

captivity in zoos and aquaria. This could be of direct use for historians of science researching vivisection, veterinarianism, agriculture, breeding practices and biotechnology.

This outstanding reader thus serves as a starting point for anyone interested in applying insights of the field to their own research and for activists looking for theoretical background. It is also meant for scholars in animals studies itself, as it showcases what is happening at the critical 'edge' of thinking (to not use the loaded term 'frontier'). A limitation of the volume is one that is also signalled in the book itself as a shortcoming of the field as a whole. Maneesha Deckha in 'Postcolonial' calls for the need to truly embed post-colonialism as a research stance within animal studies and for a greater presence of non-Western epistemologies in maturing the field. *Critical Terms for Animal Studies* thus simultaneously provides a promise for future growth and a demonstration that the field is coming of age.

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NICHOLAS B. BREYFOGLE (ed.), **Eurasian Environments: Nature and Ecology in Imperial Russian and Soviet History**. Pittsburgh: University of Pittsburgh Press, 2018. Pp. 424. ISBN: 978-0-8229-6563-3. \$34.95 (paperback).

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The Ural Mountains were used to separate European Russia from the Russian Far East that extends across Asia. This geographical division is overcome by the concept of Eurasia, described by eminent historian Sergey M. Solovyov as a boundless territory in which cohesiveness prevails over fragmentation. The uniformity and homogeneity of this nature shaped the homogeneity of activities, beliefs and values of people inhabiting this land, and prepared Russia for a profound unity between its parts. In this sense, Eurasia reflected a new space of geocultural identity characterized by integrity and inclusiveness, compared to the European space and its fragmentation into many geopolitical borders.

Edited by Professor Nicholas B. Breyfogle, a refined specialist in Russian imperial and environmental history, this volume highlights Eurasian geocultural identity, and at the same time gives back to this vast territory the astonishing richness and diversity that have formed its natures as interweaved with its societies.

Fifteen case studies compose a superb mosaic of histories taking place during Russian imperial and Soviet times, moving placidly from the pre-revolutionary period to the age of Communism and back, dismantling linear chronologies and narratives. Authors explore how Eurasian geologies, ecologies (thus rocks, lands, waters, airs) and biological communities have interacted with human activities over the past three centuries. The effects of this interaction induce the readers to rethink Eurasian history as a space of human–global environmental nexus, offering excellent material to scholars interested in situating local environmental technologies into global history. The introductory essay by the editor and the conclusion by Douglas Weiner and John Brook provide a sophisticated and content-rich frame that mobilizes environmental history to rethink the history of Eurasia under both the tsarist empire and the Soviet Union.

Material economic practices spanning pastoralism and agriculture, hunting and fishing, forestry and industrialism reveal not only how Eurasian economies, under different powers, have transformed the Eurasian biosphere, but also how the many effects of nature's transformation have in turn stimulated cultural and social change and development.

The variety of topics does not give the feeling of exhaustiveness but leaves the reader eager to learn more, adding more material to the list of case studies extensively discussed. These are grouped into five chapters. Section One addresses the steppe and its ecological transformation due to interventions such as afforestation (even in hostile environments) and deforestation, and in relation to coexisting and conflicting knowledge economies, from nomadism to sedentary

societies. The problem of drought in the steppe is also analysed, which led to a recognition of climate change in the Soviet Union and triggered sustainable ideas about land restoration and protection.

Section Two looks into water management in the early decades of the Soviet regime and beyond. Canal construction, irrigation systems and water policies are discussed as resulting from processes of negotiations among the Soviet state, the scientific elite (such as engineers) and the population of peasants acting as a workforce. In some cases, irrigation policies – having significant consequences like water pollution and the spreading of disease – facilitated the emergence of ecological rationality with an international echo that is manifested in the participation of Soviet scientists in environmental initiatives with a global reach.

The third part investigates the histories of rocks, lands, soils and minerals, as well their environmental degradation caused, for example, by the accumulation of heavy metals or mining waste, and the process of adaptation to (instead of the conquest of) permafrost in Arctic regions challenged by temperature rise due to industrial emissions.

The career of a specific rock such as nepheline is particularly instructive. A phosphorus-rich mineral that was a by-product of mining, nepheline turned from a ‘fertility stone’ into a heavy pollutant threatening life. This section shows how the manipulation of geophysical elements, for example for industry, contributes to revising conventional historiographies, suggesting a new and more cogent analysis of industrial development.

Section Four addresses fishing and how it contributed, for instance, to consolidating ethical and moral values of Christianity. Equally important, authors show how fishery science, conservation of aquatic life, coastal settlements and their relation to water had significant continuities in the passage from the Russian Empire to the Soviet state. Preoccupations about the effects of over-exploitation acted as a ground floor for the emergence of conservation policies both in the late tsarist years and under the new Soviet regime.

The final part underscores the effects of environmental transformations on human bodies and health. Toxins, radioactive materials and pesticides have profoundly altered the soils, affecting the health conditions of populations. One particularly interesting study is the spreading of malaria in Tajikistan. A public-health problem mirroring the poor conditions of the land and life in it, the case of malaria unveils a matrix of inequalities and injustices that have been protracted with the connivance of health-insurance mechanisms.

While the Eurasian context offers an exceptional variety of ways to face the questions raised by Brefoygle, Weiner and Brook – concerning the place and role of Eurasia in global environmental history – what emerges further from this collective effort is reminiscent of that geocultural integrity mentioned at the beginning. Approaching Eurasia from the point of view of its human–environment histories shows a less abrupt transition from imperial Russia to the Soviet Union than is usually thought. Yet the Revolution loses the character of being a rupture point, as is often emphasized in literature. Catherine Evthuov remarkably insists on the concept of a ‘usable past’ when it comes to tracing back pre-revolutionary history, which was overshadowed after the Revolution. The Russian Empire gets back into the picture through the environment as the main protagonist of its history, and this creates a more nuanced and less canonized (probably also more homogeneous) way to look at Eurasia’s past.

Trees and waters, fishes and soils, rocks and living organisms, human communities, and their changing nomadic, pastoral, rural, agricultural and industrial ways of coping with natural resources get imbricated in a pattern that extends beyond locality. Eurasian environments can be reconfigured as environments of the whole Earth, stretching up to a macro scale where the human imprint visibly shapes the planetary environment.

But this book is a remarkable attempt to prove that there is high heterogeneity beyond the idea of humanity as a geological force. These articles do not minimize the plurality of stories and responsibilities; quite the contrary, they thoroughly articulate and underscore them. In this

sense, *Eurasian Environments* expresses the reality of the Anthropocene vigorously, and suggests how environmental-history scholars might deal with this topic in the most productive way.

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JACQUELINE H. WOLF, *Cesarean Section: An American History of Risk, Technology, and Consequence*. Baltimore: Johns Hopkins University Press, 2018. Pp. 320. ISBN 978-1-4214-2552-8. \$49.95 (hardback).

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In the United States, caesarean sections account for about one in three births; in the UK, around one in four. The operation brings major abdominal surgery into the realm of the routine – most of us will know someone who has undergone the procedure. Yet it remains contentious, implicated in competing but intertwined narratives: one of which views the operation's prevalence as the result of growing demands from expectant mothers 'too posh to push', and another which depicts it as the inevitable end point of medical authoritarianism, where obstetricians present women with little choice but to deliver their babies surgically. In 2018 the World Health Organization took the unprecedented step of introducing new guidelines aimed at reducing the number of 'unnecessary' caesarean sections. Thus Jacqueline H. Wolf's history of the operation in North America is a timely piece of work with a crystal-clear relevance to medicine today.

While accounts of caesarean section are dotted across the historical record, Wolf traces the beginning of the operation in its modern incarnation to the nineteenth century. In 1830 the first published report of the operation appeared in the American press; in it an Ohio physician, John L. Richmond, starkly recounted the daunting scene he was confronted with when summoned to the house of a patient in the throes of an exhausting and life-threatening labour. Armed with 'only a case of common pocket instruments' (p. 18), Richmond decided to attempt a caesarean section. The child died, but the operation saved the mother's life. Such episodes were rare, however, and the operation remained shrouded in obscurity to most practitioners and patients. When it was practised, there was a propensity for it to be undertaken upon enslaved black women, whose bodies proved malleable material for doctors' experimental work.

The visibility of caesarean section grew in the latter part of the century as surgeons, buoyed by the protective powers of antiseptics, began to operate with greater success. By the 1910s maternal death rates from caesareans had plummeted to 8 per cent (p. 53). With success came a profound conceptual shift. Surgical principles had traditionally given precedence to the mother's life over that of the baby; thus procedures such as the grisly craniotomy, in which the foetus's skull was punctured to enable its body to be removed through the birth canal – meaning the loss of the child but frequently the saving of the mother – were almost invariably favoured over the risks of the caesarean section. That doctrine was increasingly questioned as caesarean section became safer. Childbirth risk came to be understood in terms of that presented to both mother and child. With the foetus enacted as an equal – or perhaps more valuable – object of surgical salvation, the dynamics of the procedure were irrevocably changed.

The most substantive analysis in Wolf's book comes as she turns to the second half of the twentieth century and the phenomenal increase in caesareans during this time. Between 1965 and 1987 the caesarean section rate soared from 4.5 to 25 per cent of births in the United States (p. 3). For Wolf, the normalization of the caesarean section during this period is only comprehensible through the wider nexus of reproductive technologies that were emerging, in which both the pathologization of prolonged labour and an unprecedented surveillance of the foetus were implicated. It was the development of electronic foetal monitoring (EFM), Wolf argues, that cemented the caesarean section into the everyday of obstetrics. Enabling doctors to continuously monitor the baby's heart rate, its introduction signified the complexity of obstetrical intervention; EFM was designed to