

Clapperton Chakanetsa Mavhunga. *The Mobile Workshop: The Tsetse Fly and African Knowledge Production*. xvii + 412 pp., notes, bibl., index. Cambridge, Mass./London: MIT Press, 2018. \$37 (paper). ISBN 9780262535021.

This book is concerned with how the Rhodesian project of white rule in present-day Zimbabwe built on, instantiated, and ultimately foundered on its relations with African knowledge practices. *The Mobile Workshop* develops Clapperton Mavhunga's broader intellectual project, creatively and defiantly centered on foregrounding African production and organization of knowledge. It shows how a constellation of European enterprises was organized to extract value from African expertise in animal husbandry, settlement, and environmental stewardship and from alienated African labor. It reconstructs a history of scientific practices in Africa, set against visions of Africa as laboratory, in which the forcible supplantings of African strategies and categories by notions of experimental validation, disciplines such as entomology and ecology, and techniques such as spraying, defoliation, and culling emerge as deeply ironic formulations of extractive practice—and ultimately as a means of finessing thievery.

Examining human grappling with *mhesvi* (an insect characterized entomologically as *Glossina* and generalized across Africa according to its Setswana name, tsetse), Mavhunga shows how acts of translation, enacted under conditions of constraint between *vatemala* (black people) and *vachena* (white people), gave form to the entirety of means employed to control the economic risks of insect-borne infection of livestock over the ninety-year period (1890–1980) of white rule in what is now Zimbabwe. Using *vachena* traveler and farmer accounts from the nineteenth and early twentieth centuries, he documents *ruziwo rwevatema* (the knowledge of black people) concerning *mhesvi* as a series of political and economic technologies occasioned by the disruptive and irregular mobilities of insects. He shows how *vachena* appropriations of this knowledge continued to rely heavily on the agency, know-how, and labor of *vatemala*, forced to engage with *vachena* ranching and farming by a succession of violent dispossessions and resettlements under Rhodesian white rule.

In a succession of striking chapters, Mavhunga details how Rhodesian tsetse control was continually shaped by trial and error, by acts of translation from *ruziwo rwevatema*, and by global currents in vector control, how *mhesvi* again and again determined engagement with the terrain, and how the major components of tsetse control—defoliation, chemoprophylaxis, landscape management, stocking arrangements—recapitulated and relied on *ruziwo rwevatema* throughout the period of white rule. He uses diagrams, plans, reports, and interviews to examine fly trapping, biological warfare, *cordon sanitaire* strategies, control over movement of people and animals, and game hunting as a set of layered strategies determined by the pain *mhesvi* inflicted from the earliest years of white ingress (p. 50). It was precisely the fugitive mobilities of *mhesvi* that fused *ruziwo rwevatema* in a dynamic and evolving relation with scientific means of coming to know tsetse, and it is a credit to the author's methods and skills that familiar scientific terminology comes to seem alienating in the context of the epistemic violence inflicted in Rhodesia.

The recovery and foregrounding of *vatemala* agency elicits poignant indictments of Rhodesian dispossession. Cattle and their thriving are a manifestation of *ruziwo rwevatema* (p. 88), while their repeated, forcible, and organized confiscation enabled the Rhodesian regime to persist in times of (white) economic hardship. Ndebele policies of *ukulagisa*, the parceling out of herds among kin to ensure against environmental risks (p. 39), are referenced by the Rhodesian government when forcing African herders to remove cattle into buffer zones as sentinels against advancing *mhesvi* (p. 161). Game culls repeatedly pit African hunters and their economic strategies against the perversities and cruelty of settler rule. *Vatemala*, resettled, corralled, and made to experience life in their own lands as akin to animals, are subject to chemical warfare once they become insurgent and fight for freedom from Rhodesian rule. In a final irony, the counterinsurgent adaptation of available technology (pesticides and Land Rovers), which constituted the *ruziwo rwevatema* (knowledge of whites), in the intensive phase of war (1976–1979) is presented here as not lost, but part of a broader counterinsurgent knowledge to be systematized and implemented outside its initial context (p. 316).

Given Mavhunga's broader intellectual project, the glossary is a key component of the book. With over four hundred entries, drawn from languages spoken in Zimbabwe, it is indispensable in meeting the author's stated aim of rehumanizing *vatema* as insiders in the historiography of Africa, as agents whose intellectual production is not well represented as fossilized, vestigial, or colonized, to use nonindigenous historiographical and anthropological categories. The consistent prominence of African language terminology offers an invitation and an opportunity to reconceptualize processes that have commonly been bracketed off as colonial and to understand the way in which expatriate and settler extractive strategies were grafted onto (and parasitic within) African political technologies. The book succeeds in furthering Mavhunga's intellectual project and is an essential counterpoint to complementary histories of environment and disease control in Africa, alongside and against which it will mobilize not only a keen readership but a deeply engaged response.

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Gerd B. Müller (Editor). *Vivarium: Experimental, Quantitative, and Theoretical Biology at Vienna's Biologische Versuchsanstalt*. Foreword by **Rob Wallach**. (Vienna Series in Theoretical Biology.) xiv + 284 pp., bibl., index. Cambridge, Mass./London: MIT Press, 2017. \$45 (cloth). ISBN 9780262036702.

The Viennese laboratory known as the Vivarium—officially the Biologische Versuchsanstalt or Institute for Experimental Biology—appears in histories of biology, if at all, as a backdrop for the work of its better-known scientists, such as the ill-fated Paul Kammerer or the sex-hormone researcher Eugen Steinach, or else as a minor example of the new experimentalism of the early twentieth century. But as this excellent volume shows, it has an unusual and compelling story of its own. The various chapters consider its physical plant, its equipment, its funding, its leading researchers and their family histories, their research agendas and experimental practices, but also the political situation for a predominantly Jewish institution in the turbulent years between the demise of Austria-Hungary and the Anschluss of Austria by Nazi Germany.

The building stood in an unusual place for a laboratory, on the outskirts of a huge amusement park, the Prater, where it was built in 1873, in extravagant neo-Renaissance style, to be one of the park's attractions. It housed an aquarium at first, later an indoor zoo. It was bought by three biologists in 1902 and repurposed as a private research facility, but with a supervisory board based at the university (after 1914 at the Academy of Sciences, to which ownership was transferred). As Klaus Taschwer argues in his chapter on the building, it never entirely lost touch with its origins as a place for public engagement or with its intermediate positions between the park and the city, between professional biologists and amateur aquarium keepers, between academic and popular science, and between the private and the public sector.

The chapters by Georg Gaugusch and Johannes Feichtinger locate the Vivarium at the confluence of larger sociocultural and economic trends that created great industrial wealth and a Jewish "haute bourgeoisie" in the late nineteenth century. Gaugusch focuses on the families of the three owner-directors—Hans Prziham, Leopold von Portheim, and Wilhelm Figdor—all of whom inherited the means to finance the Vivarium. The story has striking parallels with Carl Schorske's classic account of Viennese modernity, in which the sons and grandsons of industrialists became patrons and practitioners of the arts and rebelled against just the sort of historicism embodied in the neo-Renaissance Vivarium building. Feichtinger goes into more detail on patronage in fin-de-siècle Viennese science and on the financing