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Gardens & Landscapes

Introduction: Scientific Traditions and Environmental Challenges - Essays on Ecology and History

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In an era marked by escalating ecological crises and environmental transformations, understanding the historical and conceptual roots of ecology and the environment has never been more urgent. These terms, central to both scientific discourse and broader societal debates, demand interdisciplinary approaches that bridge history, science, and philosophy. This special issue responds to that call, exploring ecological and environmental questions from diverse perspectives. In so doing, it seeks to enrich contemporary discussions and contribute to the growing body of knowledge in these fields.

As a doctoral student invited to curate this special issue, I have gathered five research articles and one book review, each offering unique insights into the themes of ecology and the environment. Together, these contributions investigate how such concepts have evolved, been applied, and continue to shape our understanding of the natural world and human interactions within it.

The conceptual framework for this special issue is rooted in the historical-scientific study of ecology and environment. The articles are organized into three thematic sections: the emergence of ecological science, historical perspectives on environmental issues, and reflections on human agency in the context of the current environmental crisis. While all the contributions revolve around the terms ecology and environment, they approach them from different angles, bringing new voices and methodologies into the conversation.

The first section examines the development of ecology as a scientific discipline. The opening article, by Gonalo Martins, explores the concept of the organism-environment relationship during what has recently been termed the proto-ecological period. Tracing its conceptual roots across various authors, this contribution illuminates the intellectual foundations of ecology. The second article, authored by Pier Luigi Pireddu, shifts to the early days of ecological science, focusing on how the organism-environment relationship was articulated within the limnological tradition. By examining the study of lake systems, this article reveals how foundational ecological concepts took shape in scientific

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practice. These two contributions are connected both chronologically and conceptually, providing a cohesive exploration of ecology's emergence.

The second section deals with environmental issues, and delves into the technological and cultural practices that have transformed ecological landscapes. Both articles in this section are centered on the Portuguese context, shedding light on understudied aspects of its environmental history. The first, by Patricia Trindade Monteiro, examines the ecological and cultural dimensions of olive cultivation in Portugal, revealing its long-term environmental implications. The second, by Paula Medeiros, investigates how the cultural and ecological landscapes of the Arrábida mountains influenced the settlement patterns of a religious community. Together, these articles give fresh perspectives on the interplay between environment, culture, and history.

The final article of this special issue addresses the role of human agency in the contemporary environmental crisis. Here, André Murgia critically engages with debates on the scope and nature of human action within the ecological and environmental dimensions of the climate crisis. This contribution offers a timely reflection on the challenges and responsibilities of humanity in an era of unprecedented environmental change.

In addition to the research articles, this special issue includes a review of *Arte Paisagista e Arte dos Jardins em Portugal* (2020), an important work on the cultural and ecological significance of garden and landscape art in Portugal. This review complements the articles by supplying additional outlooks on the historical and conceptual dimensions of ecology and environment.

By bringing together historical, scientific, and conceptual approaches, this special issue develops a multifaceted understanding of ecology and the environment. It invites readers to reflect on the historical roots, contemporary challenges, and future directions of these crucial fields, offering a valuable contribution to ongoing interdisciplinary debates.