WAGENINGEN SCHOOL DAYS

Harro Maat, *Science Cultivating Practice: A History of Agricultural Science in The Netherlands and its Colonies, 1863–1986*. Dordrecht: Kluwer Academic Publishers, 2001. Pp. vii + 249. €95.00, £60.00, US$88.00 HB.

By Andrew Goss

Since the State Agricultural School in Wageningen opened its doors in 1876, the Netherlands has had a school exclusively dedicated to researching, teaching, and propagating agricultural knowledge deemed important to the Dutch nation. Even though for most of its history the school has remained separate and inferior to Dutch academia – graduates of the school receive the telling title 'agricultural engineer' – the institution has maintained political and scientific authority, weathering recessions, hostile takeover attempts from two universities, and parliamentary cost-cutting measures. This is an important story, and unlike much Dutch historiography written in the Netherlands, it is available here in English. Because agricultural science was concentrated in a single institution in the Netherlands, a history of its professionalisation promises to answer questions about the relationship between agricultural science and technology, political ideologies (especially liberalism) and agriculture, and markets and state development programs. Maat tackles both the research and educational aspects of agricultural science. And he transcends boundaries held sacred by many Dutch scholars, by including in his analysis the development of agricultural science in its large Asian colony, the Netherlands East Indies (now Indonesia).

Starting at the end of the nineteenth century, Wageningen agricultural engineers fanned out across the Dutch colony, working in both private and government enterprises. What emerges centrally in this book (translated by the author from his dissertation written in Wageningen) is the narrative of the successive leaders of the Agricultural School nimbly navigating between the interests of and demands raised by farmers, politicians, government bureaucrats, colonial planters, and academic scientists. Prin-

Metascience **12:** 405–408, 2003.

cipally they accomplished this by successfully placing the Wageningen Agricultural School as a centre of expertise in both universal scientific knowledge and practical know-how. After about 1900, when the school escaped from the yoke of direct government control (and the failed earlier program of producing scientific farmers), the school's leaders maintained and expanded their discipline, quickly adjusting to new opportunities. When it became clear that colonial agriculture demanded applied agronomists and foresters, they established a curriculum and started sending graduates to the colony. The school adopted fashionable research projects such as wheat breeding, sometimes spinning them off to one of the associated experimental stations, and dropped pursuits when government or farmers lost interest. The amorphous nature of agricultural science gave them an advantage over the more conservative universities, with their traditional programs in botany and zoology.

The introduction situates Maat's thesis within the cultural constructivist field, positioning agriculture as a socially shaped technology. His theoretical discussion of this problem is somewhat idiosyncratic, although he suggests a number of interesting possibilities for contextualising Dutch agricultural science, including use of Gieryn's 'boundary work' and Mary Douglas's institutional 'thought styles'. Some readers will be disappointed that none of these concepts are taken up in the body of the book. Instead, purity versus utility constitutes the book's central tension. In the introduction, Maat distinguishes between science, what happened in the classrooms and laboratories, and practice, where Wageningen graduates applied knowledge in the field. How agriculturalists, including agricultural bureaucrats, teachers, researchers, and Wageningen graduates, managed the gap between science and practice motivates the study. While he presents ample empirical data about the difference between the classroom and the field, the professor and the graduate, and problems this caused, Maat's terms confuse rather than clarify. Evidence in the book shows how the Wageningen supporters argued that science applied everywhere, and that the learning of a proper agricultural scientific practice would increase the Dutch nation's control of nature. The debates in setting and implementing agricultural policy were about the proper relationship between pure and practical knowledge, not between 'science' and 'practice'.

In addition to the institutional history of the Wageningen Agricultural School, the book includes sections about agricultural research at and around the Botanical Gardens on Java, and chapters about wheat genetics in the Netherlands, rice breeding in the Dutch colonies (including Surinam), and mathematical modeling in agriculture. These are all told as

success stories, nuanced ones including setbacks and dead-ends, but with science gaining gradual control over Nature's chaos, all for the benefit of mankind. All this leads teleologically to 1986, the closing date of his study, when the agricultural school legally became a full-fledged university, with the teachers and researchers in Wageningen firmly embracing the academic ideal. But overall, the book is hard to read through, because rather than bringing his framework to the material, Maat follows the agriculturalists wherever they happen to take him. This makes sociological analysis difficult. The book reports what agricultural scientists thought and did, written in an neutral, factual tone. Agriculturalists' various programmatic statements about what the proper relationship of Wageningen science to practical life was, drives the narrative. And although footnotes appear on the same page, the text does not distinguish between Maat's own archival research, other historians' arguments, or normative statements by Wageningen professors (or their detractors). And nowhere is there a discussion of previous historiography, not even about the Wageningen Agricultural School. In conclusion the author can report that Wageningen got what it wanted – it became an academic research university – but not why it lost control over the practical management of agriculture.

The best sections of the book stay close to Wageningen, especially the students. Interspersed are findings from interviews with a large cross-section of graduates, including many who went to work in the Netherlands East Indies before 1940. Their stories of how they became agriculturalists, despite their education, are a healthy antidote to the professors' proclamations. And my favourite part of the book is a series of charts showing the changing curriculum between 1880 and 1980. The material about colonial Indonesia is uneven at times. Maat is right that the debate between 'pure' and 'applied' agriculture and biology was carried out on Java, and he identifies the principal scientists and their goals. But his results are confused, perhaps because he does not include the colonial state in the analysis. And sometimes raw assertions cover up lacunae in his argument; writing about the Dutch colonial rulers shortly after 1816, for example, he states that "the development of the island and its inhabitants became one of the issues of concern" (p. 35), without citing any evidence or authority for the claim. Historiographical consensus suggests that the colonial State took up the idea of development about eighty years later. And institutionalised colonial agricultural science, focused on development, did not evolve gradually throughout the nineteenth century, as Maat suggests, but in a burst during the decade after 1900. Still, this is a thorough book, and has a wealth of material about agriculture in The Netherlands. And the history

of agriculture, an important component of modern Dutch science, should, with this overview, not be overlooked any longer.

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