

Herrmann, B. and Dahlke, C. (eds.): Elements – Continents. Approaches to Determinants of Environmental History and their Reifications. Nova Acta Leopoldina, Band 98, Nummer 360. Deutsche Akademie der Naturforscher Leopoldina – Nationale Akademie der Wissenschaften, Halle, 2009, 304 p.

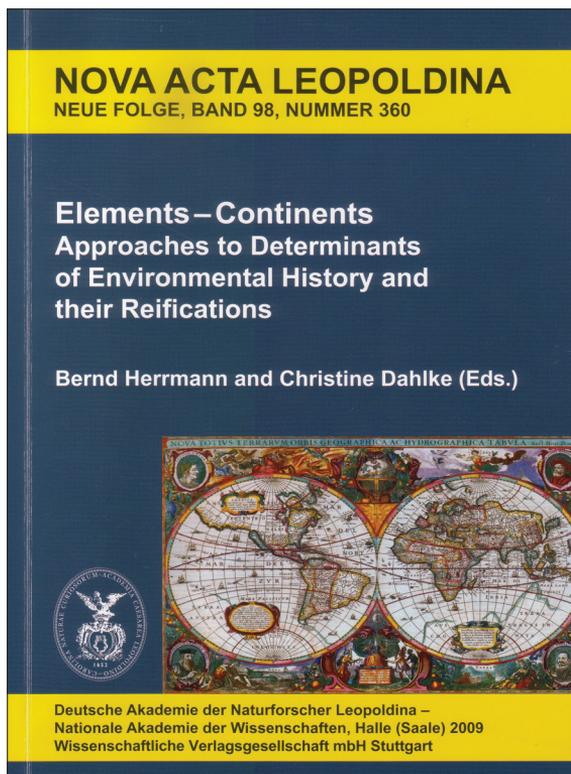
A universally accepted definition of environmental history has yet to be formulated. In simple terms it is a history that tries to explain why our environment is like it is and how humankind has influenced its current configuration, as well as elucidating the problems and opportunities of tomorrow. The American historian Donald Worster's definition is widely quoted, it states: "*Environmental history is the interaction between human cultures and the environment in the past.*"

In 2007, the German National Academy of Sciences Leopoldina organized a workshop at Georg August University Göttingen in co-operation with the Research Training Program "Interdisciplinary Environmental History". This publication contains both lectures of prominent scientists and abstracts of doctoral (PhD) students. The first part of the book is devoted to the lectures related to "Elements" of nature. Britta Allgöwer's study (University of Zurich) is dealing with the role of fire in landscape and forest evolution in the Swiss National Park using high resolution remote sensing investigations.

Petra van Damm's article (Free University of Amsterdam) analyzes different states of water from the viewpoint of environmental history and she gives an insight into transformations of the aggregate states and their impact on the countryside and lives of people in the Netherlands and other European regions. She concludes that water in its different states (ice, steam) became a commodity very early in densely populated Northwestern Europe. The benchmarks of water transitions in the environment history seem closely connected with those of economic, social and technological history.

Wolfgang LUCHT's study (Potsdam Institute for Climate Impact Research) focuses on the air, which can be seen as a planetary hybrid. The author provides a holistic view of the air as a joint product of geosphere and biosphere co-evolving throughout the Earth's history. He introduces a new scientific approach called geophysiology which aims at analyzing the planetary body changes.

Professor BORK, R. (Christian Albrechts University in Kiel) and his co-authors investigate soil formation in the geological and human history. Since the rise of agriculture, human activities determine



processes of soil formation and soil degradation. In urban areas former natural soils are nearly totally lost and replaced by anthropogenic deposits. Humans are using soils not only for agriculture and forestry but for several other purposes. One of the oldest techniques of soil use are construction techniques such as adobe brick or pottery production. Early figures made of soil more than 20,000 years ago were found. Some of the oldest pots date back to 11,000 B. C., were found in Fukui Cave, Japan.

Von TILZER, M. (University of Konstanz) analyses the fifth element, the emergence and proliferation of life on Earth. Life formation around 3.5–3.8 billion years ago is seen as a succession of steps of self-organization that were only possible in the absence of oxygen in the atmosphere. The greatest breakthrough during the evolution was the emergence of oxygen photosynthesis at least 2.7 billion years ago. The next major evolutionary change was the development of multi-cellular plants and animals. After the termination of the last glaciation ca 10,000 years ago, biological evolution of humanity came to a halt and was replaced by cultural evolution. The past 200 years have been considered a new geological era which is characterized by significant impacts at global scale and called anthropocene.

The second part of the publication touches upon the environmental history of different “Continents”. Professor SIEFERLE, R. (St. Gallen University) explores specific natural environmental conditions in Europe, with special regard to population, productive agriculture and natural disasters (e.g. volcanic eruptions, earthquakes, extreme weather events) in different historical contexts.

BEINART, W. (University of Oxford) deals with historical aspects of plant transfers to South Africa. Africans welcomed and absorbed many plants including as maize and prickly pear. The author argues that someone needs to be cautious in specifying asymmetrical plant flows and also in applying the concept of ecological imperialism.

ELVIN, M. (Australian National University in Canberra) focuses on two main features of late-imperial pre-modern Chinese economy that created strongest pressures on the environment. These were garden-building (horticulture style farming) and distinctive dual style of agricultural management that combined land farming with collective management of water. Since the medieval economic revolution good farmland rather than labor force became the factor of production in shortest supply.

Professor BARGATZKY, T. (Bayreuth University) in his study addresses iconic quality of land in Australia and Oceania. The land has been of paramount practical and symbolic importance to the aboriginal population. Land as an icon is interpreted as occurrences of gods. In Oceania land is transformed into iconic landscape through institutions like kinship group and the sacred community center in Polynesia.

Professor McNEILL, J.R. (Georgetown University, Washington) touches on environmental history of American continent. American ecosystems have been buffeted by two main invasions. The first invasion began perhaps 15,000 years ago when wanderers crossed the bridge connecting Siberia with Alaska. The second invasion started more than 500 years ago when Columbus arrived in American waters followed by millions of Europeans, enslaved Africans and a growing stream from the rest of the world. The study provides an interesting overview of the environmental consequences if this twin invasions. It gives attention to the themes of earth, air, water and fire. The second part of the paper is devoted to the industrialization, oil exploration, forestry and land use and urbanization in 19th and 20th centuries.

I recommend this book those readers who are interested in interdisciplinary studies like environmental history addressing the changing interactions between man and nature which is also a central theme of the geography since its existence.

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