuenen themselves were able improve the “unhealthy” conditions on the European plantations and thereby significantly reduce mortality caused by pathogens.

As was already hinted at in the previous chapter, advancements in bacteriology, parasitology, and other ‘modern’ medical subdisciplines at the turn of the 20th century were by no means a

⁵³⁶ Schüffner, W.A.P./Kuenen, W.A. (1909): ‘Die gesundheitlichen Verhältnisse des Arbeiterstandes der Senembah-Gesellschaft auf Sumatra während der Jahre 1897 bis 1907’, in: *Zeitschrift für Hygiene* 64, pp. 167–257, here p. 178.

⁵³⁷ See Agustono, Budi/Junaidi/Affandi, Kiki Maulana (2021): ‘Pathology Laboratory. An Institution of Tropical Disease in Medan, East Sumatra, 1906-1942’, in: *Cogent Arts & Humanities* 8 (1), online, DOI: <https://doi.org/10.1080/23311983.2021.1905261>; Janssen, C.W. (1914): *Senembah Maatschappij, 1889-1914*, Amsterdam: Roelofzen-Hübern en Van Santen 1914, pp. 43f. For the high death rates on Sumatra’s plantations see Van Klaveren, Marieke (1997): ‘Death among Coolies. Mortality of Chinese and Javanese Labourers on Sumatra in the Early Years of Recruitment, 1882-1909’, in: *Itinerario* 21 (1), pp. 111–124; Breman, Jan (1987): *Koelies, Planters en Koloniale Politiek. Het Arbeidsregime op de Grootland-bouwondernemingen aan Sumatra’s Oostkust in het Begin van de Twintigste Eeuw*, Dordrecht: KITLV Uitgeverij 1987.

‘mere’ theoretical discussion but rather followed a practical urgency related to the high death rates in tropical colonies. In the early 20th century, the germ theory of disease increasingly informed European health and hygiene policies.⁵³⁸ The ‘scientification’ of plantation hygiene in Sumatra, whose alleged success was prominently claimed by physicians such as Schüffner, Kuenen et al., is too to be regarded in light of these larger developments in public health. Moreover, the bacteriological paradigm that viewed the human body as the main transmitter of ‘invisible’ pathogens triggered growing anxieties concerning the global movement of people whose bodies were regarded as potential carriers of diseases. The migration of lower-class individuals and people of color, in particular, allegedly threatened the health of entire populations.⁵³⁹ Company physicians in the Dutch East Indies, too, regarded the migration of Javanese and Chinese laborers to Sumatra as one of the prime causes for the spread of epidemic diseases such as cholera or malaria.

Earlier historical research has however largely presented the history of the pathological laboratories and public health policies implemented by the European tobacco and rubber companies in Sumatra as a success story.⁵⁴⁰ Thereby, historians have uncritically reproduced a narrative established by the companies themselves who claimed that their allegedly philanthropic public health initiatives successfully lowered death rates and improved sanitary conditions for indentured laborers.⁵⁴¹ Indeed, privatized company hospitals did to a certain extent fill the gap left in civil health care created through the Dutch colonial military’s monopoly on European medicine: the 238 company hospitals still in existence even in 1940 provided triple the capacity for patients than all the government founded civil hospitals combined.⁵⁴² In recent years, however, historians have started to critically investigate the institutionalization of workers’ hygiene on the European plantations in Sumatra by framing it

⁵³⁸ Good overviews for the history of 20th century public health in Europe and the USA are Ward, John/Warren, Christian (eds): *Silent Victories. The History and Practice of Public Health in Twentieth-Century America*, New York: Oxford University Press 2007; Rosen, George: *A History of Public Health*, Baltimore: John Hopkins University Press 2015 [1958]; Porter, Dorothy: *Health, Civilization and the State. A History of Public Health from Ancient to Modern Times*, London: Routledge 1998; Gross Solomon, Susan/Murard, Lion/Zylberman, Patrick (eds): *Shifting Boundaries of Public Health. Europe in the Twentieth Century*, Rochester: University of Rochester Press 2013.

⁵³⁹ The literature on the medicalization of border control regimes and fears of ‘racialized’ migrants is discussed in more detail below. For now, a good overview are the contributions in Bashford, Alison (ed): *Medicine at the Border. Disease, Globalization and Security, 1850 to the Present*, Basingstoke: Palgrave Macmillan 2014.

⁵⁴⁰ See, for example, Haneveld, G.T.: ‘From Slave Hospital to Reliable Health Care. Medical Work on the Plantations of Sumatra’s East Coast’, in: Van Heteren, G.M/De Knecht-Van Eekelen, A./Pulissen, M.J.D. (eds): *Dutch Medicine in the Malay Archipelago 1816-1942*, Amsterdam: Rodopi 1989, pp. 73–86.

⁵⁴¹ See, for example, the ‘hagiographies’ published by the Senembah Company and the Deli planter’s association: Janssen, *Senembah Maatschappij*; Modderman, P.W.: *Gedenboek uitgegeven ter Gelegenheid van het Vijftig Jarig Bestaan van de Deli Planters Vereeniging*, Weltevreden: Batavia 1929.

⁵⁴² See Ochsendorf, Frank (2018): ‘Colonial Corporate Social Responsibility. Company Healthcare in Java, East Sumatra and Belitung, 1910-1940’, in: *Lembaran Sejarah 14 (1)*, pp. 83–97, here p. 84.

as an early expression of economically driven “corporate social responsibility” or by exploring how physicians’ “political views” influenced policies aimed at increasing indentured laborers’ health and productivity.⁵⁴³ The present chapter aims at adding to such critical perspectives on the role of medicine in Sumatra’s plantation belt. By doing so, I wish to add to a large and growing body of research literature that re-assesses the alleged philanthropic nature of early 20th century colonial public health.⁵⁴⁴ Considering a great bulk of existing research focusses on state-led health care initiatives, I believe that the investigation of company-driven public health on Sumatra allows to add a further dimension to this strand of research as it allows to explore the role of economic rationales that underpinned the institutionalization of ‘civil’ medicine in the colonies.⁵⁴⁵ Moreover, existing research has placed its main focus on the centralization of Sumatra’s plantation hospitals and the establishment of the laboratory in Medan around 1900 as well as the scientific ‘breakthroughs’ produced within them, largely disregarding larger historical developments preceding and succeeding the institutionalization of plantation hygiene in Sumatra.⁵⁴⁶ This unilateral focus on the time period from around 1900 to the interwar years applies to historiographies on colonial public health and tropical medicine more broadly, including Warwick Anderson’s groundbreaking work on public health in the American Philippines.⁵⁴⁷ Drawing on these research gaps, this chapter aims to connect 19th century military-driven colonial medicine, early 20th century public health, and the emerging global health movement succeeding it. Lastly, no study so far has explicitly addressed the high

⁵⁴³ See Ochsendorf, ‘Colonial Corporate Social Responsibility’; Jaelani, Gani (2023): ‘Preserving the Resources. Plantations and Mines Workers’ Hygiene’, in: *Archipel. Études Interdisciplinaires sur le Monde Insulindien* 104, pp. 33–56; Pols, Hans: ‘Quarantine in the Dutch East Indies’, in: Bashford, Alison (ed): *Quarantine. Local and Global Histories*, London: Palgrave Macmillan 2016, pp. 85–102.

⁵⁴⁴ See, for example, Velmet, Aro: *Pasteur’s Empire. Bacteriology and Politics in France, its Colonies, and the World*, New York: Oxford University Press 2020; Bashford, Alison: *Imperial Hygiene. A Critical History of Colonialism, Nationalism, and Public Health*, Basingstoke: Palgrave Macmillan 2004; Anderson, Warwick: *Colonial Pathologies. American Tropical Medicine, Race, and Hygiene in the Philippines*, Durham: Duke University Press 2008; Pelis, Kim (1997): ‘Prophet for Profit in French North Africa. Charles Nicolle and the Pasteur Institute of Tunis, 1903–1936’, in: *Bulletin of the History of Medicine* 71, pp. 583–622; Lorcin, Patricia (1999): ‘Imperialism, Colonial Identity, and Race in Algeria, 1830–1870. The Role of the French Medical Corps’, in: *Isis* 90 (4), pp. 653–679; Monnais-Rousselot, Laurence: *Médecine et Colonisation. L’Aventure Indochinoise, 1860–1939*, Paris: Editions CNRS, 1999; Moulin, Anne Marie, ‘The Pasteur Institutes between the Two World Wars. The Transformation of the International Sanitary Order’, in: Weindling, Paul (ed): *International Health Organisations and Movements, 1918–1939*, New York: Cambridge University Press 1995, pp. 244–265; Brig, Kristin (2022): ‘Stabilising Lymph. British East and Central Africa, “Tropical” Climates, and the Search for Effective Smallpox Vaccine Lymph, 1890s–1903’, in: *The Journal of Imperial and Commonwealth History* 50 (5), pp. 890–914; Clark, Hannah-Louise (2021): ‘Of Jinn Theories and Germ Theories. Translating Microbes, Bacteriological Medicine, and Islamic Law in Algeria’, in: *Osiris* 36, pp. 54–85; Manderson, Lenore: *Sickness and the State. Health and Illness in Colonial Malaya, 1870–1940*, Cambridge: Cambridge University Press 1996.

⁵⁴⁵ For the economic rationale underpinning colonial public health policies in British India see Bhattacharya, Nandini: *Contagion and Enclaves. Tropical Medicine in Colonial India*, Liverpool: Liverpool University Press 2012; Serahwat, Samiksha: *Colonial Medical Care in North India. Gender, State, and Society, c. 1830–1920*, Oxford: Oxford University Press 2013.

⁵⁴⁶ See references in fn 543.

⁵⁴⁷ See Anderson, *Colonial Pathologies*.

presence of Germanophone physicians from the German Empire and Switzerland within these health care regimes, despite the fact that a large body of research has pointed to the transnational composition among Sumatra's planters' society.⁵⁴⁸ A further aim of this chapter is thus to shed light on the transimperial production and dissemination of public health policies in the late 19th and early 20th centuries. For these purposes, the present chapter follows three distinct yet interconnected avenues.

First, W.A.P. Schüffner and his close collaborators have so far largely been presented as 'pioneers' of some sort. After his passing, the *Journal of Parasitology*, for example, remembers Schüffner as "the first to shatter the paralyzing belief in the 'murderous tropical climate.'"⁵⁴⁹ Schüffner, however, as has been hinted at above, was one among many German and Swiss physicians employed on the tobacco and rubber plantations in Sumatra from the 1870s way into the 20th century. The first section of this chapter thus places the institutionalization of plantation hygiene in its longer historical trajectories. On the one hand, I argue the German and Swiss planters' diaspora on Sumatra created career opportunities for physicians from Germanophone Europe. I thereby intend to add to a growing strand of historiography that understands the economically motivated exploitation of labor and resources on Sumatra's plantation belt as a transimperial project rather than a 'national' endeavor. On the other hand, the chapter adds to recent historiographies extending the temporal and spatial framework of German colonial history by highlighting how German individuals moved between 'foreign' empires before and after the German Empire had entered the imperial race.⁵⁵⁰ The second section critically examines the biopolitical implications of the hygiene policies formulated by plantation physicians in Sumatra. As has been convincingly argued by the historian Richard Baxstrom, the migration system that transported Tamil laborers from India to the plantations of colonial Malaya was essentially an act of biopower that led to the remaking of Tamils as human subjects

⁵⁴⁸ For the transnational composition of the planters' society and capital investments in colonial Sumatra, see Zangger, Andreas: *Koloniale Schweiz. Ein Stück Globalgeschichte zwischen Europa und Südostasien (1860-1930)*, Bielefeld: Transcript 2011, pp. 169–286; Stoler, Ann Laura: *Capitalism and Confrontation in Sumatra's Plantation Belt, 1870-1979*, New Haven: Yale University Press 1985, pp. 17–22.

⁵⁴⁹ Swellengrebel, N. H. (1950): 'Wilhelm August Paul Schüffner. January 2, 1867-December 24, 1949', in: *The Journal of Parasitology* 36 (4), p. 394.

⁵⁵⁰ See Conrad, Sebastian: *Globalisation and the Nation in Imperial Germany*, Cambridge: Cambridge University Press 2010; Naranch, Bradley /Eley, Geoff (eds): *German Colonialism in a Global Age*, Durham: Duke University Press 2014; Von Brescius, Moritz/Dejung, Christof (2022): 'The Plantation Gaze. Imperial Careering and Agronomic Knowledge between Europe and the Tropics', in: *Comparativ* 31 (5/6), pp. 572–590; Kirchberger, Ulrike (2001): 'German Scientists in the Indian Forest Service. A German Contribution to the Raj?', in: *The Journal of Imperial and Commonwealth History* 29 (2), pp. 1–26; Kirchberger, Ulrike: 'Between Transimperial Networking and National Antagonism. German Scientists in the British Empire during the Long Nineteenth Century', in: Goss, Andrew (ed): *The Routledge Handbook of Science and Empire*, London: Routledge 2021, pp. 138–147.

and transformed perceptions of the Tamil body.⁵⁵¹ Following up on this, I investigate the ways in which plantation physicians on Sumatra reimagined Chinese and Javanese indentured laborers' bodies, in particular with regard to their (racial) predisposition to disease. Moreover, I illustrate how these theoretical considerations surrounding 'coolie' bodies translated into practical hygiene policies concerning the architecture of plantations and workers' housing. I demonstrate how medical knowledge on the health of indentured laborers resulted in the establishment of villages modelled after military barracks and designed to transform 'coolies' from disease-carriers into 'modern', hygienic subjects. At the same time, I point to the boundaries of imperial biopolitical power by underlining that physicians had to account for local customs and sometimes even met with outright resistance from their 'coolie' patients in implementing hygiene policies. Third, in the last section of this chapter, and understanding "public health and colonial medicine as a multicentered process",⁵⁵² I explore the transimperial dimension as well as the long-term implications of plantation medicine. First, I argue that the 'pioneering' subdiscipline of plantation hygiene established in Sumatra would later be made useful for German imperial efforts. German tobacco companies in the South Pacific, for example, hired veterans from Sumatra's plantation belt to benefit from with their long-standing expertise in the economic exploitation of tropical environments and populations. Moreover, Schüffner and his colleagues regularly reported their findings in medical and scientific journals such as the *Archiv für Schiffs- und Tropenhygiene*, thereby disseminating knowledge produced in Sumatra's laboratories among a German-speaking readership. This publication strategy was closely linked to the ways in which Swiss and German plantation physicians transformed the symbolic capital acquired through their activities in Sumatra's plantation hospitals into career opportunities in Europe. After having returned to Europe, many were appointed to prestigious professorships in tropical medicine across institutions in Switzerland, Germany, and the Netherlands. Within the framework of these appointments, they joined international congresses and supranational research commissions whose aim was to 'improve' the health of populations inhabiting the tropical world.

⁵⁵¹ See Baxstrom, Richard (2000): 'Governmentality, Bio-Power, and the Emergence of the Malayan-Tamil Subject on the Plantations of Colonial Malaya', in: *Crossroads. An Interdisciplinary Journal of Southeast Asian Studies* 14 (2), pp. 49–78.

⁵⁵² Peckham, Robert/Pomfret, David M.: 'Introduction. Medicine, Hygiene, and the Re-ordering of Empire', in: idem (eds): *Imperial Contagions. Medicine, Hygiene, and Cultures of Planning in Asia*, Hong Kong: Hong Kong University Press 2013, pp. 1–16, here p. 7.

4.1 German Physicians on Sumatra's Plantation Belt

Since the historian and anthropologist Ann Laura Stoler had published her groundbreaking study *Capitalism and Confrontation in Sumatra's Plantation Belt, 1870-1979*, the colonial plantation complex in northeastern Sumatra gained notoriety in historiography.⁵⁵³ While some historians have stressed the violence and hardships experienced by the indentured laborers employed on the European plantations,⁵⁵⁴ others have noted the long-lasting effects on the environment, ethnic composition, and labor conditions in modern-day Indonesia that resulted from the forced cultivation of land and migration of workforce in the late 19th and early 20th century.⁵⁵⁵ More recently, historians have investigated the history of the plantation complex in Sumatra and its long-term consequences in its transnational dimensions.⁵⁵⁶ In his seminal study, the Swiss historian Andreas Zangger has pointed to the high presence of Swiss and German planters who had flocked to Sumatra to partake in the lucrative tobacco trade starting in the 1870s.⁵⁵⁷ In what follows, I will place the recruitment of German and Swiss physicians for 'coolie health care' on Sumatra within this larger framework of market liberalization and transnationalization of Sumatra's plantation economy, arguing that the transnational composition among Sumatra planters opened career opportunities for medically trained men from across Europe.

⁵⁵³ Up until today, Stoler's work provides the most extensive, English-language overview of the colonial plantation economy on Sumatra and its aftermath.

⁵⁵⁴ See Breman, *Koelies, Planters en Koloniale Politiek*, pp. 217–262; Stenberg, Josh/Minasny, Budiman (2022): 'Coolie Legend on the Deli Plantation. Tale, Text, and Temple of the Five Ancestors', in: *Bijdragen tot de Taal-, Land- en Volkenkunde* 178 (2/3), pp. 159–191; Agustono, Budi: 'Violence on North Sumatra's Plantations', in: Colombijn, Freek/Lindblad, Thomas (eds): *Roots of Violence in Indonesia. Contemporary Violence in Historical Perspective*, Leiden: KITLV Press 2002, pp. 133–141; Houben, Vincent: 'Homes and Colonial Violence in the Dutch East Indies. The Coolie Pondok', in: Williams, James/Hentschke, Felicitas (eds): *To Be at Home. House, Work, and Self in the Modern World*, Oldenbourg: De Gruyter 2018, pp. 120–124; Darini, Ririn/Anggraeni, Dyah Ayu (2021): 'The Life of Deli Tobacco Plantation's Workers in East Sumatera, 1880-1930', in: *Indonesian Historical Studies* 5 (1), pp. 30–44.

⁵⁵⁵ See de Groot Heupner, Susan (2016): 'Labour Exploitation, Systematic Oppression and Violence in Palm Oil Plantations in North Sumatra, Indonesia', in: *People. International Journal of Social Sciences* 2 (1), pp. 477–494; Murray Li, Tania (2017): 'After the Land Grab. Infrastructural Violence and the "Mafia System" in Indonesia's Oil Palm Plantation Zones', in: *Geoforum online*, DOI: <http://dx.doi.org/10.1016/j.geoforum.2017.10.012>; Ford, Michele: 'Violent Industrial Protest in Indonesia. Cultural Phenomenon or Legacy of an Authoritarian Past?', in: Gall, G. (ed): *New Forms and Expressions of Conflict at Work*, London: Palgrave Macmillan 2013, pp. 171–190; Murray Li, Tania (2017): 'The Price of Un/Freedom. Indonesia's Colonial and Contemporary Plantation Labor Regimes', in: *Comparative Studies in Society and History* 59 (2), pp. 245–276.

⁵⁵⁶ See, for example, Von Brescius/Dejung, 'The Plantation Gaze'; Minarchek, Matthew (2018): 'Plantations, Peddlers, and Nature Protection. The Transnational Origins of Indonesia's Orangutan Crisis, 1910-1930, in: *TRaNS. Trans-Regional and -National Studies of Southeast Asia*, 6 (1), pp. 101–129; Stoler, *Capitalism and Confrontation*, pp. 17–22; Toivanen, Mikko (2023): 'A Nordic Colonial Career Across Borders. Hjalmar Björling in the Dutch East Indies and China', in: *The Journal of Imperial and Commonwealth History*, 51 (3), pp. 421–441.

⁵⁵⁷ See Zangger, *Koloniale Schweiz*.

Transnational Perspectives on Sumatra's Plantation Economy

For most of the 19th century, the Dutch East Indies' plantation economy was dominated by the so-called *cultuurstelsel* (cultivation system), a state monopoly on agricultural production that endorsed the cultivation of cash crops for exportation and forced farmers to hand over part of their harvest to the Dutch government. The system resulted in poverty and famine among the peasant population which led to increased criticism from growing liberal voices in the Netherlands – the most prominent being Douwes Dekker, who published the anti-colonial novel *Max Havelaar* under his pseudonym Multatuli in 1856.⁵⁵⁸ The cultivation system was finally abolished in 1870. In the same year, the colonial government introduced the *agrarische wet* (agrarian law) that allowed foreign investors to enter long-term lease contracts with local power holders and abolished the forced cultivation of export-oriented cash crops. At that time, European agricultural production was mainly concentrated on the island of Java.⁵⁵⁹

In 1862, the Sultan of Deli signed a treaty enabling Western planters to lease land in the areas under his reign. The first three land concessions were granted by the Sultan in 1865 to the Dutchman Nienhuys, the German Von Mach, and the Swiss Albert Breker. In 1869, Nienhuys founded the limited liability company *Deli Maatschappij* (Deli Company) that would pave the way for planters to follow the promises for wealth and fortune in light of the rising tobacco prices in the late 19th century. In 1871, the Dutch J. T. Cremer was appointed chief administrator of the Deli Company. He arranged financing for companies and individuals eager to invest in Sumatra's plantation belt. As a consequence, the number of plantation companies grew steadily and, in 1879, the individual planters joined together to form the Deli Planters' Association. In the following years, considering the absence of colonial government structures on Sumatra at the time, the Association strategically invested in developing the local infrastructures.⁵⁶⁰

⁵⁵⁸ For the anti-colonial dimension of Max Havelaar and agricultural reforms in the Dutch East Indies, see Zook, Darren (2006): 'Searching for *Max Havelaar*. Multatuli, Colonial History, and the Confusion of Empire', in: *Modern Language Notes* 121 (5), pp. 1169–1189; Salverda, Reinier (2005): 'The Case of the Missing Empire, or the Continuing Relevance of Multatuli's Novel *Max Havelaar* (1860)', in: *European Review* 13 (1), pp. 127–138. For the cultivation system and its abolishment more broadly, see Fasseur, C. (1991): 'Purse or Principle. Dutch Colonial Policy in the 1860s and the Decline of the Cultivation System', in: *Modern Asian Studies* 25 (1), pp. 33–52; Bosma, Ulbe (2005): 'Het Cultuurstelsel en zijn Buitenlandse Ondernemers. Java tussen Oud en Nieuw Kolonialisme', in: *TSEG – The Low Countries Journal of Social and Economic History*, 2 (2), pp. 3–28; Fasseur, Cornelis: *The Politics of Colonial Exploitation. Java, the Dutch, and the Cultivation System*, Ithaca: Cornell University Press 1994; Gouda, Frances: *Dutch Culture Overseas. Colonial Practice in the Netherlands Indies 1900-1942*, Singapore: Equinox Publishing 1995, pp. 47f.; Bosma, Ulbe: *The Sugar Plantation in India and Indonesia. Industrial Production, 1770-2010*, New York: Cambridge University Press 2013, pp. 88–104.

⁵⁵⁹ See Bosma, *The Sugar Plantation in India and Indonesia*, pp. 27, 117, 130

⁵⁶⁰ See Stoler, *Capitalism and Confrontation*, pp. 16f.; Breman, *Koelies, Planters en Koloniale Politiek*, pp. 46–53; Pols, 'Quarantine in the Dutch East Indies', pp. 94f.

Meanwhile, planters and merchants from all around Europe and the Americas flocked to Sumatra to partake in the lucrative tobacco trade. Many German and Swiss planters initially kicked off their career with the Deli Company but would eventually go on to lease land and found their own plantation enterprises.⁵⁶¹ According to the historian Andreas Zangger, in 1884, after the Dutch (58.5%), Germans (16%) provided the largest share of Europeans on Sumatra's East coast, followed by the British (13%), the Swiss (5.9%), and the French (1.8%).⁵⁶² In 1889, the Deli Company purchased a number of neighboring plantations, many of which were Swiss or German owned, and renamed the newly-founded conglomerate to *Senembah Maatschappij* (Senembah Company). Nevertheless, German and Swiss nationals remained highly represented in Sumatra even after most plantations were handed over to Dutch ventures and the German Empire had started to consolidate its own colonial overseas empire in 1884. According to the Senembah Company, in 1914, 21 Germans, three Swiss, 1 Austrian and 1 Danish citizen were employed with Senembah, as opposed to 38 Dutchmen.⁵⁶³ As late as in 1930, Germans (7%) and Swiss (2.4%) still accounted for a considerable portion of Sumatra's European planter society.⁵⁶⁴

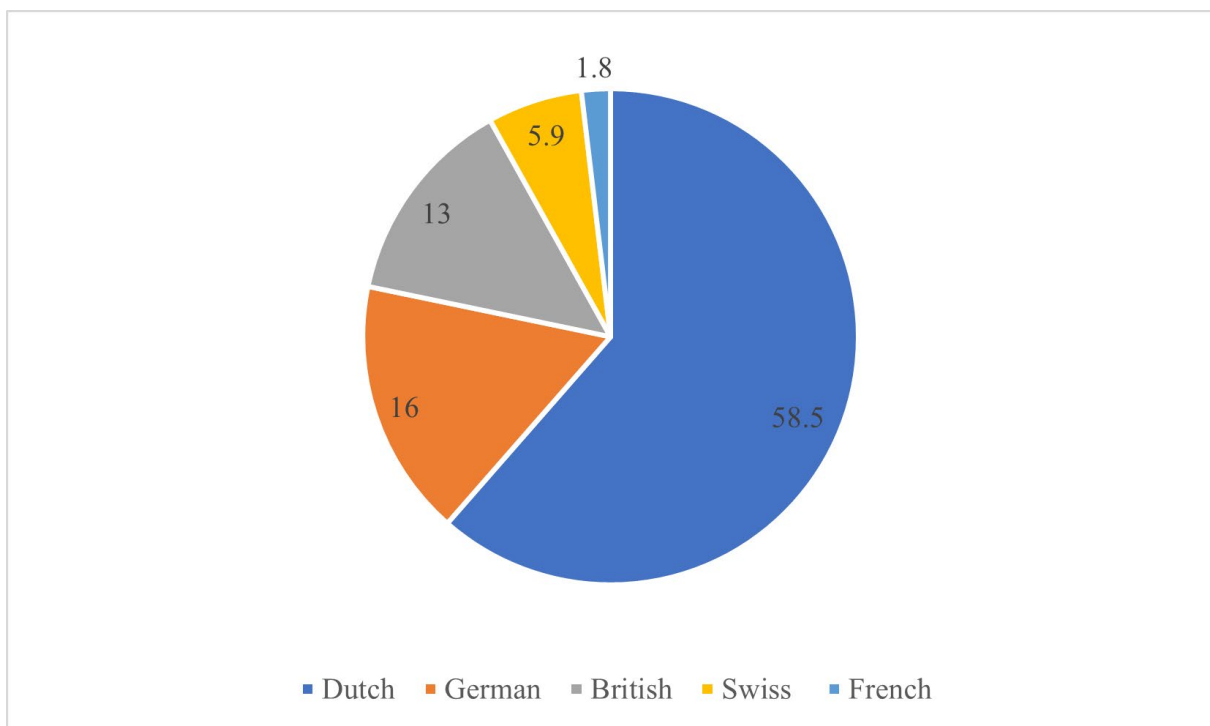


Table 2: Europeans on Sumatra's East Coast (percentage according to nationality). Source: Zangger, *Koloniale Schweiz*, p. 195.

⁵⁶¹ See Zangger, *Koloniale Schweiz*, pp. 169–182.

⁵⁶² See *ibid.*, p. 195.

⁵⁶³ Janssen, *Senembah Maatschappij*, p. 38.

⁵⁶⁴ See Zangger, *Koloniale Schweiz*, p. 195.

The strong presence of planters from Germanophone Europe did not go unnoticed among Dutch observers. In an attempt to explain the high proportion of Germans and Swiss in Sumatra, the Senembah Company wrote in its self-published company history of 1914 that

“The increased demands for controlling [the plantations] that were related to the increase of coolies and the intensification of labor, as well as the need to be aware at all times of the amount of expenditure on the various subjects, made it necessary to send out many new young people [to Sumatra] and to choose them from among the physically and mentally well-developed people, who brought sound family traditions [to Sumatra] and could be considered good representatives of the European element towards the Easterners.”⁵⁶⁵

The “task” to recruit European men for Sumatra was, according to the author, not an easy one. “Naturally”, at first, the Senembah company had looked out to recruit “suitable Dutchmen” as, at the time of its foundation, “the personnel consisted mainly of Germans and Swiss”, however “it turned out that the most suitable elements here [in the Netherlands] did not prefer a career in Deli [...]”. It was for that reason that the company continued to approve applications “that reached us from Germany [...]”. Due to the good experience the Senembah Company had allegedly made in taking over the formerly German and Swiss owned plantation company Näher & Grob, whose Dutch and German personnel “got along very well and complemented each other”, the author expresses little concern about recruiting Germans. Despite being German by nationality, he adds, these “gentlemen made every effort to learn Dutch, while at the same time remaining good members of their ‘Deutscher Verein’ [German association].”⁵⁶⁶ In other words, it appears that the European planters in Sumatra displayed a sense of imperial cosmopolitanism that did not come into conflict with their individual national identity. While adhering to their Swiss or German identity, German and Swiss planters seemed to have proven their belonging to Dutch colonial society.⁵⁶⁷ In addition to their ability to ‘integrate’ well, the Senembah Company further stresses that the Germans in Sumatra were “young people from good families, who had studied on large estates there [in Germany] and had received good theoretical agricultural education.”⁵⁶⁸ The emphasize on the excellent “theoretical” education among German planters points to the strong reputation of the German educational system. Since the 19th century, ‘foreign’ colonial powers such as the British or the Dutch actively recruited German experts for their imperial services.⁵⁶⁹ At least to the outside, and despite their reputation

⁵⁶⁵ Janssen, *Senembah Maatschappij*, p. 36.

⁵⁶⁶ *Ibid.*, pp. 36–38.

⁵⁶⁷ For the role of national associations among diasporic European communities in the colonies, see Zangger, *Koloniale Schweiz*, pp. 415–432.

⁵⁶⁸ Janssen, *Senembah Maatschappij*, p. 38.

⁵⁶⁹ See Kirchberger, ‘German Scientists in the Indian Forest Service’; Schär, Bernhard C. (2019): ‘From Batticaloa via Basel to Berlin. Transimperial Science in Ceylon and Beyond around 1900’, in: *The Journal of Imperial and Commonwealth History* 48 (2), pp. 230–262; Von Brescius/Dejung, ‘The Plantation Gaze’; Kirchberger, ‘Between Transimperial Networking and National Antagonism’.

of being ‘brute’ and ‘uneducated’, German planters, too, were presented as ‘experts’ whose presence positively impacted the productive agricultural exploitation of Sumatra’s east coast.

The ‘Coolie Ordinance’: The Early Days of Plantation Health Care

Agricultural knowledge was not the only form of expertise appreciated on part of the Dutch plantation companies when commenting on their German colleagues in Sumatra. When remembering the various achievements made by the German-Swiss company Näher & Grob, the Senembah Company wrote that the two men, apart from employing “people who were well educated in the field of agriculture” also “managed to attract eminent physicians for their venture”, among them the German Dr. Bernhard Hagen and a physician named Dr. Paster “who belonged to the best physicians in Deli.”⁵⁷⁰ Indeed, the high presence of German and Swiss individuals among the plantation owners and planters society on Sumatra’s east coast was also reflected in the plantation hospitals’ medical personnel.

In the backdrop of the recruitment of civil European physicians for the plantation hospitals on Sumatra stood the so-called *Koelie Ordinatie* (coolie ordinance), a set of laws introduced by the Dutch colonial government in 1880 that legally stipulated the work relationship between the European plantation owners and the indentured labor workforce. Other than on Java, where plantation workers could be recruited among the indigenous society, on the sparsely populated island of Sumatra the local Batak and Malay populations refused to work on the European plantation estates. European plantation owners thus ‘imported’ their workforce among the (often impoverished) populations in China and central Java.⁵⁷¹ The recruitment of workers followed a transimperially established system of ‘coolie brokerage’, whereas specialized agencies provided plantations across the globe with indentured laborers from China, South, and Southeast Asia.⁵⁷² From the perspective of the European planters, the coolie ordinance’s main

⁵⁷⁰ Janssen, *Senembah Maatschappij*, p. 7.

⁵⁷¹ See Stoler, *Capitalism and Confrontation*, pp. 25–29; Breman, *Koelies, Planters en Koloniale Politiek*, pp. 76–91; Termorshuizen, Thio: ‘Indentured Labour in the Dutch Colonial Empire, 1800-1940’, in: Oostindie, Geert (ed): *Dutch Colonialism, Migration and Cultural Heritage*, Leiden: Brill 2009, pp. 261–314; Murray Li, ‘The Price of Un/Freedom’; Benton, Gregor: *Chinese Indentured Labour in the Dutch East Indies, 1880-1942. Tin, Tobacco, Timber, and the Penal Sanction*, Cham: Springer 2022.

⁵⁷² See Ginés-Blasi, Mònica (2021): ‘Exploiting Chinese Labour Emigration in Treaty Ports. The Role of Spanish Consulates in the “Coolie Trade”’, in: *International Review of Social History*, 66 (1), pp. 1–24; Meagher, Arnold J.: *The Coolie Trade. The Traffic in Chinese Labourers to Latin America 1847-1874*, Bloomington: Xlibris Corporation 2008; Ginés-Blasi, Mònica: ‘The “Coolie Trade” via Southeast Asia. Exporting Chinese Indentured Labourers to Cuba through the Spanish Philippines’, in: Ekama, Kate/Hellman, Lisa/Van Rossmu, Matthias (eds) *Slavery and Bondage in Asia, 1550–1850. Towards a Global History of Coerced Labour*, Berlin: De Gruyter,

aim was to guarantee that the costly transportation of ‘coolies’ from China and Java would pay off. Through the introduction of the so-called *poenale sanctie* (penal sanction), the ordinance enabled plantation owners to criminally prosecute indentured laborers in case they intended to prematurely leave their three-year contract. In turn, European plantation companies were legally obliged to provide adequate food, housing, and medical care for ‘their’ workforce.⁵⁷³

At first glance it might seem that the coolie ordinance indeed guaranteed a certain degree of workers’ rights and fair employment conditions. Upon closer investigation, however, the implementation of living standards and health care provision followed a practical urgency rather than philanthropic reflections. As several historians have pointed out, the Javanese and Chinese indentured laborers on Sumatra were subjected to arbitrary violence on an everyday basis that shocked even many contemporary European observers. Moreover, the harsh conditions on the plantations, the challenging climate, and the cramped living conditions accelerated the spread of epidemic diseases, routinely decimating the workforce.⁵⁷⁴ To guarantee the implementation of the coolie ordinance and with it the health care provision for the indentured laborers, in the 1870s and 1880s each plantation estate established a small hospital. Patients were cared for onsite by Malay or Chinese medical experts. In addition, each plantation employed a European chief physician who visited the individual estates on a weekly or bi-weekly basis.⁵⁷⁵ One of the first physicians recruited for this task was the German Dr. Bernhard Hagen. As I have argued elsewhere in more detail, throughout his time on Sumatra, Hagen showed little interest in his profession as a plantation physician and rather utilized his posting in Sumatra to pursue his passion for physical anthropology in an attempt move upward in the social ladder of the Germanophone bourgeoisie by presenting himself as an ‘expert’ on the various ‘races’ of the Malay Archipelago.⁵⁷⁶ Nevertheless, his private papers and early

2022, pp. 97–118; Jung, Moon-Ho (2005): ‘Outlawing “Coolies”. Race, Nation, and Empire in the Age of Emancipation’, in: *American Quarterly* 57 (3), pp. 677–701; Sharma, Jayeeta (2008): ‘“Lazy” Natives, Coolie Labour, and the Assam Tea Industry’, in: *Modern Asian Studies*, 43(6), pp. 1287–1324; Ginés-Blasi, Mònica (2020): ‘A Philippine “Coolie Trade”. Trade and Exploitation of Chinese Labour in Spanish Colonial Philippines, 1850–98’, in: *Journal of Southeast Asian Studies*, 51 (3), pp. 457–483; Behal, Rana P.: (2010). ‘Coolie Drivers Or Benevolent Paternalists? British Tea Planters in Assam and the Indenture Labour System’, in: *Modern Asian Studies*, 44 (1), pp. 29–51; Datta, Arunima: *Fleeting Agencies. A Social History of Indian Coolie Women in British Malaya*, Cambridge: Cambridge University Press 2021.

⁵⁷³ See Stoler, *Capitalism and Confrontation*, p. 28; Breman, *Koelies, Planters en Koloniale Politiek*, p. 284–307; Pols, ‘Quarantine in the Dutch East Indies’, p. 95; Haneveld, ‘From Slave Hospital to Reliable Health Care’, p. 75.

⁵⁷⁴ See Jaelani, ‘Preserving the Resources’, p. 42; Breman, *Koelies, Planters en Koloniale Politiek*, pp. 217–262; Stenberg/Minasny, ‘Coolie Legend on the Deli Plantation’; Agustono, ‘Violence on North Sumatra’s Plantations’; Darini/Anggraeni, ‘The Life of Deli Tobacco Plantation’s Workers’.

⁵⁷⁵ Pols, Quarantine in the Dutch East Indies, p. 76.

⁵⁷⁶ See Ligtenberg, Monique (2021): ‘Contagious Connections. Medicine, Race, and Commerce between Sumatra, New Guinea, and Frankfurt, 1879-1904’, in: *Comparativ* 31 (5/6), pp. 555–571.

publications allow a glimpse in the poorly recorded, early days of plantation hygiene on Sumatra's plantation belt of the late 19th century.

On June 10, 1879, Hagen signed a contract that bound him to three years' service in the plantation hospital Tandjong Morawa that belonged to the aforementioned German-Swiss Näher & Grob company. He had learned about the job opportunity in Sumatra rather by coincidence when, in early 1879, he met a man named "Dr. M." in a pub in Munich, where he had just completed his medical degree. Hagen would spend a total of 10 years on Sumatra's plantation belt.⁵⁷⁷ In addition to his employment with Näher & Grob, in 1886 he was appointed head of the civil health service (*civiel geneeskundigen dienst*) and vaccination for the entire region of Deli by the Dutch colonial government.⁵⁷⁸ On the plantation estates, as has been alluded to above, Hagen was responsible for taking care of the health of the Chinese and Javanese 'coolies' growing and processing tobacco. Moreover, he kept detailed statistics of the 'coolie' patients admitted to and treated at the plantation hospital. He seemed to have mastered the Malay language at least at a conversational level as the reports are in some parts drafted in Malay.⁵⁷⁹ A further task assigned to Hagen was to compile annual reports on the spread and nature of diseases as well as the number of patients admitted to the hospital in Tandjong Morawa. In these records, Hagen repeatedly points out the deplorable state of the estates' medical infrastructure as well as the high number of injuries inflicted on the indentured laborers by their European employers or Chinese supervisors. Moreover, Hagen notes the high death rates caused by diseases such as dysentery, malaria, or syphilis.⁵⁸⁰ "It was a true calamity, and the planters suffered great [financial] damage due to the people's inability to work",⁵⁸¹ Hagen later commented, following an economic reasoning aligned with the liberal spirit guiding the late 19th-century European exploitation of resources and labor on Sumatra. Despite his self-proclaimed efforts to curb the spread of diseases among indentured laborers, Hagen displayed a high degree of frustration triggered by the fact that many 'native' patients could not be convinced by the 'blessings' of European medicine. In at least one incident, his 'coolie' patients actively resisted treatment in the European plantation hospital. After the outbreak of a beriberi 'epidemic' in 1881/1882, that cost more than 200 indentured laborers' lives, a group of Chinese

⁵⁷⁷ See Hagen, Bernhard: 'Neun Jahre auf der Ostküste Sumatras', unpublished manuscript, c. 1889, in: Institut für Stadtgeschichte Frankfurt a. M. (ISG), S1-175, 272.

⁵⁷⁸ See 'Benoemingen', in: *Deli Courant*, 25 August 1886.

⁵⁷⁹ See, for example, Hagen, Bernhard: 'Staat darie Orang Tjina jang Maninggal Doenja Kampoeng Laboean Deli di dalam Boelan Mei 1887', in: ISG, S1-175, 245.

⁵⁸⁰ Hagen, Bernhard: 'Erster Jahresbericht des Krankenhauses Tandjong-Morawa', 1879/80, in: ISG, S1-175, 257.

⁵⁸¹ Hagen, Bernhard: 'Vortrag über seine Tätigkeit als Arzt auf Sumatra', unknown location, 1901, in: ISG, S1-175, 272.

'coolies' was at the verge of a riot, blaming Hagen for the high death rates and demanding the establishment of a Chinese hospital. Ethnic Malays, on the other hand, allegedly refused being treated in the same rooms as Chinese 'coolies' due to religious sentiments, and thus preferred to recover at home, resorting to indigenous medical therapies. Hagen had no choice but to consider the demands of his patients and arranged for the establishment of a separate Chinese hospital.⁵⁸²

In 1889, the estates owned by Näher & Grob were taken over by the Dutch Senembah Company. It was around that time that Hagen ended his employment with the hospital in Tandjong Morawa to recover in Europe from repeated illness with dysentery and malaria.⁵⁸³ Along with the plantation estates, the Senembah Company 'inherited' the existing medical infrastructure, including the "central hospital at Tandjong Morawa as well as auxiliary hospitals at Soengei Bahasa, Patoembah, Goenoenoeng Rinteh [...], and Boentoe Batoembar." According to the Company, the hospitals were mainly used to treat cholera and beriberi. Bernhard Hagen was replaced by a "competent German doctor" named Dr. Hauser, who unfortunately does not seem to have left any further traces in the archives. Despite Dr. Hauser's "competence" the health state on Sumatra's plantations displayed little sign of improvement: "Already in 1890", the Senembah Company wrote, "we suffered great losses that were attributed to the poor quality of the new 'coolies' who had come over from China" as well as the spread of beriberi that had become "epidemic", "prolonged heat", "excessive rains" and cholera and dysentery that "claimed many, many victims." Dr. Hauser was succeeded by the Dutch physicians Dr. Löbell and Dr. Voorthuis who, despite possessing "full confidence" on part of the Senembah Company, failed to improve the general health care situation.⁵⁸⁴

⁵⁸² See Hagen, 'Erster Jahresbericht des Krankenhauses Tandjong-Morawa'; Hagen, Bernhard: *Unter den Papua's. Land & Leute, Thiere & Pflanzen in Deutsch-Neu-Guinea*, Wiesbaden: Kreidel 1899, pp. 17, 50.

⁵⁸³ See Ligtenberg, 'Contagious Connections', p. 561.

⁵⁸⁴ Janssen, *Senembah Maatschappij*, pp. 42f.

German Physicians and the ‘Scientification’ of ‘Coolie’ Health Care

Bernhard Hagen and Dr. Hauser stood at the beginning of a whole series of German doctors who would put themselves at the service of European tobacco companies in Deli, Sumatra, even after most formerly German or Swiss owned estates had been taken over by larger, Dutch conglomerates. At the turn of the 20th century, complaints about widespread violence and the poor state of health on the European plantations in Sumatra were adding up. As a consequence, and to prevent further financial losses related to the spread of disease, the Senembah Company started to strategically implement policies aiming at improving the hygienic conditions on its plantations.⁵⁸⁵ The strategic improvement of plantation hygiene occurred in the larger context of the so-called ‘ethical policy’, the Dutch version of the French ‘mission civilisatrice’ or the British ‘civilizing mission’.⁵⁸⁶ One proclaimed aim of the ‘ethical policy’ was to ‘develop’ the civil health care system for the indigenous population. However, the policies implemented in the framework of the ‘ethical turn’ in governing the Dutch East Indies mainly focused on urban centers and the island of Java. This meant that on the so-called ‘outer islands’ that were outside of the purview of the colonial government, public health measures, in particular those targeting the indigenous populations, continued to be in the hands of private initiatives.⁵⁸⁷ Indeed, as recent historical research has shown, private companies were at the forefront of implementing hygiene policies to enhance workers productivity across Western States and Empires. Katharyn Oberdeck, for example, has unearthed the case of the Kohler Company, a plumbing-ware enterprise promoting American standards of living among immigrant workers in the industrial

⁵⁸⁵ See Jaelani, ‘Preserving the Resources’, pp. 41f.; Ochsendorf, ‘Colonial Corporate Social Responsibility’, p. 84.

⁵⁸⁶ For the Dutch ‘ethical policy’, see Gouda, *Dutch Culture Overseas*, pp. 23–28; Protschky, Susie (ed): *Photography, Modernity and the Governed in Late-colonial Indonesia*, Amsterdam: Amsterdam University Press 2015; Vickers, Adrian: *A History of Modern Indonesia*, Cambridge: Cambridge University Press 2005, pp. 17f., 23; Coté, Joost (1996): ‘Colonising Central Sulawesi. The ‘Ethical Policy’ and Imperialist Expansion 1890–1910’, in: *Itinerario*, 20 (3), pp. 87–107; Goss, Andrew (2009): ‘Decent Colonialism? Pure Science and Colonial Ideology in the Netherlands East Indies, 1910–1929’, in: *Journal of Southeast Asian Studies*, 40 (1), pp. 187–214; Moon, Suzanne: *Technology and Ethical Idealism. A History of Development in the Netherlands East Indies*, Leiden: CNWS Publications 2007; Locher-Scholten, Elsbeth: *Ethiek in Fragmenten. Vijf Studies over Koloniaal Denken en Doen van Nederlanders in de Indonesische Archipel, 1877-1942*, Utrecht: Hes Publishers 1981. There is an extensive body of literature on the British and French civilizing missions. Good overviews are Watt, Carey A./Mann, Michael (eds): *Civilizing Missions in Colonial and Postcolonial South Asia. From Improvement to Development*, London: Anthem Press 2011; Fischer-Tiné, Harald/Mann, Michael (eds): *Colonialism as Civilizing Mission. Cultural Ideology in British India*, London: Anthem Press 2004; Costantini, Dino: *Mission Civilisatrice. Le Rôle de l'Histoire Coloniale dans la Construction de l'Identité Politique Française*, Paris: La Découverte 2008. For the role of medicine in the ‘civilizing mission’, see Chakrabarti, Pratik: *Medicine and Empire 1600-1960*, Basingstoke: Palgrave Macmillan 2014, pp. 164–181; Lyons, Maryinez: *The Colonial Disease. A Social History of Sleeping Sickness in Northern Zaire, 1900-1940*, Cambridge: Cambridge University Press 2002.

⁵⁸⁷ See Ochsendorf, ‘Colonial Corporate Social Responsibility’, p. 84.

village of Kohler, Wisconsin.⁵⁸⁸ Moreover, in his seminal study on the production of knowledge about malaria in colonial and postcolonial Vietnam, the historian Michitake Aso demonstrates how medical researchers from the Pasteur Institute collaborated with the Michelin rubber company to reduce the high mortality rates on the newly established plantations in southern Vietnam.⁵⁸⁹

On Sumatra, the company-initiated improvement of health care and hygiene was placed in the hands of the German physician W.A.P. Schüffner. Wilhelm Schüffner was born in Germany in 1867. He had conducted his studies of medicine in Würzburg and in Leipzig after which he “prepared himself through a five-year clinical assistantship, including the study of [laboratory] bacteriology, for the arduous task that called him to the Senembah tobacco plantations on Sumatra’s east coast in 1895.”⁵⁹⁰ In existing historiography, Schüffner’s arrival on Sumatra in 1897 commonly marks a turning point in the sanitary and health conditions on Sumatra’s plantations. One of the most important ‘achievements’ Schüffner is remembered for is the centralization of the hospital system. Upon his arrival, smaller hospitals were spread across the company’s various estates. Schüffner considered this system to be inefficient as the European company physicians had to travel potentially long distances to reach the individual estates. In a response to Schüffner’s criticism, the Senembah Company established a central hospital in Tandjong Morawa. Many of the other plantation conglomerates on Sumatra’s plantation belt would soon follow the pattern established by Schüffner. The Holland America Plantation Company as well as the Deli Company, for example, would soon set up their own centralized health care systems. The latter’s centralization efforts were largely carried by one of Schüffner’s compatriots, the German Dr. Georg Maurer. It was also on Maurer’s initiative that, in 1906, the Deli Company, the Senembah Company, and the Medan Tobacco Company joined forces to found the Pathological Laboratory in Medan. Apart from conducting experimental research on diseases prevalent among indentured laborers such as malaria or dysentery, the laboratory produced vaccines and offered space for guest researchers. Moreover, most central hospitals established their own laboratory infrastructure to enhance their ‘scientific’ approach to ‘coolie’

⁵⁸⁸ See Oberdeck, Kathryn (2010): ‘Of Tubs and Toil. Kohler Workers in an Empire of Hygiene, 1920-2000’, in: *International Review of Social History* 55 (3), pp. 447–483.

⁵⁸⁹ See Le Roux, Pierre: *Alexandre Yersin, un Passe-Muraille (1863-1943). Vainqueur de la Peste et de la Diphtérie, Explorateur des Hauts Plateaux d’Indochine. Suivi du Récit d’Exploration, Sept Mois chez les Mois*, par Alexandre Yersin, Paris: Connaissances et Savoirs, 2007; Aso, Michitake (2013): ‘Patriotic Hygiene. Tracing New Places of Knowledge Production about Malaria in Vietnam, 1919-75’, in: *Journal of Southeast Asian Studies* 44 (3), pp. 423–443. Also see Nandini Bhattacharya’s work on entrepreneurial incentives for malaria research on north Bengali tea plantations: Bhattacharya, Nandini (2011): ‘The Logic of Location. Malaria Research in Colonial India, Darjeeling and Duars, 1900-30’, in: *Medical History* 55 (2), pp. 183–202; Bhattacharya, *Contagion and Enclaves*, pp. 99–118.

⁵⁹⁰ ‘Prof. Dr. Schüffner’, in: *Deli Courant*, 13 January 1934.

health care.⁵⁹¹ The health care initiatives implemented by Schüffner and Maurer were celebrated as a great success: Between 1897 and 1907, the mortality rates among indentured laborers employed with the Senembah Company allegedly dropped from 60% to 9.5% per annum.⁵⁹²

Despite being remembered as ‘pioneers’ of plantation hygiene, Schüffner and Maurer were not particularly exceptional in seeking career opportunities in Sumatra’s plantation hospitals. In the years to follow Schüffner’s arrival, several physicians from Germanophone Europe sought employment with the hospitals and laboratories on Sumatra’s plantation belt. One of them was the German Gustav Baermann. Baermann was born in Breslau, Silesia (today’s Wrocław), in 1877. After having obtained his doctoral degree from the University of Breslau, in 1905, he accompanied the German physician Albert Neisser, under whom he had previously studied, to Java to study the spread of syphilis among apes on behalf of the German Empire, whose conquest of colonies in East Africa and the Pacific resulted in growing demands for the scientific investigation of disease prevalent in the tropics (see chapter 4.3.1).⁵⁹³ As a result of this study trip, in 1906, accompanied by his wife, Baermann joined the Serdang Doctor Fonds (SDF), where he would work as a chief physician for the central hospital Petoemboekan.⁵⁹⁴ The SDF consisted of a merger of about 20 plantation estates, who employed around 9000 indentured laborers and 100 European staff.⁵⁹⁵ The hospital itself consisted of 10 pavilions, each providing room for 42 patients, as well as a separate operating theatre, and a large laboratory for blood and urine tests as well as animal experiments.⁵⁹⁶ Obviously, Baermann could not manage the medical care of 9000 indentured laborers single-handedly. It was for that purpose that the hospital further employed 4 European assistants as well as “25 native, mainly Javanese employees” who were responsible for patients’ examinations and care.⁵⁹⁷ Chinese and Javanese assistants were also employed in the laboratories, according to a report by Schüffner and his Dutch colleague Willem Abraham Kuenen. For the examination of blood and stool, for

⁵⁹¹ See Modderman, *Gedenkboek*, p. 213; Janssen, *Senembah Maatschappij*, pp. 43f.; Haneveld, ‘From Slave Hospital to Reliable Health Care’, pp. 79–82; Jaelani, ‘Preserving the Resources’, pp. 46f.; Agustono/Junaidi/Affandi, ‘Pathology Laboratory’; Pols, ‘Quarantine in the Dutch East Indies’, pp. 97–100; Ochsendorf, ‘Colonial Corporate Social Responsibility’, pp. 88f.

⁵⁹² See Pols, ‘Quarantine in the Dutch East Indies’, p. 96.

⁵⁹³ See ‘Soerakarta 23 Januari 1905’, in: *De Nieuwe Vorstenlanden*, 23 January 1905; ‘Prof. Dr. Baermann’, in: *Deli Courant*, 13 January 1934.

⁵⁹⁴ See ‘Passagiers Vertrokken’, in: *De Sumatra Post*, 11 December 1906; Baermann, Gustav: ‘Die Assanierung der javanischen und chinesischen Arbeiterbestände der dem Serdang-Doctor-Fond, Deli-Sumatra, angeschlossenen Pflanzungsgebiete’, in: *Beiheft zum Archiv für Schiffs- und Tropenhygiene* 16 (5), pp. 509–536, here p. 509.

⁵⁹⁵ See Baermann, ‘Die Assanierung der javanischen und chinesischen Arbeiterbestände’, p. 509.

⁵⁹⁶ See *ibid.*, pp. 514f.

⁵⁹⁷ *Ibid.*, 515.

example, they relied on a Javanese named Mubal, the Chinese laboratory assistant Lim Fung Siong prepared the tissue for microscopic investigations and maintained the x-ray apparatus, and an unnamed Chinese employee oversaw the entire operating theatre. “We have had much less difficulty with the recruitment of these people,” Schüffner and Kuenen praised these contributions “than with the actual nursing staff.”⁵⁹⁸

One can only imagine the enormous demand for qualified European medical experts that accompanied the steady growth of the plantation economy on Sumatra’s east coast. In 1903, a total of 91’928 indentured laborers were employed by 146 companies.⁵⁹⁹ The historians Budi Agustono, Junaidi and Kiki Maulana Affandi have identified a total of 22 hospitals and 23 physicians employed for the European plantation conglomerates in 1910. These numbers rose to 47 hospitals and 53 physicians in 1930. Whether hospital assistants and visiting researchers are included in these figures, is not implied in the original source.⁶⁰⁰ Moreover, the percentage of Swiss and German physicians is hard to assess as I was not able to trace the archives of all the individual estate and company hospitals, and many of these archives most likely were lost in the course of history. Besides, many of the lesser-known or lower-ranking plantation physicians did not leave behind a conclusive paper trail. Nevertheless, there is ample evidence to assume a strong German-Swiss presence among Sumatra’s medical personnel. The Swiss physician Dr. Henggeler, for example, completed his practical medical exam in Batavia in 1896 in order to take up a post with the plantation hospital in Tebing Tinggi, Deli, where he would work for a little more than six years before returning to Switzerland (see chapter 4.3.2).⁶⁰¹ The German Dr. H. Dürk was commissioned by the Deli Company in the early 1900s to study diseases prevalent on its estates.⁶⁰² Kurtz Surbek, a physician from Basel, too, heard about the possibility of establishing himself as a plantation doctor in Sumatra and settled on the Swiss-managed, British-owned plantation estate Batang Saponggol in 1920 with his wife Gret. Gret Surbek and her husband would spend a total of 25 years in the Dutch East Indies, first on Sumatra and then on Java, where they ran a sanatorium.⁶⁰³ Lüneburg-born Henry Heinemann completed his medical degree in 1908 in Munich. He became appointed chief physician for the

⁵⁹⁸ Schüffner/Kuenen, ‘Die gesundheitlichen Verhältnisse’, p. 214.

⁵⁹⁹ Numbers based on Berman, *Koelies Planters en Koloniale Politiek*, p. 258.

⁶⁰⁰ See Agustono/Junaidi/Affandi, ‘Pathology Laboratory’, p. 5. Their figures are based on Kouwenaar, W. (1936): ‘De Gezondheidszorg ter Oostkust van Sumatra 1911-1935’, in: *Geneeskundig Tijdschrift voor Nederlandsch-Indië (GTNI) Feestbundel*, pp. 286–302, here p. 287.

⁶⁰¹ See ‘Telegrammen aan De Locomotief’, in: *De Locomotief*, 27 November 1896; ‘Dr. Oskar Henggeler’, in: *De Sumatra Post*, 28 December 1903.

⁶⁰² See Ochsendorf, ‘Colonial Corporate Social Responsibility’, p. 90.

⁶⁰³ The story of the Surbeks is recounted in the published memoirs of Gret Surbek. See Surbek, Gret: *“Im Herzen waren wir Indonesier”*. *Eine Bernerin in den Kolonien Sumatra und Java, 1920-1945*, Zürich: Limmat Verlag 2007.

central hospital in Tandjong Morawa in 1923, after having worked as a physician in British Ceylon for several years.⁶⁰⁴

The German-speaking medical community on Sumatra seemed to have been rather tightly knit. In many instances, and despite being employed with different companies, Swiss and German plantation physicians collaborated in the laboratory in Medan or co-authored research publications on their latest findings. Moreover, physicians were active members of Sumatra's 'Deutscher Verein' (German Association).⁶⁰⁵ In 1908, Dr. Georg Maurer was named honorary member of the Association.⁶⁰⁶ After he had passed away in 1927, a contemporary observer noticed that "apart from the staff of the Deli Maatschappij" several "representatives of the Deutsche Verein" attended Maurer's funeral. The eulogy for Maurer was given by a Mr. Hopmann in the name of the German Club, who "honored the deceased as a human and a German."⁶⁰⁷ In the late 1920s, Gustav Baermann would take over the presidency of the association and organize various events for the German community in the Dutch East Indies.⁶⁰⁸ Through their affiliation with the German Club, physicians would fully become part of the German diaspora in Sumatra, consisting of plantation owners, planters, and medical experts all, in their own ways, contributing to the exploitation of labor and resources in the Dutch colonial government's 'ethical' era.

⁶⁰⁴ See 'Dr. H. Heinemann Gehuldigd', in: *De Indische Courant*, 16 June 1937; Bühringer, Christian (1916): 'Während des Krieges in Ceylon', in: *Süddeutsche Monatshefte* 13, pp. 44f.

⁶⁰⁵ According to the historian Andreas Zangger, such national associations in Southeast Asia acted as support network for their members and served to maintain (cultural) ties with the homeland. They would organize common activities for their members and give them a platform to speak their mother tongue. See Zangger, *Koloniale Schweiz*, p. 417.

⁶⁰⁶ See 'Deutscher Verein', in: *De Sumatra Post*, 17 February 1908.

⁶⁰⁷ 'Begräfnis Georg Maurer', in: *De Sumatra Post*, 27 May 1927.

⁶⁰⁸ See 'Der Deutsche Verein', in: *De Sumatra Post*, 16 October 1929; 'Dr. Gustav Baermann', in: *Deli Courant*, 29 January 1932.

4.2 Race, Medicine, and the Commodification of ‘Coolie’ Labor and Bodies

In the plantation hospitals and laboratories, physicians would formulate concrete suggestions on how to improve the health of the indentured laborers employed with European tobacco magnates. Their policy recommendations were considered by the plantation companies when planning the recruitment, working conditions, and housing of indentured laborers.⁶⁰⁹ However, as the historian Warwick Anderson reminds us in his study on public health in the colonial Philippines, imperial hygiene always entailed “a flexible, and sometimes unstable, framework for constituting racial capacities and colonial bodies. Indeed, racialized agency was constructed and contested in the colonial Philippines more through the projects of hygiene and bodily reform than any other means [...]”⁶¹⁰ The hygiene policies established by plantation physicians on Sumatra, too, were neither ‘neutral’, nor did they primarily follow philanthropic considerations. Rather, the medicalization of indentured labor directly shifted perceptions of indentured laborers’ bodies, as well as their alleged racial predisposition to work in tropical environments. Moreover, as has been asserted by the historian Hans Pols, “Deli medicine was medicine within a carceral society, forcibly applied in the interests of maintaining labor productivity and reducing the high expenses associated with labor recruitment and loss of manpower because of disease.”⁶¹¹ In order to maintain productivity on the plantations, physicians experimented with the living conditions provided for indentured laborers, turning ‘coolie’ housing into a laboratory where ‘novel’ hygiene policies could be tested and improved. In what follows, I will elaborate on these biopolitical implications of plantation hygiene from the late 19th century onwards.

Labor Productivity and the Racial Construction of ‘Coolie’ Bodies

Through the labor migration from Java and China, the previously only sparsely populated east coast of Sumatra became one of the most ethnically diverse regions in the Dutch East Indies (see chapter 4.1.2). The ethnic diversity among their ‘coolie’ patients did not go unnoticed by physicians in the plantation hospitals. In the statistic he kept for the hospital in Tandjong Morawa in the late 1870s and 1880s, Dr. Bernhard Hagen recorded the age, gender, and race

⁶⁰⁹ See Jaelani, ‘Preserving the Resources’, p. 40.

⁶¹⁰ Anderson, *Colonial Pathologies*, p. 2

⁶¹¹ Pols, ‘Quarantine in the Dutch East Indies’, p. 100.

("bangsa") of the Chinese and Javanese individuals under his care.⁶¹² It was on the basis of these statistics that Hagen came to the conclusion that susceptibility to certain diseases was inherently linked to racial predispositions. For example, Hagen believed that beriberi, which he considered an infectious disease,⁶¹³ affected certain races more than others. "The Chinese and Javanese are the most likely to contract it", he wrote, "after them the immigrated Malays, at the most seldom the Indians (Tamils) and Europeans." In his view, only the "native Delimalay" was completely immune to the disease.⁶¹⁴ Hagen was convinced that, due to these racial differences, the physician in the tropics "must quite necessarily and as a matter of course study the ethnographic peculiarities of his patients."⁶¹⁵ According to Hagen, a further advantage of taking into account these alleged "ethnographic particularities" was that the various tasks that had to be carried out on the plantations could be assigned according to particular racial traits. He asserted that "only the born gardener, the Chinese" understands to "properly handle the fine, expensive tobacco leaves." Native Malays and Javanese, on the other hand, were supposed to be suited for construction work, a task he deemed the Chinese utterly unfit for. "This is how one thing depends on the other", Hagen concludes, "and you have to pay careful attention if you want to work economically and with good results." More importantly though, "of all the foreign peoples, the Javanese and Malays have performed best in terms of health. [...] The Chinese, as far as they were healthy, sturdy, and habituated to working in the fields, also held up well." Nevertheless, Hagen advises planters to make sure that even 'coolies' recruited among these "sturdy" races were not of "inferior quality" for the pathogenic conditions on the plantations followed the rules of "'natural selection' and the 'survival of the fittest'".⁶¹⁶ Hagen's medically based endorsement of the racial division of labor on Sumatra bears a striking resemblance to discourses surrounding the racialized labor regime in British Malaya at the time.⁶¹⁷

As has been argued in the previous chapter, racial thought was by no means eradicated through the medical universalism proposed by laboratory bacteriology and parasitology,

⁶¹² See Hagen, 'Staat darie Orang Tjina'.

⁶¹³ For the contestation of the aetiology of beriberi, see previous chapter.

⁶¹⁴ See Hagen, *Unter den Papua's*, pp. 46f. For the relation between race and medicine more broadly see Harrison, Mark (1996): "'The Tender Frame of Man": Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860', in: *Bulletin of the History of Medicine* 70 (1), pp. 68-93; Seth, Suman: *Difference and Disease. Medicine, Race, and the Eighteenth-Century British Empire*, Cambridge: Cambridge University Press 2018.

⁶¹⁵ Hagen, 'Vortrag über seine Tätigkeit als Arzt auf Sumatra'.

⁶¹⁶ Hagen, *Unter den Papua's*, pp. 37f.

⁶¹⁷ See Kaur, Amarjit (2006): 'Indian Labour, Labour Standards, and Workers' Health in Burma and Malaya, 1900-1940', in: *Modern Asian Studies* 40 (2), pp. 425-475, here pp. 460-474; Amrith, Sunil S. (2010): 'Indians Overseas? Governing Tamil Migration to Malaya 1870-1941, in: *Past & Present* 208 (1), pp. 231-261, here pp. 242-244.

allegedly liberating the medical sciences from any ideological component. This applies just as much to the strategic laboratory investigation of plantation hygiene on Sumatra implemented by Schüffner, Maurer et al. In their report on the health conditions on the Semenbah Company's plantation, Schüffner and Kuenen extensively elaborate on how the careful racial division of labor greatly benefits indentured laborers' health. "The Javanese", for example, "works on the fields, does the canal and drainage work, builds the roads and constructs the necessary barns and other buildings." The "uniformity" of these tasks made them particularly "healthy", and European planters could make sure that "the people are not easily overworked, a danger which in any case less affects the Javanese with his more phlegmatic temperament."⁶¹⁸ A further health-related advantage of employing Javanese 'coolies' was that he "comes to a country that is not essentially different from his homeland, whereas the Chinese must first acclimatize, i.e. according to our modern understanding, he must first come to terms with the diseases and pathogens that prevail here." Moreover, "the addiction to wealth is particularly strong among the Chinese." This, according to Schüffner and Kuenen, resulted in the fact that "the Chinese showed little consideration for his health" and in some instances "literally works himself to death. The Javanese, on the other hand, values rest much more highly than the earnings; he lets even considerable extra earnings slide if their acquisition disturbs his leisurely outlook on life."⁶¹⁹ By depicting the Chinese as 'greedy' and 'hungry for money' and the Javanese as 'lazy' and 'idle', Schüffner and Kuenen followed historically grown racial stereotypes that were prevalent around 1900.⁶²⁰ These stereotypes directly informed health-related policy making on the plantations. In order to 'protect' Chinese laborers from their racial predisposition to overwork and to potentially jeopardize their health, the European plantation conglomerates followed the physicians' advice and closely regulated their working hours and employment conditions. On the Senembah estates, in the first year of their employment Chinese laborers were hired only on a daily basis. After their first year on Sumatra had passed, and if they proved

⁶¹⁸ Schüffner/Kuenen, 'Die gesundheitlichen Verhältnisse', pp. 171f.

⁶¹⁹ Ibid., p. 188.

⁶²⁰ For European perceptions of Chinese indentured laborers see Benton, *Chinese Indentured Labour in the Dutch East Indies*. For Javanese laborers' alleged 'laziness', see Hoefte, Rosemarijn (2014): 'Cleansing the World of the Germ of Laziness. Hygiene, Sanitation, and the Javanese Population in Suriname', in: *História, Ciências, Saúde-Manguinhos* 21 (4), pp. 1437–1455. For racial stereotypes in the Dutch East Indies more broadly, see Lutikhuis, Bart (2013): 'Beyond Race. Constructions of "Europeanness" in Late-Colonial Legal Practice in the Dutch East Indies', in: *European Review of History* 20 (4), pp. 539–558. For the transimperial dimension of racialized labour recruitment, see Lindner, Ulrike: 'Indentured Labour in Sub-Saharan Africa (1870-1918). Circulation of Concepts between Imperial Powers', in: Damir-Geilsdorf, Sabine et al. (eds): *Bonded Labour. Global and Comparative Perspectives (18th-21st Century)*, Bielefeld: Transcript 2016, pp. 59–82.

to be accustomed to the harsh working conditions, they were, like the Javanese, granted multi-year contracts.⁶²¹

Meanwhile, the labor immigration to Sumatra as well as increased interventions into the local environment resulting from the tobacco and rubber cultivation significantly fostered the spread of epidemic diseases such as malaria.⁶²² At the same time, the discovery of invisible disease agents in the aftermath of the ‘bacteriological revolution’ was accompanied by growing anxieties surrounding global migration movements. Racialized bodies, in particular, were increasingly seen as potential carriers of pathogenic microorganisms whose movement needed to be closely monitored.⁶²³ In the eyes of plantation physicians, it was thus of the utmost importance to make sure that only the ‘healthiest’ and ‘sturdiest’ among the Javanese and Chinese ‘races’ immigrated to Sumatra’s east coast.⁶²⁴ For this purpose, in 1899, the Deli Planters’ Association established a quarantine station on an island five hours off the coast of Belawan where newly recruited ‘coolies’ would arrive before taking up their employment on the European plantations.⁶²⁵ In addition, Schüffner and Kuenen write, “[b]oth [the Chinese and Javanese] races undergo medical examinations at their home port, whereby the weak and sick should be eliminated.”⁶²⁶ They do however regret that such careful selection cannot be guaranteed in the event of an insufficient supply of workers.⁶²⁷ Gustav Baermann, too, writes how “[i]n times when the demand for workers is not too high, a careful selection is made by the physician in the recruitment offices on Java and inferior material is put aside. Under these circumstances, the physical and health-related quality of the newly recruited workers is

⁶²¹ See Schüffner/Kuenen, ‘Die gesundheitlichen Verhältnisse’, p. 202.

⁶²² In a similar vein, the historian Sheldon Watts has linked the spread of malaria in British India to colonial infrastructure projects and related state interventions into the natural environment. See Watts, Sheldon (1999): ‘British Development Policies and Malaria in India 1897-c. 1929’, in: *Past and Present* 165, pp. 141–181. See also Gilmartin, David: *Blood and Water. The Indus River Basin in Modern History*, Oakland: University of California Press 2015.

⁶²³ See, for example, Bashford (ed), *Medicine at the Border*; Roy, Rohan Deb: *Malarial Subjects. Empire, Medicine and Nonhumans in British India, 1820-1909*, Cambridge: Cambridge University Press 2017, p. 134; Dube, Francis (2019): ‘Public Health at the Zimbabwean Border. Medicalizing Migrants and Contesting Colonial Institutions, 1890-1960’, in: *Histoire Sociale/Social History* 52 (105), pp. 93–108; Molina, Natalia (2011): ‘Borders, Laborers, and Racialized Medicalization. Mexican Immigration and US Public Health Practices in the 20th Century’, in: *American Journal for Public Health* 101 (6), pp. 1024–1031; Korman, Gerd (2001): ‘When Heredity Met the Bacterium. Quarantines in New York and Danzig, 1898-1921’, in: *Leo Baeck Yearbook* 46, pp. 243–276; Birn, Anne (1997): ‘Six Seconds per Eyelid. The Medical Inspection of Immigrants at Ellis Island, 1892-1914’, in: *Dynamis* 17, pp. 281–316.

⁶²⁴ In the testimonies of Gustav Baermann, for example, Javanese and Chinese immigrants are described as “carriers” [of diseases], explicitly linking their migration to the spread of diseases. See Baermann, Gustav: ‘Serdang Doktor Fonds. Hospitaal Petoemboekan en Serbadjadi Oostkust van Sumatra: Rapport VIII-XII 1914-1918’, in: Leiden University Library, Colonial Sources (KIT) Royal Tropical Institute, G 05-11/12, p. 18.

⁶²⁵ See Pols, ‘Quarantine in the Dutch East Indies’, p. 92.

⁶²⁶ Schüffner/Kuenen, ‘Die gesundheitlichen Verhältnisse’, p. 181.

⁶²⁷ See *ibid.*, p. 183.

excellent.”⁶²⁸ Once they arrived on the plantations, Chinese and Javanese workers were obliged – as stipulated by the coolie ordinance – to undergo regular health examinations in the central hospitals. In the context of these standard examinations, Gustav Baermann provided the planters of the Serdang Doktor Fonds with a report on the “average quality” of their ‘coolies’.⁶²⁹ Furthermore, Baermann regularly examined the workers’ blood to identify “inferior” [sic!] individuals who would be ordered to be examined more frequently.⁶³⁰ “Unfit workers, and especially germ carriers,” were eventually “sent back home at the company’s expense after being treated unsuccessfully; they are no longer allowed to enter the enterprises.”⁶³¹ In addition, once a worker fell ill from a bacterial infection, their stool was examined three times at an interval of six to 10 days, and were “not discharged from the hospital before they are free from germs.” Again, if their bodies did not turn completely germ-free, they were forced to return to Java.⁶³²

Overall, the racial division of labor on the plantations as well as the close regulation of ‘coolie’ migration were celebrated as a great success at the time. Schüffner and Kuenen, for example, compared the mortality rates of Javanese soldiers in the KNIL with the health condition of Javanese plantation workers employed for the Senembah Company. They concluded that the centralization of Deli’s hospital system from 1904 to 1907 had such a profound impact on the indentured laborers’ condition that their overall health surpassed that of the KNIL soldiers, despite the latter having access to the government-funded army hospitals.⁶³³ They even go as far as to claim that the mortality rates on the Senembah plantations are comparable with numbers in Switzerland and were significantly lower than in the neighboring Singapore or Malacca.⁶³⁴ Joining in on Schüffner and Kuenen’s celebratory mood, Baermann stresses the great “success” in dropping mortality rates that he directly linked to the “general control of our coolies which went hand in hand with the stricter hospital quarantine of all newly arriving coolies.”⁶³⁵ These successes, however, came at a price. Not only did they reinforce colonial presumptions on the ‘racial particularities’ of Javanese and Chinese bodies. Escalating concerns surrounding the migration of racialized individuals, particularly in relation to their perceived role as potential ‘disease carriers’, led to stringent limitations being imposed

⁶²⁸ Baermann, ‘Die Assanierung der javanischen und chinesischen Arbeiterbestände’, p. 8.

⁶²⁹ Ibid., p. 9.

⁶³⁰ Ibid., p. 12.

⁶³¹ Ibid., p. 9.

⁶³² Baermann, ‘Serdang Doktor Fonds’, p. 115.

⁶³³ See Schüffner/Kuenen, ‘Die gesundheitlichen Verhältnisse’, pp. 189f.

⁶³⁴ See *ibid.*, p. 185f.

⁶³⁵ See Baermann, ‘Serdang Doktor Fonds’, p. 5.

on the mobility of indentured laborers and curtailed their ability to make autonomous decisions regarding their health.

Model Villages and the Making of the ‘Modern’ Worker

The medical surveillance of indentured laborers’ bodies did not end with their (healthy) arrival on the European plantations. Rather, European physicians’ conviction that Javanese and Chinese workers inherently lacked basic understandings of ‘modern’ hygiene directly translated into biopolitical interventions into their everyday lives. As has been convincingly argued by the historian Warwick Anderson, Western observers regarded Southeast Asian individuals as “infantile, immature subjects, unready yet for self-government of body or polity.” Nevertheless, the presumed division between ‘modern Europeans’ and ‘infantile natives’ was not fixed. In the eyes of contemporary European observers, ‘natives’ “might eventually be trained to behave hygienically [...] and therefore embark on the career of the probationary citizen-subject, on becoming modern.”⁶³⁶

European plantation physicians on Sumatra, too, believed that their patients were in need of active guidance in embracing a ‘modern’ and ‘hygienic’ lifestyle. An integral aspect of this approach involved the deliberate design of architectures and environments aimed at encouraging individuals to embrace healthy behavioral patterns. As has been noted by the historians Robert Peckham and David Pomfret, “new, laboratory-based understandings of infection [...] provided often contradictory rationales for the re-creation of colonial space.”⁶³⁷ As a consequence, in the early 20th century, the planning of both public spaces and the private sphere became increasingly informed by medical considerations.⁶³⁸ On Sumatra’s plantation belt, such spatial hygiene measures primarily targeted the housing conditions of indentured laborers. On the surface, these measures were aimed at curbing the spread of diseases, ensuring the well-being of workers, and ultimately safeguarding labor productivity. At the same time, the newly established ‘coolie’ housing regimes heavily drew on the architecture of military

⁶³⁶ Anderson, *Colonial Pathologies*, p. 3.

⁶³⁷ Peckham/Pomfret, ‘Introduction. Medicine, Hygiene, and the Re-ordering of Empire’, p. 1.

⁶³⁸ See Peckham/Pomfret (eds), *Imperial Contagions*; Peckham, Robert (2014): ‘Hygienic Nature. Afforestation and the Greening of Colonial Hong Kong’, in: *Modern Asian Studies* 49 (4), pp. 1177–1309; Curtin, Philip (1985): ‘Medical Knowledge and Urban Planning in Tropical Africa’, *American Historical Review* 90 (3), pp. 594–613; Bremmer, G. A. (ed): *Architecture and Urbanism in the British Empire*, Oxford: Oxford University Press 2016; Njoh, Ambe: *Urban Planning and Public Health in Africa. Historical, Theoretical and Practical Dimensions of a Continent’s Water and Sanitation Problematic*, Farnham: Ashgate 2012.

barracks. The military character of the workers' living environment is echoed in an article published in the *Deli Courant* in 1934, where the European health policies on Sumatra are remembered as "piracy hygiene", a "semi-military system" that could only be implemented because the "immigrants enjoyed the same freedom and were subject to the same discipline as soldiers in barracks and sailors in ships."⁶³⁹ Such comparisons thus directly mirror paternalistic, European views on lower-class soldiers who, akin to plantation workers, were believed to be in need of perpetual surveillance and control due to their alleged inability to act and behave healthy, temperate, and rational (see chapter 2).

Schüffner and Kuenen speak of a "duty" on part of the tobacco companies who take "the people out of their natural context" and thereby subjects them to the "health disadvantage that arises from barracking." Indeed, the fact that indentured laborers were commonly housed in rather cramped, military-like barracks posed a particular concern to plantation physicians as the "damage resulting from the non-observance [of hygienic living conditions] accumulates with the mass of residents."⁶⁴⁰ Consequently, Schueffner and Kuenen formulated a comprehensive set of rules aimed at enhancing the health conditions within the workers' barracks. At its fundamental core, their recommendations emphasized the importance of designing houses to be "airy, bright, and dry". By prioritizing ample ventilation, the elimination of "damaging odors" was to be achieved, ensuring a healthier living space. Incorporating sufficient natural light into the design was considered crucial as bacteria tended to avoid well-lit environments. Lastly, maintaining a dry atmosphere was essential, as excessive humidity could foster the growth of microbes.⁶⁴¹ Another important aspect of their endeavor was to guarantee that workers had access to sterilized water. In order to ensure the water's purity, Schüffner and Kuenen advised the Senembah Company to construct securely enclosed well shafts. Furthermore, they recommended that regular bacteriological examinations be conducted on the well water to maintain its quality. "Taken as a whole", they commented, "the construction of wells is an art which stands on a high level of perfection in Europe, and which can be transferred to Sumatra with only insignificant changes." Convinced of the civilizational advantages of European hygiene, they would add that it was time "to leave the ground of the primitive even in the case of well installations and to begin to make European demands."⁶⁴² Again, these recommendations put forth by Schueffner and Kuenen bear striking resemblance to barrack reforms in British India in the second half of the 19th century that entailed meticulous guidelines

⁶³⁹ 'Prof. Dr. Baermann', in: *De Deli Courant*, 13 January 1934.

⁶⁴⁰ Kuenen/Schüffner, 'Die gesundheitlichen Verhältnisse', p. 232.

⁶⁴¹ See *ibid.*, p. 225.

⁶⁴² See *ibid.*, pp. 217f.

concerning water provisions, sewage systems, hygiene, as well the construction of hospitals and soldier housing, aiming at improving the health of the colonial troops.⁶⁴³

The health policies recommended by Schueffner and Kuenen were readily embraced by the Senembah Company. The first reconstructions of the Senembah Company's workers' dwellings had already been completed in 1898 and 1899, only one year after Schüffner's arrival in Sumatra. "Where new buildings were necessary", Schüffner and Kuenen wrote, "our recommendations were generally followed." The improvement of the plantation workers' overall health condition to them proved that no additional modifications to their hygiene-related housing rules were required.⁶⁴⁴ Nevertheless, they strongly distrusted the laborers' ability to appropriately take advantage of the hygienic infrastructures 'provided' for them. "The best dwellings are useless", they wrote, "if they are treated in an incomprehensible way. The worker does not understand the least of the intention behind the many windows [...]. The houses must therefore be constantly inspected, and it is one of the duties of the masters to ensure that the windows are used properly."⁶⁴⁵ Indeed, Schüffner and Kuenen held onto a strong belief that the Malay, Javanese, and Chinese 'races' were inherently unhygienic and needed to be coerced into changing their habits. This becomes particularly evident when they share their observation that the "natives" resisted disposing of their excrements in what European physicians considered to be a 'hygienic' manner. Expressing their frustration, Schüffner and Kuenen lamented that "until people comprehend the perilous nature of unknowingly spreading a hazardous toxin near their homes – the supposedly harmless waste they produce – [...] our efforts to combat this detrimental practice [of inappropriate excrement disposal] will continue to be fragmented and incomplete." They thus strongly urged the Senembah Company to "educate the people, with a particular focus on the Javanese community, as they bear significant responsibility for the future." To avert the "greatest of damage" in the meantime, they advocated for the implementation of "more stringent" measures, specifically emphasizing the need of close "surveillance" and "punishment" in case workers failed to adhere to the hygiene recommendations.⁶⁴⁶

⁶⁴³ See Wald, Jessica: *Vice in the Barracks. Medicine, the Military and the Making of Colonial India, 1780-1868*, London: Palgrave Macmillan 2014, pp. 84–156; Baron, Jessica L: *Reforming the Raj. Florence Nightingale's Biomedical Liberalism in British India*, PhD thesis, University of Notre Dame, Indiana 2013; Harrison, Mark: *Public Health in British India. Anglo-Indian Preventive Medicine 1859-1914*, Cambridge: Cambridge University Press 1994, pp. 60–72.

⁶⁴⁴ Kuenen/Schüffner, 'Die gesundheitlichen Verhältnisse', p. 224.

⁶⁴⁵ *Ibid.*, p. 237.

⁶⁴⁶ *Ibid.*, p. 238.

Despite such calls for more stringent measures, indentured laborers did not just willingly accept the housing and hygiene rules imposed on them by European plantation physicians. Rather, there is ample evidence that, in many instances, the European plantation companies had to consider the workers' demands in designing the housing spaces. First, due to religious sentiments and cultural differences, Chinese and Javanese workers refused to be housed under the same roof. Chinese 'coolies', most of whom remained celibate during the time of their contracts, were housed in "small houses, designed for about 10 to 15 people each, with three housing units invariably grouped together alongside an elegant little residence designated for the Chinese overseer."⁶⁴⁷ Second, the fact that "a significant number of the [Javanese] workers, particularly the older ones, had families" physicians felt compelled "to customize the accommodations to their needs." To accommodate their family circumstances, Javanese 'coolies' were commonly housed in larger dwellers consisting of several spacious rooms. The individual rooms were then partitioned into two separate compartments or chambers that could be assigned to one family or shared by two bachelors. Moreover, Schüffner and Kuenen advised the Senembah Company to "increase the size of the kitchens to allow the wives to comfortably tend to their children, or to provide an optional hall that can serve as a playground etc."⁶⁴⁸

While – willingly or not – taking into account the Javanese workers' preferred family structures, plantation physicians expressed great concerns towards the more 'immoral' encounters between 'coolies.' Like in the military camps (see chapter 2), prostitution was a widespread phenomenon in the surroundings of the workers' barracks. According to Gustav Baermann, it was mainly the workers' wives who were "handed to another man by their husband for money" that were responsible for the spread of venereal diseases such as syphilis. As he does not expect the "local and sexual conditions to change", prostitution and syphilis to Baermann provides yet another argument for the "strict control and surveillance" of 'coolies.'⁶⁴⁹ Moreover, like Schüffner and Kuenen, Baermann compiled regular medical reports for the Serdang Doktor Fonds, outlining designs 'hygienic' 'coolie' housing that promised to enhance the overall health conditions and ensured the consistent availability of labor force for the plantations. Baermann was convinced that the rigorous implementation of his recommendation would lead to an increase of "high-quality workers" ("beste arbeiders") while decreasing the number of "mediocre" ("middelmatig") and "severely infected" ("zwaar geïnfecteerden") "coolies".⁶⁵⁰ In 1927, Baermann presented the results of his efforts at the First

⁶⁴⁷ Ibid., p. 233.

⁶⁴⁸ Ibid., pp. 235f.

⁶⁴⁹ Baermann, 'Die Assanierung der javanischen und chinesischen Arbeiterbestände', pp. 20–23.

⁶⁵⁰ Baermann, 'Serdang Doktor Fonds', pp. 64f.

Hygiene Exhibition of the Dutch East Indies in Bandung. He illustrated the perks of ‘hygienic’ ‘coolie’ housing with the fictional story of a Javanese woman named Soeripop. Every day, after having finished working for the plantation company, Soeripop washes her clothes in a water barrel. However, “she stands on the wet ground with bare feet, not yet knowing that underneath her lie the larvae of hookworms, penetrating through her bare feet and entering through the bloodstream and lungs to the intestines where they can gradually induce the most severe symptoms of the hookworm disease.” “Fortunately” for Soeripop, Baermann adds, “she has ended up in a company where medical advice and careful supervision are in high regard, enabling conditions in which the hookworm disease cannot affect her, implemented through regular worm cures, through the improvement of her accommodation, through cement screeding of floors, rooms, khaki limah [hallways], and kitchens, and by means of constructing of high-quality latrines.”⁶⁵¹ Baermann proceeds to delineate the manifold advantages linked to hygienic housing and disease prophylaxis on the estates affiliated with the Serdang Doktor Fonds. The benefits outlined include a substantial decrease in mortality rates, increased work motivation among laborers, an overall amplification of workers’ “happiness” and “joy of life”, and, most notably, substantial savings achieved through these measures. “Through prophylaxis and hygiene”, Baermann concludes, “from 1906-1925, by reducing mortality rates alone a total of 900’000 gulden was saved. If we add [the money saved through] the reduction of sick leaves [...] and a decreased number of hospitalizations, the amount saved can be multiplied by three.”⁶⁵² Given the profit-driven orientation of plantation conglomerates on Sumatra’s east coast, such numbers undoubtedly served as compelling evidence to maintain the support for privatized public health initiatives, in particular when considering the lack of government-funded, civil health care institutions on the outer islands.⁶⁵³ To some degree, these figures might also explain the favorable reception of German physicians within the historical accounts of the large Dutch plantation companies exploiting the labor and resources of tropical Sumatra.

⁶⁵¹ Baermann, Gustav/Smits, E.: *Eerste Hygienische Tentoonstelling in Nederlandsch Indië te Bandoeng, 25 Juni-10 Juli 1927. Catalogus der Inzending van het Hospitaal Petoemboekan Sumatra’s Oostkust (Het Serdang Doctor Fonds)*, Medan: Varekamp & Co 1927, pp. 4f.

⁶⁵² *Ibid.*, p. 9

⁶⁵³ For an assessment of health care costs on the European plantations on Sumatra, see Agustono/Junaidi/Affandi, ‘Pathology Laboratory’, p. 5.

4.3 From Transimperial Medicine to International Public Health

“The result of the [past] 10 years has been the sanitation of a tropical country. Here [in Sumatra], a problem has been successfully solved, that still poses a great challenge to other tropical countries, and both practical as well as theoretical tropical medicine have been involved in its solution.”⁶⁵⁴

The “sanitation” (“Assanierung”) of Sumatra’s plantation belt was hailed as a remarkable achievement by contemporary observers well beyond the borders of the Netherlands and their colonies. The international attention Schüffner et al. received for their hygienic ‘success’ might at least partially be attributed to the fact that, as the quote above suggests, the medical knowledge produced in Sumatra’s plantation hospitals and laboratories could potentially be transferred to other tropical empires.⁶⁵⁵ As an extensive body of historical research has shown, the discipline of tropical medicine progressively evolved into a transnational endeavor at the turn of the 20th century.⁶⁵⁶ The aim of the last section of this chapter is thus to place Sumatra’s plantation hygiene in its global contexts. First, I demonstrate how the scientific ‘discoveries’ made by German physicians employed with private, European plantation ventures on Sumatra’s east coast was made useful for German imperial efforts in the newly acquired *Südsee* colonies – and beyond. In the subsequent section, I explore to what extent Sumatra plantation hygiene fostered the institutionalization of tropical medicine in Europe, thus serving as a antecedent of the global health movement emerging in the first half of the twentieth century.

⁶⁵⁴ Schüffner/Kuenen, ‘Die gesundheitlichen Verhältnisse’, p. 168.

⁶⁵⁵ For the European construction of ‘the tropics’ as a homogenous environmental and cultural space, see, for Arnold, David (2007): ‘The Place of “the Tropics” in Western Medical Ideas Since 1750’, in: *Tropical Medicine & International Health* 2, pp. 303–313; Arnold, David: *The Tropics and the Traveling Gaze. India, Landscape, and Science, 1800-1856*, Seattle: University of Washington Press 2014; Arnold, David (ed): *Warm Climates and Western Medicine. The Emergence of Tropical Medicine, 1500-1900*, Amsterdam: Rodopi 1996.

⁶⁵⁶ See Neill, Deborah: ‘Science and Civilizing Mission. Germans and the Transnational Community of Tropical Medicine’, in: Naranch/Eley, (eds): *German Colonialism in a Global Age*, pp. 74–92; Neill, Deborah: *Networks in Tropical Medicine. Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890-1930*, Stanford: Stanford University Press 2012; Power, Helen: *Tropical Medicine in the Twentieth Century. A History of the Liverpool School of Tropical Medicine 1898-1990*, New York: Routledge 2011; Amaral, Isabel (2008): ‘The Emergence of Tropical Medicine in Portugal. The School of Tropical Medicine and the Colonial Hospital of Lisbon (1902-1935)’, in: *Dynamis* 28, pp. 301–328; Cueto, Marcos (1996): ‘Tropical Medicine and Bacteriology in Boston and Peru. Studies of Carrión’s Disease in the Early Twentieth Century’, in: *Medical History* 40 (3), pp. 344–364.

Plantation Hygiene for the German Empire

German plantation physicians employed with the European laboratories and hospitals on Sumatra's east coast were rather active in discussing and disseminating their latest findings in specialized medical journals. Their contributions ranged from latest discoveries on the causes of 'tropical' diseases such as malaria or beriberi to practical recommendations on disease prophylaxis and hygiene in the tropics.⁶⁵⁷ On the one hand, many published in Dutch and Dutch East Indies medical journals such as the *GTNI*, that, as has already been elaborated on in chapter 3, accepted contributions both in Dutch and in German, thereby lowering the threshold for German physicians to disseminate their findings. On the other hand, German plantation physicians made use of their first-hand experience to publish in international journals whose outreach went beyond the Dutch sphere of influence. The demand for their practical and theoretical expertise was especially pronounced within the German Empire, which had established its colonial territories in East Africa and the Pacific at the turn of the 20th century. In 1912, for example, Gustav Baermann, published an extensive account on the sanitation of the Serdang Doktor Fond's plantation estates in the *Archiv für Schiffs- und Tropenhygiene*, probably the most important German outlet for the latest findings in the field of colonial bacteriology and tropical medicine.⁶⁵⁸ German demands for medical knowledge produced in tropical Sumatra can be further illustrated on the basis of W.A.P. Schüffner's bibliography. Throughout his career as a tropical physician, spanning from 1898/9 to his retirement in 1937, he authored a total of 120 scientific articles, books, and papers. Notably, 68 of these works (56.7%) were published in journals based in the Netherlands or the Dutch East Indies, while 42 (35%) found their way into German publishing houses, most importantly to the *Archiv für Schiffs- und Tropenhygiene* (12 publications) and *the Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten* (10 publications).⁶⁵⁹ Through such publications,,

⁶⁵⁷ See, for example, Heinemann, Henry (1914): 'Tuberkulose-Beobachtungen an javanischen Kontraktarbeitern', in: *GTNI* 56, pp. 206–234; Heinemann, Henry: *Practische Wenken Voor Moeders*, Medan: Köhler & Co. 1928; Heinemann, Henry (1935): 'Het Hygiënisch Werk der Senembah-Maatschappij Gedurende de Laatste Jaren', in: *GTNI* 75, pp. 524–533; Baermann, Gustav/Eckersdorff, Otto (eds): *Atlas tropischer Darmkrankheiten*, Leipzig: Johann Ambrosius Barth 1913; Baermann, Gustav (1930): 'Die kurzfristigen Spirochätenfieber', in: *Handbuch der pathogenen Mikroorganismen* 7 (1), pp. 661–690; Baermann, Gustav (1929): 'Die Ankylostomiasis der Tropen und Subtropen', in: *Handbuch der pathogenen Mikroorganismen* 6 (2), pp. 949–994; Henggeler, Oskar: *Geschichtliches über die Pest*, Zürich: Amberger 1907; Henggeler, Oscar (1904): 'Über einige Tropenkrankheiten der Haut. I. Framboesia Tropicalis', in: *Monatshefte für Praktische Dermatologie* 40, pp. 235–277; Henggeler, Oscar (1906): 'Über einige Tropenkrankheiten der Haut. II. Tinea Imbricata', in: *Monatshefte für Praktische Dermatologie* 43, pp. 325–341.

⁶⁵⁸ See Baermann, 'Die Assanierung der javanischen und chinesischen Arbeiterbestände'.

⁶⁵⁹ See the bibliography in Kuenen, W.A.: 'Prof. Dr. W.A.P. Schüffner', in: *Nederlandsch Tijdschrift voor Geneeskunde III* (28), pp. 3282–3295. Only sporadically did Schüffner publish outside Germany and the Netherlands, for example in the *Transactions of the Royal Society of Tropical Medicine*, the *American Journal of*

Schüffner indirectly provided knowledge considered crucial for the German colonization of East Africa and the Pacific in the late 19th and early 20th century to a German-speaking, academic readership.⁶⁶⁰

In at least one instance, however, the knowledge produced by German physicians on the plantations on Sumatra's east coast was transferred to the German Colonial Empire in a rather direct manner. In the early 1890s, the German Dr. Bernhard Hagen ended his contract with the plantation hospital in Tandjong Morawa to recover from an infection with malaria and dysentery that he had contracted on Sumatra. Already in 1892, he would again travel east, this time to take up a post as a plantation physician for the German *Kolonialgesellschaft* Astrolabe Company on the northeast coast of New Guinea. Up until 1899, when the German Empire formally took over the colony, the German territories on New Guinea were largely administered by private investors.⁶⁶¹ Alongside the German New Guinea Company, the Astrolabe Company, founded in 1891, was one of the major plantation ventures attempting to turn the island's northeastern coast into a goldmine for tobacco cultivation and export. Due to his longstanding experience on the Deli tobacco plantations, Bernhard Hagen was thus a particularly valuable asset for the imperial 'newcomers'.⁶⁶² The Astrolabe Company's administrator Curt von Hagen was, like Bernhard Hagen, a Deli veteran. According to Bernhard Hagen, von Hagen was "eager to transform the Compagnie's tobacco plantations according to the Deli pattern."⁶⁶³ Indeed, in their economically driven colonization efforts, the Germans on New Guinea seemed to have followed patterns formerly established in Dutch-ruled Sumatra. As the island was, like Sumatra, rather sparsely populated, the Germans, too, 'imported' Javanese and Chinese indentured laborers through broker networks in Batavia and Singapore.⁶⁶⁴ Moreover, Hagen as well as many of his contemporaries considered New Guinea to be similar to Sumatra in terms of

Tropical Medicine, or the *Philippine Journal of Science*. The most extensive collection of Schüffner's publications is held in: Nationaal Archief Den Haag (NL-HaNA), Koninklijk Instituut voor de Tropen (KIT), nummer toegang 2.20.69, inv. nr. 7002, blok I 134.

⁶⁶⁰ For the role of medicine in German colonial efforts, see Neill, 'Science and Civilizing Mission'; Besser, Stephan: *Pathographie der Tropen. Literatur, Medizin und Kolonialismus um 1900*, Würzburg: Königshausen & Neumann 2013; Ehlers, Sarah: *Europa und die Schlafkrankheit. Koloniale Seuchenbekämpfung, europäische Identitäten und moderne Medizin 1890-1950*, Göttingen: Vandenhoeck & Ruprecht 2019; Walther, Daniel: *Sex and Control. Venereal Disease, Colonial Physicians, and Indigenous Agency in German Colonialism, 1884-1914*, New York: Berghahn 2015; Eckart, Wolfgang (2002): 'The Colony as Laboratory. German Sleeping Sickness Campaigns in German East Africa and in Togo, 1900-1914', in: *History and Philosophy of the Life Sciences* 24 (1), pp. 69–89; Eckart, Wolfgang: *Medizin und Kolonialimperialismus. Deutschland 1884-1945*, Paderborn: Schöningh 1997.

⁶⁶¹ See Hiery, Hermann: 'Die deutsche Verwaltung Neuguineas 1884-1914', in: idem (ed): *Die Deutsche Südsee, 1884-1914. Ein Handbuch*, Paderborn: F. Schöningh 2001, pp. 277–311.

⁶⁶² I have written about this more extensively in Ligtenberg, 'Contagious Connections', pp. 561–563.

⁶⁶³ Hagen, *Unter den Papua's*, p. 11.

⁶⁶⁴ See van den Doel, Hubrecht Wim: 'Nachbarn an der Peripherie. Die Beziehungen zwischen Niederländisch-Ostindien und den deutschen Südseekolonien', in: Hiery (ed), *Die Deutsche Südsee*, pp. 777–783.

diseases and climate.⁶⁶⁵ As has been pointed out by Margit Davies, the wide spread of diseases on New Guinea was a constant cause of concern to German colonists. Due to the high mortality rates among both Europeans and the local population, the island earned the reputation of a *Fieberkolonie* (fever colony), threatening the economic success of the newly founded plantation ventures.⁶⁶⁶ Based on his experiences on Sumatra, Hagen thus advised the German Company to mimic the racialized division of labor established on the Deli plantations that proved to successfully maintain the workers' health (see chapter 4.2.1). He further endorsed the 'import' of indentured laborers by arguing that the native Melanesians were particularly vulnerable to the island's natural threats, as they were frequently "ravaged by influenza and dysentery." By doing so, Hagen transferred his hypothesis on the correlation between race, health, and labor productivity he had formulated in the hospital on Tandjong Morawa to the Astrolabe Company's tobacco plantations in New Guinea. In his own words, Hagen "always met with the most willing acceptance" of his recommendation on 'coolie' recruitment and hygiene, "on the part of the [Astrolabe Company's] directors in Berlin." Moreover, Hagen thus strongly advocated that "the doctor in the colonies [should] be given [...] a deciding voice in *all* sanitary measures."⁶⁶⁷ To what extent Hagen's advice was followed in practice remains elusive based on the sources available to this study. What one can state with certainty is that Hagen had only limited time to implement these measures himself. After a mere 1 ½ years, Hagen left New Guinea for good to settle in Frankfurt am Main. Nevertheless, in 1899 he published *Unter den Papua's*, a handbook giving practical advice to prospective planters and merchants eager to set foot in the allegedly lucrative trading opportunities awaiting in New Guinea.⁶⁶⁸

German interest in Sumatra's plantation hygiene did not seem to wane even after the *Reich* had lost its colonial overseas possessions after the First World War.⁶⁶⁹ In 1921, for example, Gustav Baermann, while still being employed with the central hospital Petoemboekan,

⁶⁶⁵ See Hagen, *Unter den Papua's*, pp. 19–26; Davies, Margrit: *Public Health and Colonialism. The Case of German New Guinea 1884-1914*, Wiesbaden: Harrassowitz 2002, pp. 35–36.

⁶⁶⁶ See Davies, Margrit: 'Das Gesundheitswesen im Kaiser-Wilhelmsland und im Bismarckarchipel', in: Hiery, (ed), *Die Deutsche Südsee*, pp. 417–449, here p. 419. Also see Eckart, Wolfgang: 'Medicine and German Colonial Expansion in the Pacific. The Caroline, Mariana, and Marshall Islands', in: MacLeod, Roy/Lewis, Milton (eds): *Disease, Medicine and Empire. Perspectives on Western Medicine and the Experience of European Expansion*, London: Routledge 1988, pp. 80–102.

⁶⁶⁷ Hagen, *Unter den Papua's*, p. 36–38. Emphasis by the author.

⁶⁶⁸ See Ligtenberg, 'Contagious Connections', pp. 566f.

⁶⁶⁹ For the ties between German individuals and institutions and the German diasporas in 'foreign' imperial services after 1914 see, for example, Von Brescius/Dejung, 'The Plantation Gaze'; Jokeš, Manuel: *Zwischen Kaiserreich, Niederländisch-Indien, Nazideutschland und Entwicklungshilfe. Emil Helfferich als Grenzüberschreiter. Eine imperiale Biographie*, unpublished master's thesis, ETH Zurich, submitted 5. January 2021.

collaborated with the German pharmaceutical company Bayer.⁶⁷⁰ During a stay in Europe, he had allegedly been approached by the company who had plans to test the effectiveness of the medication Bayer 205 in combating surra, an animal disease transmitted by flies. As stated by the company, “there was however no opportunity for this [experiment] in Europe” which is why Gustav Baermann was tasked with testing the medication in Sumatra. His German nationality seemed to have played a crucial role in why he was ‘chosen’ by Bayer to conduct the experiments. According to a report in the *Sumatra Bode*, Baermann was “the only one in India to whom it [the medication] had been supplied and would continue to be supplied, and he was not allowed to hand it over under any circumstances, as Germany had no patent rights and therefore if a national of another power found out about the secret of the drug, it would be a great shame for Bayer.”⁶⁷¹ Baermann went through with the experiments and published his findings on the treatment of surra with Bayer 205 in the *Archiv für Schiffs- und Tropenhygiene*.⁶⁷²

Transimperial Careering and the Colonial Antecedents of Global Health

After having returned to Europe from German New Guinea in 1895, Bernhard Hagen abandoned the medical profession for good. As I have argued elsewhere in more detail, he would utilize the symbolic capital acquired through his long stay in ‘the tropics’ as well as his observations of the different ‘races’ in Sumatra and New Guinea to enter the highly topical field of physical anthropology, eventually founding the *Völkerkundemuseum* (Museum of Anthropology) in Frankfurt in 1904.⁶⁷³ For most German and Swiss plantation physicians however, the pursuit of studying tropical medicine did not end after having left Southeast Asia. Rather, their experiences with tropical hygiene on the spot would pave the way for an

⁶⁷⁰ For the colonial history of (commercial) pharmaceuticals, see Monnais, Laurence: *The Colonial Life of Pharmaceuticals. Medicines and Modernity in Vietnam*, Cambridge: Cambridge University Press 2019; Bhattacharya, Nandini: *Disparate Remedies. Making Medicines in Modern India*, Montreal: McGill-Queen’s University Press 2023.

⁶⁷¹ ‘Een en ander over de Proeven van Dr. Baermann met “Bayer 205”’, in: *Sumatra-Bode*, 22 December 1921. Also see ‘Bayer 205’, in: *De Sumatra Post*, 29 November 1921.

⁶⁷² Baermann, Gustav (1922): ‘Die Behandlung der Surra mit “Bayer 205”’, in: *Beihefte zum Archiv für Schiffs- und Tropenhygiene* 16, p. 73. Bayer 205 would later be renamed to Germanin and received notoriety during the Second World War as an instrument of Nazi propaganda. See Eckart, Wolfgang: ‘Germanin – Fiktion und Wirklichkeit in einem nationalsozialistischen Propagandafilm’, in: Eckart, Wolfgang/Benzenhoefer, Udo (eds): *Medizin im Spielfilm des Nationalsozialismus*, Tecklenburg: Burgverlag 1990, pp. 69–83; Jacobi, Eva Anne (2010): ‘Das Schlafkrankheitsmedikament Germanin als Propagandainstrument. Rezeption in Literatur und Film zur Zeit des Nationalsozialismus’, in: *Würzburger medizinhistorische Mitteilungen* 29, pp. 43–72.

⁶⁷³ See Ligtenberg, ‘Contagious Connections’, pp. 567–570.

(academic) career in Europe.⁶⁷⁴ In 1932, Gustav Baermann, for example, taught as lecturer (*Privatdozent*) for tropical medicine and hygiene at the University of Munich.⁶⁷⁵ The Swiss Oskar Henggeler, formerly employed with the plantation hospital Tebing Tinggi would also stay within the realm of his expertise in tropical medicine acquired in Sumatra's plantation hospitals after returning to Switzerland in 1903. In 1905, he was appointed chief physician for the private hospital Theodosianum in Zurich, where he specialized in internal and tropical medicine.⁶⁷⁶ He would become a member of the Geographic-Ethnographic Society Zurich (*Geographisch-Ethnographische Gesellschaft Zürich*) where he gave public talks on tropical diseases.⁶⁷⁷ Moreover, he seemed to have upheld his loyalty to the colonial plantation regime in Sumatra even after his return to Europe. In 1904, the Swiss daily *Zuger Volksblatt* reported on an international socialist congress held in Amsterdam, whose participants openly called out the exploitative working conditions on Sumatra's plantation belt. Their criticism was apparently based on the pamphlet *De Millioenen uit Deli*, published by the Dutch lawyer Johan van den Brand. Van den Brand's manifesto, that aroused international attention and greatly damaged the Sumatra planters' reputation, specifically targeted the slave-like conditions created by the penal sanction, that severely restricted indentured laborers' freedom of movement.⁶⁷⁸ In an attempt to rehabilitate the Deli planters' reputation, Henggeler published a response to the article in the *Zuger Volksblatt*. "If the author of the article had been more critical", he commented, "he would have known that van den Brand's words have been refuted in the past two years." He added that "objectively judging, insightful individuals and people knowing the true conditions [on Deli] do no longer take van den Brand seriously." He thus urges the newspaper to revoke the article "in order to preserve the honor of the medical community of Deli, to which I have belonged for 8 years."⁶⁷⁹

⁶⁷⁴ For the career opportunities opened by moving between and across empires, see the contributions in Lambert, David/Lester, Alan (eds): *Colonial Lives Across the British Empire. Imperial Careering in the Long Nineteenth Century*, Cambridge: Cambridge University Press 2011 and Blaser, Claire Louise/Ligtenberg, Monique/Selander, Josephine (2021): 'Transimperial Histories of Knowledge. Exchange and Collaboration from the Margins of Imperial Europe', *Thematic Issue Comparativ* 31 (5/6). A particularly interesting case study for the ways in which experiences in 'foreign' colonies could foster scientific careers can be found in Schär, Bernhard: *Tropenliebe. Schweizer Naturforscher und niederländischer Imperialismus in Südostasien um 1900*, Frankfurt am Main: Campus 2015.

⁶⁷⁵ See 'Privat-Dozent te München', in: *De Sumatra Post*, 20 January 1932

⁶⁷⁶ See 'Dr. Oskar Henggeler', in: *De Sumatra Post*, 28 December 1903; 'Henggeler, Oskar', in: *Adressbuch der Stadt Zürich* 53, 1928 p. 325.

⁶⁷⁷ See 'Jahresbericht pro 1907/1908', in: *Jahresberichte der Geographisch-Ethnographischen Gesellschaft in Zürich* 8, p. 5.

⁶⁷⁸ For Van den Brand's pamphlet and its reception see Breman, *Koelies, Planters en Koloniale Politiek*, pp. 263–273; Stenberg/Minasny, 'Coolie Legend on the Deli Plantation', pp. 165f.; Breman, Jan (2020): 'Colonialism and Its Racial Imprint', in: *Sojourn. Journal of Social Issues in Southeast Asia* 35 (3), pp. 463–492.

⁶⁷⁹ 'Warom gezwegen?', in: *De Sumatra Post*, 7 October 1904.

The German physician who maintained the most direct link to the Netherlands after his return to Europe was W.A.P. Schüffner. In 1923, the board of the *Koloniaal Instituut* (Colonial Institute) appointed Schüffner as professor for tropical medicine at the University of Amsterdam to succeed the Dutch Prof. Dr. J. J. van Loghem. At the time of his appointment, the Institute was headed by its co-founder Christian Wilhelm Janssen, who was known as a philanthropist and founded the Senembah Company. It was also Janssen who had initially hired Schüffner as a chief physician for his company. Moreover, the Institute financed the laboratories as well as the salary that enabled Schüffner to continue his research on tropical diseases in the Netherlands.⁶⁸⁰ It thus seems rather plausible to assume that it was Schüffner's former affiliation with the Senembah Company and his long-lasting connection with Janssen that earned him the professorship in Amsterdam.⁶⁸¹ It was in the framework of this professorship that Schüffner would become increasingly embedded in a transnational community of microbiologists and tropical medicine experts working at the interface of ground research and public health. In the course of his academic career in Europe, he attended, among others, the First International Congress on Malaria in Rome (1925), the International Congress on Tropical Medicine and Hygiene in Cairo (1928), the Second International Congress on Malaria in Algiers (1930), and the First International Congress of Microbiology in Paris (1930).⁶⁸² In 1938, and with that one year after his retirement, he co-organized the Third International Congress of Tropical Medicine and Malaria in Amsterdam, coordinated by the League of Nations.⁶⁸³ At that time, Schüffner was already known for his expertise on tropical diseases and public health to the League of Nations' section for health and social questions. In 1925, Schüffner agreed to collaborate with a research group established by the League of Nations that was commissioned to investigate the effectiveness of quinine in the global

⁶⁸⁰ See Pols, 'Quarantine in the Dutch East Indies', pp. 96–100.

⁶⁸¹ For the importance of such 'colonial veteran networks' in imperial scientific careering, see Bennett, Brett: 'The Consolidation and Reconfiguration of "British" Networks of Science, 1800-1970', in: Bennett, Brett/Hodge Joseph (eds): *Science and Empire. Knowledge and Networks of Science across the British Empire, 1800-1970*, London: Palgrave Macmillan 2011, pp. 30–43.

⁶⁸² See Kuenen, 'W.A.P. Schüffner', pp. 3292f. Many of Schüffner's former colleagues from the Medan Laboratory would as well attend international conferences in the course of their careers. See Agustono/Junaidi/Affandi, 'Pathology Laboratory', pp. 10f.

⁶⁸³ See 'Third International Congress of Tropical Medicine and Malaria (Amsterdam)', in: United Nations (UN) Library & Archives Geneva, League of Nations Secretariat, R6012/8A/29065/298. For the historical significance of international hygiene conferences organized by the League of Nation, see Amrith, Sunil/Clavin, Patricia (2013): 'Feeding the World. Connecting Europe and Asia, 1930-1945', in: *Past and Present* 218, issue supplement 8, pp. 29–50; Litsios, Socrates (2014): 'Revisiting Bandoeng', in: *Social Medicine* 8 (3), pp. 113–128; Brown, Theodore M./Fee, Elizabeth (2008): 'The Bandoeng Conference of 1937. A Milestone in Health and Development', in: *American Journal of Public Health* 98 (1), pp. 42f.; Amrith, Sunil: 'The Internationalization of Health in Southeast Asia', in: Harper, Tim/Amricht, Sunil (eds): *Histories of Health in Southeast Asia. Perspectives on the Long Twentieth Century*, Indianapolis: Bloomington 2014, pp. 171–174.

containment of malaria.⁶⁸⁴ Three years later, in 1928, Schüffner agreed to join the League of Nations Malaria Commission to British India as a corresponding member for the Netherlands.⁶⁸⁵ It is not least because of such personnel continuities of former colonial physicians within the League of Nations' public health commissions that a growing number of historians have pointed to the colonial roots of the international health movement in recent years.⁶⁸⁶

Despite his transimperial career trajectory that took him from the Dutch Senembah Company on Sumatra to the League of Nations' international health commissions and congresses, Schüffner never gave up his German citizenship and continued to correspond and publish in German. After the Second World War, in the context of Dutch postwar denazification efforts, his continuous ties with Germany aroused the suspicion of the Dutch authorities. In the process of the investigations, he received the strongest endorsement of his former colleagues from the Senembah plantation, most importantly W.A. Kuenen.⁶⁸⁷ Nevertheless, the "war and post-war conditions ended his career." As Schüffner's former colleague, the Dutch epidemiologist Nicolaas Swellengrebel, stated in Schüffner's obituary in 1950: "Schüffner was born a German and he died a German. True to the 'Fatherland' to the last, he was painfully aware of the crimes it was guilty of, and he admitted them in that phrase of proud resignation with which he used to counter his critics, 'right or wrong, my country.'"⁶⁸⁸

⁶⁸⁴ See 'Enquiry on Quinine – Collaboration with Professor Schüffner', in: UN Library & Archives Geneva, League of Nations Secretariat, R936/12B/37434/35993.

⁶⁸⁵ See correspondences in: 'Malaria Committee - Services of, and various correspondence with Professor Schüffner (corresponding member for the Netherlands)', in: UN Library & Archives Geneva, League of Nations Secretariat, R5953/8C/4561/1411.

⁶⁸⁶ See, for example, Pearson, Jessica Lynne: *The Colonial Politics of Global Health. France and the United States in Postwar Africa*, Cambridge: Harvard University Press 2018; Richardson, Eugene: *Epidemic Illusions. On the Coloniality of Global Public Health*, Cambridge: The MIT Press 2020; Wells, Julia (2016): 'Imperial Medicine in a Changing World. The Fourth International Congresses on Tropical Medicine and Malaria, 1948', in: *Health History 18 (1)*, pp. 67–88; Hussain, M. et al. (2023): 'Colonization and Decolonization of Global Health. Which Way Forward?', in: *Global Health Action 16 (1)*, online, doi: 10.1080/16549716.2023.2186575; Birn, Anne-Emanuelle/Pillay, Yogan/Holtz, Timothy H.: 'The Historical Origins of Modern International (and Global) Health', in: idem (eds): *Textbook of Global Health*, New York: Oxford University Press 2017, pp. 1–42; Bump, Jesse/Aniebo, Ifeyinwa (2022): 'Colonialism, Malaria, and the Decolonization of Global Health', in: *PLOS Glob Public Health 2 (9)*, online, DOI: <https://doi.org/10.1371/journal.pgph.0000936>.

⁶⁸⁷ See documents held in: NL-HaNA 2.09.16.01, Nederlandse Beheersinstituut (NBI): Beheersdossiers, inv. nr. 5572.

⁶⁸⁸ Swellengrebel, 'Wilhelm August Paul Schüffner', p. 394.

Conclusion

First, the chapter has demonstrated that, contrary to what the self-representation of the large plantation companies suggests, W.A.P. Schüffner and his public health initiatives were far from being an isolated case. Rather, the institutionalization of plantation hygiene on Sumatra ought to be viewed within the broader context of economic opportunities in the aftermath of the liberalization of Dutch East Indies' markets. Since its early days, the exploitation of labor and resources on Sumatra's plantation belt was a transnational endeavor, with German and Swiss planters being at the forefront of the economic exploitation of Sumatra's environment and resources. After the introduction of the coolie ordinance in 1880, that legally obliged planters to secure a basic level of workers' health care, the high presence of German and Swiss individuals on the European plantation estates was reflected among the medical personnel in the plantation hospitals. And even after most German and Swiss estates had been taken over by larger, Dutch conglomerates such as the Senembah or Deli Companies in the 1890s, the continued presence of Germanophone physicians was both acknowledged and appreciated by the Dutch. Nevertheless, German and Swiss physicians in Sumatra held on to their distinct national identities, becoming active members of diaspora associations such as the German Club. Even Schüffner, whose career remained closely entangled to the Netherlands after his return to Europe, held onto his Germanness. After the Second World War, his dedication to the German language and nationality eventually put an end to his career in the context of Dutch denazification efforts. Second, I have highlighted the biopolitical implications of the knowledge produced within the private hospitals and laboratories on Sumatra's plantation belt. I have demonstrated how, from the 1870s onwards, hygiene policies and recruitment practices based on racialized assumptions about 'coolie' bodies and their 'fitness to labor' in the tropics. These racialized assumptions translated into concrete practices, most importantly the establishment of model villages that were designed to 'educate' allegedly 'unhygienic' Javanese and Chinese indentured laborers into 'modern', 'healthy', and productive workers. Moreover, the design of these 'coolie' housing regimes closely followed established practices previously 'tested' in the 19th century colonial military barracks that, in a paternalistic manner, aimed to 'protect' soldiers from their inherently 'unhealthy' and 'irrational' behavioral patterns. Such parallels further emphasize the intricate interplay between race and class in colonial contexts. Nevertheless, in many instances, their 'coolie' patients resisted European-style health care policies imposed on them, and physicians had to consider existing social structures or indigenous healing methods. Such acts of resistance thus also point to the boundaries of top-down exercise of biopolitical

power. Third, the strong presence of Germanophone physicians on Sumatra's plantation belt resulted in the transimperial dissemination of racialized labor regimes and public health recommendations. Many plantation physicians circulated their theoretical findings and practical experiences in 'coolie health care' in journals such as the *Archiv für Schiffs- und Tropenhygiene*, and with that in some of the most important medical outlets for furthering German imperial efforts in Africa and the Pacific. In the case of Bernhard Hagen, who took up a post for the Astrolabe Company in German New Guinea after having ended his contract with the Tandjong Morawa hospital, knowledge from Sumatra's plantation belt was directly transferred to the young, German colonies in the South Pacific.

Lastly, the chapter has revealed to the promising career opportunities in Europe that opened for German and Swiss physicians after having ended their employment with private plantation companies in Sumatra. In the case of W.A.P. Schüffner, his appointment with the University of Amsterdam was even directly enabled and financed by his former employer with the Senembah Company, further highlighting the pivotal role of economic interests and private capital in the making of seemingly disinterested science. Moreover, the continued engagement of German medical experts with tropical medicine and colonial public hygiene even after the First World War points to the ways in which German individuals and institutions continued to collaborate with 'foreign' colonial powers even after the German Empire had lost its colonial overseas possessions with the Treaty of Versailles in 1919, extending the spatial and temporal framework of German colonial history. Especially in the context of the supranational public health projects initiated by the League of Nations, their knowledge from the field in tropical Sumatra continued to be in high demand. This supports the important observation made by Warwick Anderson that "[i]f many historians of colonial medicine appear thus to stop prematurely, historians of international health services and developmental states may start their narrative too late."⁶⁸⁹ A closer investigation of the relationship between colonial health care on Sumatra (and beyond), the international health movement, and 20th century developmentalism goes beyond the scope of the present study. The preliminary findings presented here, however, appear to offer promising avenues for historians to explore in the future.

⁶⁸⁹ Anderson, *Colonial Pathologies*, p. 4.

Conclusion: Towards a Collaborative History of Colonial Medicine

In 1907, the Geographic-Ethnographic Society of Zurich (*Geographisch-Ethnographische Gesellschaft Zürich*; GEGZ) acquired weapons (swords, quivers, and bows), various pieces of clothing, and a so-called “magic book” from Mentawai, Sumatra, and Borneo. The objects were ‘collected’ by the Swiss physician Dr. Conrad Kläsi who had joined the Dutch Colonial Army in 1879.⁶⁹⁰ During and after his service in the KNIL, Kläsi obtained 28 boxes filled with animal specimens, art, and so-called ethnographica that he shipped back to Europe.⁶⁹¹ The collections of the GEGZ – including the objects ‘collected’ by Kläsi – were handed over to the *Völkerkundemuseum* (Ethnographic Museum) in Zurich in 1913, where they are still housed today. Kläsi was not alone in bringing various forms of material evidence of his journey to the Dutch East Indies back home. The Austrian ‘medical mercenary’ Heinrich Breitenstein claimed to have spent his time off duty leaving “the fort to hunt, to collect beetles, to attend a Dajak festival or to pick rare orchids on the border of the jungle.”⁶⁹² Parts of his collections would be handed over to the Museum of Natural History in Vienna.⁶⁹³ The Czech National Museum in Prague holds an extensive collection of ‘ethnographic’ objects from the island of Nias compiled by the Czech medical officer Pavel Durdík.⁶⁹⁴ The German plantation physician Bernhard Hagen also took advantage of his 10-year stay in Sumatra, ‘collecting’ dozens of ‘ethnographica’ and human remains, that are housed at the Ethnological Museum (*Völkerkundemuseum*) in Frankfurt until today.⁶⁹⁵

These collections bear (materialized) witness of the manifold activities of physicians from Switzerland, the German, and the Habsburg Empire in the Dutch East Indies from the late 19th to the early 20th century. The primary objective of this study was to illuminate the historically grown, colonial entanglements between Germanophone Europe and the Dutch East Indies

⁶⁹⁰ Steinmann, Alfred (1941): ‘Die Sammlung der Völkerkunde der Universität Zürich, ihre Entstehung und Wandlung bis heute’, in: *Mitteilungen der Geographisch-Ethnographischen Gesellschaft Zürich* 41, pp. 25–84, here p. 36.

⁶⁹¹ See Erni, Heinrich (1935): ‘Nekrolog Konrad Kläsi’, in: *Schweizerische Medizinische Wochenschrift* 48, p. 1152.

⁶⁹² Breitenstein, Heinrich: 21 Jahre Indien. Aus dem Tagebuche eines Militärarztes, *Erster Theil: Borneo*, Leipzig: Th. Grieben’s Verlag 1899, p. 65.

⁶⁹³ See, for example, ‘Ethnographische Sammlung’, in: *Annalen des Naturhistorischen Museums in Wien* 13, p. 37; ‘Jahres-Versammlung am 7. April 1880’, in: *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien* 30, pp. 15–28, here p. 26.

⁶⁹⁴ See Pospíšilová, Dagmar/Hladká, Ivana/Jezberová, Anna: *Pavel Durdik (1843-1903), Life and Work. Ethnological Collection of the Island of Nias*, Prague: National Museum 2010.

⁶⁹⁵ See Ligtenberg, Monique (2021): ‘Contagious Connections. Medicine, Race, and Commerce between Sumatra, New Guinea, and Frankfurt, 1879-1904’, in: *Comparativ* 31 (5/6), pp. 555–571.

through the lens of these medically educated, middle-class men from various regions in German-speaking Europe in Dutch imperial services between 1873 and the 1920s.

First, the study attempted to further overcome the nation-centric bias in colonial history writing by exploring the histories of Germanophone physicians serving the Dutch colonial health care institutions from a transimperial perspective. The transimperial approach allowed me to integrate regions ‘at the margins’ of Imperial Europe, i.e., territories with no overseas empire of their own, into imperial history, while simultaneously expanding the spatial and temporal framework of Dutch and German colonial history. By comparing the accounts of ‘foreigners’ from distinct national backgrounds in Dutch imperial services, united through the shared German language and their belonging to the medical profession, the study gained fresh insight on the complex colonial social order that transcended conventional dichotomies such as European/indigenous or colonizer/colonized. Rather, it pointed to the shifting dynamic between regional and religious belonging, class, race, or gender in the colonial situation. At the same time, the transimperial perspective enabled me to explore the ways in which Dutch imperialism had potentially long-lasting repercussions on European nation states and empires beyond the Dutch sphere of influence. Relatedly, the manifold examples of physicians from the German States and Empire, who sought employment with Dutch colonial medical institutions prior to and after the German Empire’s enter and exit from the imperial race, suggest that German colonial history extends beyond the time of the relatively short-lived era of the German Colonial Empire.

Second, this thesis situated ‘medical mercenaries’ in the complex imperial social formation of the Dutch East Indies. A particular concern was to explore the role of colonial services in forging and contesting European masculinities and bourgeois respectability. As exemplified by several individual cases investigated within the framework of this study, serving a ‘foreign’ imperial power could offer a promising avenue for embodying ideals of imperial masculinity, ascending the socioeconomic ladder amidst the burgeoning ‘Global Bourgeoisie’ of the 19th century, or claiming authoritative positions within topical medical discourses of the late 19th and early 20th centuries. Moreover, the colonial experiences often paved the way for successful research careers in Europe. Simultaneously, resorting to an intersectional perspective, the present study illuminated how the encounters of European, middle-class men with European lower classes, women, indigenous populations, competing epistemologies, as well as previously uncharted diseases and environments in colonial settings could pose substantial challenges and destabilize their assertions of social, racial, or scientific supremacy. These struggles

reverberated transimperially through German-language travelogues, medical publications, and correspondence to regions across German-speaking Europe.

Third, this study contributed to a burgeoning field of research that underscores the pivotal role played by ‘men on the spot’ in the colonies, operating beyond the confines of established scientific institutions, in shaping and contesting the biomedical sciences at the turn of the 20th century. For this purpose, I presented the Dutch Colonial Army and various privatized, European plantation conglomerates in Sumatra as key employers for medically trained ‘foreigners’ in Dutch colonial services, and with that as crucial site of medical knowledge production. On the one hand, this emphasis on medical knowledge produced outside formalized scientific institutions reveals the military and economic interests that underpinned the development of colonial medicine. On the other hand, by centering on practitioners rather than theories established in scientific institutions, this thesis further illuminated the profound contestation within European medical sciences during the age of the ‘laboratory revolution’ and beyond. Moreover, by studying the contingencies and ruptures between 19th century environmental determinism, the universalist microbiological paradigms around 1900, and the emerging public and international health movements of the early to mid-20th century, the study shed further light on the ways in which colonial ideology – such as racialized perceptions of the human body and its predisposition to disease – became deeply imprinted in the allegedly ‘objective’, ‘modern’ medical sciences. Lastly, viewing the production of medical knowledge in and about the Dutch East Indies from the perspective of Germanophone physicians in Dutch colonial services allowed give deeper insight into the border-crossing nature of medical knowledge production and discourse. This approach also allowed to explore the ways in which the medical sciences ‘at the margins’ of Imperial Europe as well as in the territories of imperial latecomers such as the German Empire were shaped by colonial physicians in ‘foreign’ services.

The thesis was structured in four distinct case studies loosely following a chronological order. The first chapter explored the historically grown, transimperial markets for ‘foreign’ labor force and expertise throughout the long 19th century. I have demonstrated how Germanophone Europe emerged as a major source for the recruitment of ‘foreign’, scientific experts for various imperial powers. Their attractiveness to the hegemonic imperial powers can be linked to the esteemed reputation of Germanophone universities and the emergence of ‘Humboldtian science’ more broadly. Additionally, their appeal stemmed from the fact that individuals from Switzerland, the Habsburg Empire, and the German States and Empire were not considered as rivals in the race for imperial dominance, given that their respective regions

of origin had no formal colonial overseas holdings for the majority of the 19th century. Moreover, I demonstrated how, in the Dutch East Indies, the Dutch Colonial Army emerged as the most important recruiter for university-trained, middle-class men from Germanophone Europe due to its high demands for ‘foreign’ medical experts and its monopoly on the colonial health care system. Thereby, the KNIL transformed into a crucial site of medical – and other forms of – knowledge production. To physicians from Germanophone Europe, Dutch demands for medical and scientific expertise provided opportunities to achieve a sense of bourgeois respectability or to strive for ideals of European masculinities. These opportunities were particularly attractive to those individuals who faced challenges securing their status in Europe due to various factors such as reputational setbacks, financial difficulties, or limited opportunities for travel and exploration within their home regions. Joining Dutch imperial services allowed them to enhance or consolidate their social standing, symbolic capital, and masculine identity within bourgeois society.

Chapter 2 aimed to ‘situate’ the positionality of physicians from Germanophone Europe in the complex imperial social formation in the Dutch East Indies. For this purpose, it focused on Swiss, Austrian, and German medical officers serving the Dutch Colonial Army in the Aceh War in northwestern Sumatra in the 1880s and 1890s. First, an intersectional analysis of their accounts significantly challenged the binary categorization of ‘indigenous’ and ‘European’. While they tended to align themselves with a broader European civilization diametrically opposed to the ‘fanatic’, Muslim Acehnese ‘enemies’, their personal testimonies often exhibited nuanced views towards the indigenous populations they encountered. The Wallis-born Catholic Dr. Ernest Guglielminetti, for example, expressed his deepest sympathies for the Catholic Ambonese, while the Czech nationalist Dr. Pavel Durdík presented the Acehnese as brave and persistent role models for the Czech independence movements. Moreover, comparing the accounts of medical officers from different national or regional origins allowed to further differentiate the concept of ‘Europeanness’, considering factors such as class, gender, religion, nationality, and regionalism that shaped the colonial social order in the Dutch East Indies. Second, I demonstrated how medical officers used their medical expertise to distinguish themselves from lower-class European soldiers in the Dutch Colonial Army. They depicted them as ‘untamed’ and uneducated, while both discursively and practically performing their own rationality, moderate alcohol consumptions, and abstention from interracial relationships to maintain ideals or bourgeois respectability. Third, despite claiming a hegemonic position in the colonial social order, ‘medical mercenaries’, being non-combatant men serving a colonial army, often grappled with severe threats to their masculinity. They countered these threats by

(over-)emphasizing the hardships and violence they encountered to assert dominance in the military context. The vulnerability of this alleged dominance, however, became evident when they faced ‘invisible enemies’ such as the beriberi disease or were challenged by the popularity of indigenous medical traditions. In sum, the chapter revealed the contested nature of (bourgeois, male) European hegemony in the tropics, that demanded constant performative acts to be sustained, and seriously questions the hegemonic nature of European ‘tools of empire’ like medicine.

The third chapter zoomed in on the ways in which ‘medical mercenaries’ serving the Dutch Colonial Army attempted to capitalize from their colonial experiences by entering the highly topical discussions surrounding the emerging medical subfield of bacteriology in the late 19th century. A first aim was to add to a growing body of historiography situating the history of bacteriology in its colonial context, transcending national and imperial boundaries. For this purpose, I suggested the lens of ‘Germanophoneness’ to reveal the exchanges between medical researchers in Berlin, Amsterdam, Sumatra, and Tokyo, connected through German-language medical publications and education. Moreover, the chapter highlighted how ‘medical men on the spot’ in European colonies emerged as pivotal characters in the late 19th-century debates surrounding bacteriology. I demonstrated how ‘medical mercenaries’ often severely criticized or resisted the medical paradigms proposed by bacteriologists, that linked the spread of disease to universally occurring, pathogenic microorganisms, and discursively instrumentalized their practical experiences and first-hand observations in the colonial army in claiming an authoritative position in bacteriological discourse. Hence, the chapter suggested a complex relationship between bacteriological universalism, environmental determinism, and colonial ideology in European medicine. Despite repeatedly emphasizing their colonial field experience, ‘medical mercenaries’, too, conducted experiments and microscopic investigations. Bacteriologists, on the other hand, frequently researched in the ‘colonial field’, benefiting from privileged access to racialized bodies. While bacteriology claimed to be fundamentally ‘universal’ and ‘objective’, race remained a key factor in studying the human body, with concepts such as ‘racial immunity’ or sub-disciplines like ‘racial pathology’ continuing to influence medical knowledge production even after bacteriology prevailed as the dominant paradigm. Furthermore, the chapter offered insights into the transimperial circulation and transformation of medical knowledge between the Netherlands, the Dutch East Indies, Meiji Japan, Germanophone Europe, and the German Empire, and demonstrated how medical knowledge produced in the Dutch East Indies was made available for German imperial efforts at the turn of the 20th century. The last section then briefly diverged into the ways in which the

colonial experience shifted ‘medical mercenaries’ perceptions of their countries of origin. For this purpose, I presented the examples of two former ‘medical mercenaries’ who capitalized on their colonial services by opening spa clinics in Switzerland and the Habsburg Empire, promoting the healing properties of the Germanophone European ‘hinterlands’ to colonial veterans recovering from tropical diseases.

Chapter 4 finally shifted the focus from medical practitioners employed in the military to civil physicians. More specifically, it placed the spotlight on Swiss and German physicians employed with private, European tobacco and rubber companies on the ‘plantation belt’ in northeastern Sumatra, where they became responsible for the health of Javanese and Chinese indentured laborers growing and processing lucrative cash crops. The chapter revealed how the hospitals established in the context of the Dutch colonial government’s ‘ethical turn’ provided career opportunities for Germanophone physicians even after the Dutch Colonial Army had largely halted the recruitment of ‘foreign’ medical personnel. Within this, I argued that Swiss and German physicians benefitted from the historically strong presence of planters and plantation owners from Switzerland and the German Empire in Sumatra. As I have demonstrated, while being deeply embedded in the internationally composed planters’ community, German-speaking physicians continued to uphold their distinct national identities, taking part in the various activities of local national associations such as the German Association (*Deutscher Verein*) on Sumatra. Imperial cosmopolitanism and national belonging hence co-existed without major tensions. Moreover, by carefully analyzing their accounts, the chapter significantly challenged the dominant narrative established by the companies as well as parts of historiography claiming that the private health care system on Sumatra primarily aimed at improving the health and well-being of ‘coolie’ workers. Instead, I pointed to the various biopolitical implications of ‘plantation hygiene’, in particular the ways in which medical knowledge produced in the plantation hospitals and laboratories on Sumatra deepened racialized perceptions of ‘coolie’ bodies and their ‘fitness to labor’. These theoretical considerations directly translated into practical hygiene policies, most importantly in the establishment of ‘model villages’ inspired by military barracks. The design of the barracks was guided by a paternalistic attitude that depicted ‘coolies’ as inherently lacking in hygiene awareness and in need of European guidance, which was allegedly delivered through medically informed, European architecture. Moreover, the German Empire would hire ‘veterans’ from Sumatra’s ‘plantation belt’ in its efforts to consolidate colonial overseas possessions in the Pacific. The medical knowledge produced on the plantations in the Dutch East Indies was further made useful for German imperial efforts through various publications in German

medical journals, authored by physicians employed within Sumatra's plantation hospitals. I further argued that, for many Germanophone plantation physicians, the former employment in Sumatra opened valuable opportunities for transimperial careering and social upward mobility, with some being granted specialized medical professorships in Europe. The last section finally alluded to plantation physicians from Sumatra joining research commissions to Asia organized by the League of Nations.

This glimpse into the colonial antecedents of the international health movement however points to the first major limitation of this study. By setting its focus on the time from 1873 to the 1920s, neither the late nor the postcolonial era could be considered, despite the fact that historians have called for a deeper investigation of the connections between 'colonial' medicine and mid-20th century Western medical aid in the so-called 'Global South' such as medical developmentalism or the global health movement. Apart from this temporal constraint, a further limitation of this thesis concerns its spatial dimensions. Even though the transimperial approach allowed to briefly delve into empires beyond the Dutch sphere of influence such as Meiji Japan, the Ottoman Empire, and the German colonies, the main point of reference lay in the Dutch East Indies. The entanglements between the Dutch and other Empires could be explored more thoroughly, for example, by considering sources from Japanese or Ottoman archives. In a similar vein, through my focus on actors from 'Germanophone Europe', physicians from various other European 'margins' – such as Scandinavia or Eastern Europe – were not considered in this study, not least due to the linguistic limitations of its author. The examples of the Czech medical officer Pavel Durdík or the numerous Danish physicians serving the KNIL were only mentioned in passing but might be promising cases for future research to explore. Moreover, I chose to set my focus on the history of colonial medicine, largely disregarding the ways in which physicians in Dutch colonial services shaped neighboring disciplines. The presence of their various material traces preserved in Swiss, Austrian, and German museums, as hinted at in the opening section of this conclusion, strongly indicates that fields like zoology, ethnography, botany, or geology were significantly influenced by 'men on the spot' serving 'foreign' colonies. A more comprehensive exploration of the influence of colonial physicians on the broader field of natural history warrants further investigation. The admittedly most relevant lacuna left behind by this study concerns the voices of subaltern patients, soldiers, physicians, laboratory assistants, or concubines. By unilaterally focusing on colonial sources, their various acts of resistance, contributions to colonial medical discourse, or romantic relationships could only be indirectly reconstructed through the accounts of Western physicians. Unfortunately, the Covid-19 pandemic breaking out in 2020 prevented me from

conducting field or archival research in Indonesia to correct this bias in my sources, consisting solely of European accounts. An important challenge for future historians will thus be to uncover indigenous views on the interactions with and activities of colonial physicians from Germanophone Europe, to unearth indigenous agency in contesting and shaping the European colonial medical sciences at the turn of the 20th century and the alternatives proposed by indigenous medicine, as well as the potentially long-lasting impacts of the activities of Germanophone physicians in the Dutch East Indies on Indonesian society. I believe, however, that this aim necessitates strengthened collaborations between researchers from Indonesia and the Western world, accompanied by a redistribution of funding for historical research, shifting resources from the so-called 'Global North' to the 'Global South'. Finally, such an endeavor also requires addressing the claims to scientific hegemony asserted by European academia, parts of which have been explored in this thesis. This also entails recognizing the inherent 'partiality' and 'situatedness' of knowledge produced within European universities and thereby creating spaces for diverse voices, challenging the prevailing narratives in Western colonial historiography.

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Curriculum Vitae

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Residence	Zurich
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Place of Birth	Zurich, Switzerland
Current Position	Independent researcher, curator “ETH extract”
Academic Degree	M.A.
Languages	German (native language), English (C2), French (B1), Dutch (B1), Indonesian (C1)

ACADEMIC TRAINING

2012–2015	B.A. in General History (major) and Communications (minor) at the University of Zurich (graduated 2015; summa cum laude)
2016–2019	M.A. in History and Philosophy of Knowledge at ETH Zurich (graduated 2019; summa cum laude)
2019	Language studies in Yogyakarta, Indonesia

PROFESSIONAL CAREER

2016	Intern online journalism Finanz und Wirtschaft
2018	Student assistant Chair for the History of the Modern World, ETH Zurich
2016–2019	Online journalist, production assistant, photo editor Finanz und Wirtschaft
2018–2020	Teaching assistant FernUni Schweiz
2018–today	Freelance journalist & essayist Tsüri.ch, Das Lamm, WOZ – Die Wochenzeitung, Zürcher Hochschule der Künste, DOGO Residenz für Neue Kunst
2019–2023	Research assistant and PhD student Chair for the History of the Modern World, ETH Zurich

2023-today Independent researcher, curator "ETH extract"

VOLUNTEER WORK

2019–today Co-founder & president of the non-profit association
Zürich Kolonial (www.zh-kolonial.ch/)

SCHOLARSHIPS, FELLOWSHIPS, AWARDS

2020 Wilhelm-Deist-Award for Military History, awarded by the Arbeitskreis Militärgeschichte for the M.A. thesis *Zwei Schweizer Ärzte im „Fernen Osten“. Wissenschaft, niederländischer Imperialismus, das Schweizer Bürgertum und die Kolonie als Kapital, ca. 1879-1935* ("Two Swiss Doctors 'Far East'. Science, Dutch imperialism, the Swiss bourgeoisie, and the colony as capital, c. 1879-1935")

MEMBERSHIPS

Schweizerische Gesellschaft für Geschichte (SGG)

Swiss Network of Female Historians

PUBLICATIONS

Blaser, Claire/Ligtenberg, Monique/Selander, Josephine: 'Introduction. Transimperial Webs of Knowledge at the Margins of Imperial Europe', in: *ibid.* (eds): *Transimperial Histories of Knowledge. Exchange and Collaboration from the Margins of Imperial Europe*, *Comparativ – Zeitschrift für Globalgeschichte und vergleichende Gesellschaftsforschung* 5–6 (31), 2021, pp. 527–539.

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TEACHING ACTIVITIES

2018-2020

With Dr. Bernhard C. Schär: 'Kulturgeschichte', BA Seminar, Spring semesters 2018-2020, FernUni Schweiz.

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With Dr. Bernhard C. Schär: "Niederländisch Ostindien und die deutschsprachigen Wissenschaften, ca. 1800-1950", BA/MA Seminar, Spring Semester 2021, ETH Zurich