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The Environmental History of the Russian Steppe Region

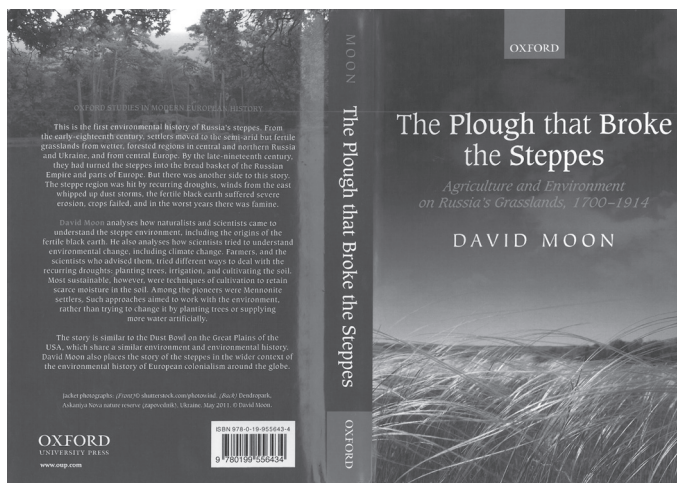
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At its heart, David Moon's monograph¹ explores the complex ways in which Russian society interacted with the natural environment of the steppe region as it pushed southwards from the forested regions of European Russia during the course of the 18th and 19th centuries. Moon dwells in particular on how the Russian settlers made sense of the marked contrast between their forested homeland and the largely treeless, rolling expanse of the steppe. The steppe region's combination of relatively fertile soils, marked continental climate, and relatively flat grassland areas had provoked written comment as far back as the fifth century BCE. At a general level, the book is a thought-provoking analysis of the difficulties faced by human society when it tries to discern the complex workings of the natural environment from the inside-out. The current debate over anthropogenic climate change raises a range of similar issues. The fact that the steppe grasslands encountered by the Russian settlers were the product, at least in part, of the grazing and burning activities of nomadic peoples who had traversed the region for many centuries prior to the Russian settlers, further underlines the difficulties facing the newcomers as they tried to unravel the subtleties of the region's natural rhythms.

The book is divided into three main parts. Part I reflects on the different ways in which the Russian settlers interpreted the natural environment and began to make sense of it through scientific and statistical abstraction. The following two parts are concerned primarily with the debates that emerged within Russian society during the 18th and 19th centuries as it tried to address the vicissitudes of the steppe environment. The general issue was an increasingly urgent one as the region promised to provide a considerable agricultural output to help maintain a growing population and economy and yet was characterised by periodic drought as well as

¹ *Moon D.* The Plough that Broke the Steppes: Agriculture and Environment on Russia's Grasslands, 1700–1914, Oxford: Oxford University Press, 2013. 319 p.



declining productivity. More specifically, Part II works through the main causal factors considered at the time to be at the root of the region's environmental changes and the associated chapters are shaped around the themes of vegetation, climate and the land. Part III moves on to examine the different ways in which the negative environmental changes evident within the region were addressed. The first two methods involved efforts to transform the regional environment for the better (i.e. that is from the perspective of the settler population) through the planting of trees and the artificial irrigation of significant areas of the steppe. In contrast, the final chapter focuses on the development of the science of agronomy which reflected a move away from purposeful efforts to change the natural environment and instead aimed to work *with* the steppe region, alleviating human-induced pressures and coaxing maximum yield from the fertile and yet relatively fragile soils.

The sustained work of scientists and state officials during the course of the late 18th and 19th centuries provided improved insights into the functioning of the steppe environment. At the same time, the highly interconnected nature of the steppe's physical systems, which was revealed most notably via the work of natural scientists such as V.V. Dokuchaev, P. Kostychev and A.I. Voeikov during the late nineteenth century, gave rise to multiple interpretations of the underlying causes of the observed environmental change within the region. For example, there was considerable discussion over the extent to which humans were impacting the climate of the region resulting in the increased regularity and severity of drought episodes. At the same time, others pointed to the drying out of the steppe itself due in part to the land management activities of the settlers which encouraged greater levels of evaporation and run-off. Dokuchaev was a main advocate of the 'drying out' argument and it is instructive to note that he arrived at such a conclusion through an historical understanding of the steppe region and particularly its soils. In other words, he ventured that climate had played a significant role in the formation of the region's distinctive *chernozem* soils and that this required a general consistency in the main characteristics of the region's climate over a relatively long period of time. Similar uncertainties existed over the origin and development of the ravines that characterised large swathes of the steppe region. And, the debate as to whether the steppe had ever been forested would rumble on for years. The noted problem of working and reasoning from 'inside' a vastly complex natural system

which had been evolving through geological time was compounded by a lack of reliable data extending over anything but the smallest of timescales (geologically-speaking) and resulted in ongoing debate and discussion.

Moon delves deeply into the various scientific disputes and subsequent policy responses engaging with a range of actors and in the process highlights the substantial ways in which science, civil society and the state intertwined in order to address the question of environmental change within the steppe region. Indeed, dealing with the steppe region's changing environment was very much a joint effort and the book conveys the sense of vigorous and purposeful debate throughout the period. The need for data was a constant concern of those involved and expeditionary initiatives aimed at generating certain types of data or else examining the role of this or that natural phenomenon characterised much of the period under study. Furthermore, the very nature of the steppe itself was opened up for debate as a result of the new findings, with the region's varied soil-type, climate, vegetation structure and so on scrutinised intently. While the broad shift from forested area to grassland ensured that the Russian settlers easily discerned a new *type* of natural environment, it was no easy matter to determine a clear border region. Indeed, the 'border' question would remain a feature of Russian scientific debate well into the twentieth century.

David Moon's monograph is a major contribution to our understanding of the environmental history of the steppe region. Its scholarly foundation ensures a wealth of fascinating insight into the nuances of the debates concerning environmental change in the region and rewards repeated readings. More broadly, it provides a salutary lesson for contemporary efforts to make sense of a changing natural environment, underlining the dangers of jumping to conclusions and the benefits of systematic data collection allied to constructive critical debate.

Ботаника в Санкт-Петербургском (Ленинградском) университете¹

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В 2013 г. исполнилось 190 лет со дня основания кафедры ботаники Санкт-Петербургского (Ленинградского) университета. Этому событию посвящён отдельный номер журнала «Вестник Санкт-Петербургского университета». Его открывает краткое предисловие нынешнего заведующего кафедрой проф. А.А. Паутова. Статьи, представленные в этом номере, могут быть условно разделены на три группы. Первая статья посвящена собственно истории кафедры ботаники (или, как раньше говорили, Ботанического кабинета). Во второй группе статей прослеживается зарождение,

¹ Рецензия на спец. выпуск журнала «Вестник Санкт-Петербургского университета». Сер. 3. Биология. 2013. Вып. 3.