

pandemic, the collection of the primary documents assembled by Phillips ‘answer basic issues which contemporary documents did not address’ (p. xxii), exposing how ordinary folk coped during the pandemic. It also reveals personal perspectives from patients as well as rumours and tales about the disease. The uniqueness of the material assembled is that they are firsthand accounts of men and women who were directly affected by the pandemic. This is a valuable assemblage of historical sources – interviews and letters, which have not been available in the public domain.

Going through the letters and interviews, one can witness the graphic tales of the trauma, anguish and the struggle for life during the pandemic. The collection also exposes the intervention capacity of the state and the measures taken by local rural and urban councils and organisations such as churches. Accompanying the collection are twenty images that give the reader a visual idea of the impact of the ‘Spanish’ Flu and responses thereof. The images range from cemetery registers, funerals, orphaned children, acts of kindness such as providing relief and medical care and advertisements from pharmaceutical and insurance companies.

One must commend Howard Phillips for this collection. For those unfamiliar with the history of the pandemic, the preface accompanying the interviews and letters does an excellent job in exposing readers to a nuanced and succinct history of the pandemic in South Africa. Most importantly, Phillips has gifted historians and those interested in personal accounts of the pandemic, rich material that can be used in further writing, rewriting and reinterpreting the history of the pandemic in South Africa. In these uncertain times, *In a Time of Plague* gives us an idea of the nature of the catastrophe that exposed the fragility as well as the resilience of South Africans during the pandemic. This work by Howard Phillips is germane, considering the unprecedented times we are living in. The book is recommended not only to medical historians and Africanist scholars but also to all who are trying to make sense of the current Coronavirus (COVID-19) pandemic – which has, as with past pandemics, shaken the world to its very foundations.

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Anne Pollock, *Synthesizing Hope: Matter, Knowledge and Place in South African Drug Discovery* (Chicago, IL and London: University of Chicago Press, 2019), pp. 191, £18.33, paperback, ISBN: 978-0226629186.

A dominant narrative in global health studies is that while scientific knowledge production chiefly occurs in the global North, Africa is mainly a repository of clinical trials subjects and raw materials. What are we, then, to make of transnational scientific collaborations where the aim is to capacitate the development of in-country drug discovery research expertise and infrastructure to address locally prevalent diseases in the global South?

This is a question posed by Anne Pollock in relation to the example of iThemba pharmaceuticals in South Africa. iThemba (which means hope in isiZulu) was founded in 2009 to engage in drug discovery for HIV, TB and Malaria. While located in South Africa, the company was fundamentally transnational in nature: although its bench scientists and managers were based within South Africa, its Scientific Advisory Board was made up of scientists from the global North. Mitigating the ‘brain drain’ (p. 24) and the notion of finding ‘African solutions to African problems’ (p. 10) were important motivations behind the company’s founding.

It was, however, unsuccessful in its mission and closed down in 2015. Pollock argues that this brief chapter in contemporary pharmaceutical history matters because it shows the challenges inherent to creating and sustaining a small, innovation-orientated drug company, driven by nationalist goals in the global South. The choice of South Africa as a case study is significant because, by African standards, it has

established, and highly regarded, scientists and advanced biomedical research infrastructure, in terms of universities, laboratories and research institutes.

Pollock's analysis is that pharmaceutical knowledge needs to be understood in terms of particular places and times (in this instance, post-apartheid South Africa). She also makes the case that it must be interpreted in relation to the material products that the scientists wished to manufacture. Here she mentions elements such as active pharmaceutical ingredients, formulation and manufacturing.

In terms of the parts of the book, Chapter 1 describes the ways in which the example of iThemba undercuts easy notions of global North/South dichotomies in literature on pharmaceuticals in South Africa. These have often focused on access-to-medicines campaigns, traditional knowledges and bioprospecting and clinical trials. Chapter 2 outlines the history of the site on which iThemba was located: a dynamite factory in Modderfontein, which provided explosives to the mining industry. It, thereby, suggests the ways in which post-apartheid South African science has built on infrastructures created by colonialism and apartheid. Its third chapter outlines how it attracted local and international research investment. The fourth then discusses how the bench scientists at the company aspired to make a meaningful situated contribution to global science 'at home'.

Finally, Chapters 5 and 6 focus more on the material factors of South African scientific knowledge production: pharmaceuticals are simultaneously both intellectual property and products made through processes. In terms of the latter, the company's focus on green manufacturing using continuous flow chemistry is presented in terms of the vision of 'leap-frogging' (ie. skipping over a stage of technology in a fashion similar to cellphones having been introduced before landlines in many parts of Africa). South African government funding was insufficient to sustain the project. Due to the need to generate additional revenue, much of the scientists' time became consumed with synthesising molecules for pharmaceutical companies abroad. Their time was not primarily used to advance their own research agendas, based on local health needs.

Despite these realities, Pollock ultimately holds an optimistic view that the scientists who were involved in the company have gone on to be involved in other drug discovery ventures in South Africa. A key figure in the book is Dennis Liotta, an Emory University-based founder of iThemba who played a fundamental role in the development of second generation antiretrovirals. According to Pollock, he argued that 'if drugs were discovered in developing countries and companies based in those countries owned the IP, the drugs would be affordable and relevant to their needs' (p. 23).

This assumption could have been further examined: to what extent have global South universities, pharmaceutical companies and research institutes committed to global access licencing agreements? In order to realise the rights to access to health care and to enjoy the fruits of scientific knowledge (the 'right to science') they should commit to licencing their patents to generic drug companies willing and able to produce them at an affordable price. A failure to do this could theoretically, and ironically, result in African scientists and investors becoming rich from highly priced African solutions (drugs) unaffordable to poor Africans.

A particular strength of the book is its use of a particular global South example to show the benefits and drawbacks of an effort to enable in-country scientists to develop new drugs appropriate to local needs. It could, however, have offered us a slightly more situated account of how South Africa's political economy shaped iThemba's trajectory. For instance, its discussion of Nelson Mandela's hopes in terms of the development of science and technology in South Africa could have been further situated in the context of his role in the post-apartheid government. While he was, indeed, the head of state during the first ANC-led administration, much of the day-to-day business of running the state was devolved to Deputy President Thabo Mbeki. A potentially fruitful area of research would be which individuals and networks were influential in shaping pharmaceutical-related science and technology policy during this period.

Further, relatively minor, points open to debate include: the idea of Tutu as an ANC figure (there have been several moments of dispute between him and the ANC in the post-apartheid era) (see p. 90); and, the idea that there is reliable access to cheap electricity would need to be qualified since 2007, which

marked the beginning of the country's periodic rolling black-outs (often euphemistically referred to as 'load-shedding') (p. 44). These do not, however, detract from the overall importance of the work.

Ultimately, in its problematisation of dominant geographic and sociological understandings of scientific knowledge production, the book makes an important contribution to science and technology studies and critical global health studies.

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Hans Pols, *Nurturing Indonesia, Medicine and Decolonization in the Dutch East Indies* (Cambridge: Cambridge University Press, 2018), pp. xx + 285, £41.00, hardback, ISBN: 9781108424578.

Pols' book is an exceptional account of growing nationalism and the movement towards independence of Indonesia. The author has highlighted the roles of Indian physicians and medical students in the twentieth century in these areas. The author is well versed in the languages and culture of the region and uses under-explored sources, including the journals, letters and speeches of medical men. He takes a stand against the Dutch administration and against European doctors, who 'harboured an especially strong and forthright hostility towards Indies physicians'. In his opinion, their involvement in the colony, though often motivated by good will, ultimately served only to lard the Dutch treasury.

Pols' account of the founding of the first organisation of medical students, the 'Boedi Oetomo', contrasting with the European part of society is revealing: Indies medical men had a range of profoundly different views (some preferring to Europeanise, some favouring classical Javanese culture, some focussing on noneducated populations). There were two medical colleges, one in Batavia and one in Surabaya, for the formation of 'Indies' physicians, a rank subordinate to that of European doctors. Both schools were breeding grounds for nationalistic sentiment. Quite a few graduates were able to study in the Netherlands and some went back with a medical doctorate. Interesting are the stories of some individuals and their careers in medicine or politics, like Abdul Rivai. However, colonial Europeans generally regarded educated Indies individuals as overly ambitious mimics who had forgotten their place in colonial society. One of these early voices, that of Dutch physician J.H.F. Kohlbrugge, receives ample attention from the author. Kohlbrugge was vocal and extremely conservative – including in medical matters – however his influence was perhaps not as significant as Pols' emphasis on his accounts suggest. There were 'progressive' Dutch forces as well. In the wake of the 'Ethical Policy' of The Hague, the Civil Medical Service was established. It focussed more on the health and (prevention of) diseases in local populations, but the many Indies physicians who served in it received low salaries. After the Association of Native Physicians was founded, their discontent grew and strikes were considered. Finally, the government gave in with a salary increase. Yet, as the author stresses, most European medical men considered Indies physicians as 'hybrids', that is, well educated for their jobs, but unfit to socialize with.

Whether that also applied to students at the Medical Academy in Batavia (opened in 1927 on equal footing with Dutch universities, including with the authority to award doctoral degrees) is not mentioned. The author only states that it was more difficult for Indonesians to study there and that they were in the minority. Other authors give very different student figures.

The involvement of the Rockefeller Foundation in Java is significant here. Its public health activities, including educational campaigns on village level, were acclaimed by Indies physicians, but less so by the Dutch cure-oriented and often bureaucratic physicians. In this context, the author makes a praiseworthy attempt to uncover the activities of Dr Abdul Rasjid. In 1935, Rasjid was impressed by the Rockefeller project of involving the public to reduce hookworm infection. He became a leading voice in campaigns to include more Indian physicians in the Public Health Service, to respect local 'adat' (custom) and to