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Introduction:  
Emancipation from  
Metaphysics? Natural  
History, Natural  
Philosophy and the Study  
of Nature from the Late  
Renaissance to  
the Enlightenment

**Tinca Prunea-Bretonnet**

*University of Bucharest/  
Romanian Academy*

**Oana Matei**

*Vasile Goldiș Western University of  
Arad, Romania*

This special issue is devoted to the analysis of the relationship between natural history, natural philosophy, and the metaphysics of nature in the early modern period up to the mid-eighteenth century. It considers the evolving dynamics among these disciplines as well as the role played by natural history in modern hermeneutics and aesthetics. The collected papers examine how early modern natural history acquires a growing importance in the study of nature, while observation and experiment gain epistemic priority among experimental philosophers. In the early modern and modern periods the critique of systems of natural philosophy and of Cartesian metaphysics goes hand-in-hand with the prioritization of experimental facts and collected data. The latter become the first, indispensable step in the process of knowledge acquisition. This is the case for Francis Bacon and his followers, who establish natural and experimental history as

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the preliminary step and the foundation for natural philosophy. Baconian natural history consists of a vast collection of observations and experiments from which, by induction, the experimenter is able to provide axioms and general rules of nature. These axioms and general rules constitute the foundation on which natural philosophy would be built. According to this approach, theoretical claims must be supported by experimental evidence, while natural philosophical theories, alert to the dangers of speculation, are inferred, by induction, from natural and experimental history (Anstey 2005, pp. 215–42; Anstey 2020; Anstey and Jalobeanu 2022, pp. 222–37; Anstey and Vanzo 2012, pp. 499–518; Corneanu et al. 2012; Jalobeanu 2015; Serjeantson 2014, pp. 681–705). Laws and principles are thus to be admitted in the study of nature, but only if founded on experimentally verified facts. This perspective seems to reject speculation and abstract systems and to contest their role in natural philosophy altogether. However, in spite of its influence on eighteenth-century thinkers, this approach to natural history would not go uncontested.

In the eighteenth century these transformations were accompanied by a new emphasis on metaphysics in the study of nature. While natural history was still largely regarded as preliminary to natural philosophy and continued to play a significant role in knowledge acquisition, Enlightenment philosophers elaborated new methods which rehabilitated metaphysical principles in the study of nature and promoted competing perspectives reassessing their pre-eminence (Anstey 2020). Two rival perspectives seem to compete on the philosophical scene: on the one hand, experimental thinkers justifying the theoretical autonomy of natural philosophy and emphasizing the prevalence of mathematical and empirically-oriented methodologies; on the other hand, novel approaches to the theory of principles arguing for the foundational role of metaphysical (a priori) principles and of speculative disciplines, such as metaphysical cosmology. This special issue explores the tension between the new role conferred to metaphysical disciplines and the study of nature, including a particular focus on the writings of Maupertuis, d'Alembert, and Kant. Our aim is to nuance the familiar narrative that inscribes Kant in the metaphysical tradition of Descartes and Wolff and opposes the latter to an experimental lineage comprising post-Newtonian thinkers such as Condillac, d'Alembert, and Maupertuis (Leduc 2015, pp. 11–30; contrast with Anstey 2018, pp. 131–50).

In order to shed new light on these transformations and tensions, the collected papers address the complex interplay between natural history, natural philosophy, and the metaphysics of nature. Particular attention is devoted to the different methodologies in use starting with the late Renaissance and leading up to the mid-eighteenth century. We examine not only conceptions arguing for a decisive role played by observation

and experiment, but also more speculative treatments of the study of nature, where principles and metaphysical standpoints reclaim a foundational function, albeit through a revised definition of metaphysics and a novel understanding of the role of speculative disciplines, such as cosmology.

Andreas Blank's paper, "Protestant Hermeneutics and the Persistence of Moral Meanings in Early Modern Natural Histories," examines the divergences in the symbolic interpretations of animals proposed in hermeneutics and in natural histories of the sixteenth and seventeenth centuries. Contrary to Peter Harrison's thesis on the disappearance of animals from natural histories due to the "literalist mentality of the reformers," Blank attributes this evolution, as well the differences between Protestant and Catholic positions, to the insistence on the need for extended textual support. Also, the reluctance to assign a prophetic meaning to animals and the elimination of spiritual interpretations of animals that are found in Protestant theologians such as Martin Luther, Johannes Oecolampadius, Johannes Benz, and Jean Calvin, explained the disappearance of symbolic meanings in many early modern natural histories. However, Blank contends that it is the analysis of the persistence of symbolic meaning of animals that offers the most interesting insights into the interplay of zoology and Biblical hermeneutics and therefore examines the writings of several Protestant naturalists such as Conrad Gesner, Caspar Heldelinus, Jeremias Wilde, Thomas Penny, and Thomas Moffett. Blank then compares their standpoint to the zoological writings of the naturalist Ulisse Aldrovandi, who elaborates a Catholic perspective on animal symbolism.

In her paper titled "Merchants of Light and Lamps: John Evelyn's Transition from Descriptive to Experimental Natural History," Oana Matei examines the methodological relation between natural history and natural philosophy in John Evelyn's writings on the vegetal realm. The paper claims that, in line with Bacon's methodology, Evelyn moves from a descriptive natural history understood as a collection of data, to a natural and experimental history that provides general laws and axioms of nature as the foundation for natural philosophy. Matei thus argues that Evelyn's conception of his project evolved from what Bacon claims to be an inferior role in the *New Atlantis* division of labor, namely that of a "merchant of light," associated with his natural histories of trades in the 1650s, to an advanced role, that of a "compiler" or "lamp," in the 1660s and after his association with the Royal Society.

Alessandro Nannini, in his paper "*Impetus aestheticus*: Baumgarten on Physics and Aesthetics," examines the role played by physics in Alexander Gottlieb Baumgarten's founding of aesthetics. He offers the first analysis of Baumgarten's lectures on physics and scrutinizes their relationship with

the newly founded discipline of aesthetics. Nannini focuses on the significance of physical metaphors for aesthetic experiments and discusses the treatment of aesthetic enthusiasm. Nannini then addresses the impact that Bacon, Boyle, and Leibniz had on Baumgarten's perspective.

In his paper "Maupertuis and the Reshaping of Natural History in Eighteenth-Century France," Marco Storni argues for a methodological shift in the life sciences in mid-eighteenth-century France. Storni claims that observation and experiment are relegated to a secondary place in favor of a novel appreciation of more speculative themes in natural philosophy. Focusing on Maupertuis's perspective, which he regards as emblematic, Storni analyzes the latter's move from a natural historical approach to a philosophical, more speculative take on life sciences.

The last paper, Stephen Howard's "D'Alembert's Cosmological View of the Sciences and its Legacy in Kant," addresses D'Alembert's influence on the precritical Kant. While admitting that D'Alembert elaborates a critical approach to both Maupertuis' cosmological views and Wolff's general cosmology, Howard argues for a common Leibnizian perspective which underpins their conceptions as well as D'Alembert's epistemological standpoint and his understanding of the task of the philosopher. The paper shows how a better understanding of D'Alembert's writings sheds new light on Kant's engagement with the cosmological tradition.

By means of case studies, the collected papers discuss the order and evolving boundaries of natural history and natural philosophy, as well as their relationship to hermeneutics and aesthetics. The studies in this volume address the autonomy of natural history and philosophy with respect to traditional metaphysics, or, on the contrary, their dependence on metaphysics understood as an a priori science (such as general cosmology) or as a meta-science (such as general metaphysics) comprising the principle(s) of all sciences.

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