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## **Book Reviews**

Time in the «third kingdom of nature»: Prehistory of paleontology and paleoanthropology and its philosophical contexts, ed. by Dezső Gurka, Gondolat Publishers, Budapest 2021, 231 pp.

Time in the «third kingdom of nature», edited by historian Dezső Gurka, surveys the relationship between geo-scientific and philosophical historicism in the 18th and 19th centuries, with particular focus on the understudied confluence of German idealism and Hungarian paleontology. It is the third book in an English - and German - language series published in Budapest, which began with studies of the circulation of mineralogical and anthropological knowledge among German and Hungarian actors, and which will continue, in the fourth installation, with a study of the enormous influence of Abraham Gottlob Werner's «Neptunist» school of mineral classification and geo-theory in collections throughout Central and Eastern Europe, to be published in 2022. This volume's twelve loosely connected chapters are themselves the result of a broad cooperation among German and Hungarian members of the Jena Mineralogical Society, ranging from museologists, philosophers, and historians to scientific practitioners, among them evolutionary biologists, geologists, and paleontologists. With an eclectic set of contributions reflecting the range of their expertise, the book's three sections explore, first, the historicization of earth and humankind in the age of enlightenment and romanticism; secondly, episodes from Hungarian paleontology from its development in the gentlemanly Republic of Letters to its institutionalization in museums and societies; and, finally, the place of paleo-sciences (the study of fossils both human and non-human) in the novels of Mór Jókai (1825-1904) and Ágost Greguss (1825-1882).

Readers can trace two major threads through the book. The first concerns the peculiar relationship between geo-sciences and philosophical thought styles, from Immanuel Kant's transcendentalism to Friedrich Schelling's Naturphilosophie. Relatedly, Martin Rudwick's numerous and authoritative works (esp. Bursting the Limits of Time, 2005) have shown how, in the same period, savants soon called geologists transposed methods of antiquarianism and historical scholarship into the natural study of the earth's stratigraphic «archives» and into the very conceptualization of «deep time». Though Time in the «third kingdom of nature» might have been enriched by more serious engagement with Rudwick and related scholarship, several of its chapters (pp. 90-100, 101-116) can be read as a complementary exploration of how philosophical frameworks were similarly constitutive of the tableaux through which some central Europeans interpreted evidence from the earth and unified planetary histories of geological, organic, and civilizational development. The editor's own contribution underscores the pre-disciplinary fluidity of a world where men of letters were often also men of practice, as

in the case of Johann Wolfgang von Goethe, who managed mines and mineralogical collections, or Henrik Steffens, who sought to harmonize Werner's mineralogical and Schelling's naturphilosophisch systems in a holistic history of the earth and its inhabitants (p. 109). In a particularly rich and probing contribution, Bob Woodard poses the question: «What would it mean for paleontology to be transcendental?» Or, more concretely, «what do paleontological artifacts mean for the natural constitution of experience?» With admirable conceptual dexterity, Woodard explores the way in which fossils became «philosophical artefacts» in the hands of Schelling and Carl Kielmeyer, bearing the «strange, fabulous or even ghostly character» of former worlds to contemporary minds (p. 92). Fossils were both productive and confounding, appearing «out of time» while evidencing time's own instability. Another example of philosophy's confluence with geo-history is Endre Hárs's eloquent exposition of Georg Forster's Ein Blick in das Ganze der Natur, steeped in the earth history of Georges-Louis Leclerc, Comte de Buffon. Seeking permanence amidst the fragmentation, ruin, and transience evidenced by earth history, Forster conceived of the (educated) human individual as a «representative of the entire human race». Such a personage is, as Hárs interprets, «suspended above time (in visionary fore - and hindsight). [...] he remains in the eternal youth of fulfilled human existence. He even possesses capacities which Buffon elsewhere ascribes to God» (p. 53). Further chapters (pp. 21-32, 33-56) in this vein by Zoltán Horváth and Wolfdietrich Schmied-Kowarzik delve comfortably into related fields of paleo - philosophical inquiry, including Kant's theories of race and organic development and Schelling's parallelism of natural and individual processes, all of which presuppose a readership familiar with relevant works and concepts of the German idealist canon.

A second major thread in the book concerns the development of Hungarian and especially Transylvanian earth sciences. These contributions open, but do not directly pursue, the significant question of Eastern Europe's «peripheral» relation to conventional centers of geo-science in England, the Netherlands, France, and Germany. Miklós Kázmér makes a lucid, almost tactile, contribution to this history in reconstructing the pan-European circuits of minerals and fossils dug from Transylvanian soil in the early 18th-century. Kázmér finds records of a «lost» natural history collection in the correspondence of Sámuel Köleséri, whose high rank in the Transylvanian mining bureaucracy afforded him privileged access to all manner of buried curiosities. Through Köleséri, Transylvanian gold, acanthite, cinnabar, wooly rhinoceros, giant elk, mammoths, and aurochs were posted to Zurich, London, and surely beyond, revealing Eastern Europe's place in a wider commerce of scientific objects and theories. Especially noteworthy is the subtle link Kázmér's draws between gift-giving conventions among Transylvanian miners, who regularly greeted superiors and visitors with minerals and fossils, to the gift-giving economy of gentlemanly science in early modernity. Kázmér's study is followed by Tobor Kecskeméti's brief history of the institutional development of Hungarian paleontology, which shows how an inchoate 18th-century pursuit that involved «farmers, rangers, miners, and teachers alongside several doctors, pharmacists, as well as priests» was formalized especially in the 1840s with the Hungarian Society of Natural History, Hungarian Academy of Sciences, and several decades later, the Hungarian Royal Geological Institute (pp. 140, 153). While Hunor and Máté Boér explore various Transylvanian adaptations of Linnaean mineral taxonomy, Gareth Dyke brings Hungary's legacy of paleontology to bear on contemporary fossils finds in the region-and pressing concerns about their protection and preservation. Collectively, these and other contributions work toward a historical geography of Eastern European earth sciences, a topic all the more urgent and significant because of its persistent neglect by Anglophone and Western European scholars. A more extensive study of the peripheral, or perhaps better *polycentric*, geography of Eastern and Central European earth sciences might, however, scrutinize the polemics of Hungarian paleontology, asking how practitioners defined their place in a geo-political as well as geo-historical sense. Kecskeméti, for instance, observes a marble memorial ordained by the paleontologist Ferenc Kubinyi (1796-1874) in 1858, which might be read as a marker of Hungary's scientific self-fashioning. Its inscription first deifies George Washington, said to embody the «masculine power of the New World», then the Prussian savant Alexander von Humboldt, undeterred by the dangers of tempests and summits and «the savagery of uncivilized people» (p. 159). As a historical document, the monument suggests scholars might engage Eastern European earth sciences in a still wider range of relations, beyond the predominantly Germanophone influences traced in this book, perhaps as far afield as the global histories of settler colonialism through which Kubinyi, at least, conceived of the import of his work.

The book's capacious scope means its contributions may appeal to a wide range of specialists, among them historians, philosophers, literary critics, and practitioners of the earth sciences. That its brief introduction is not followed by a conclusion, however, means readers may not find coherence amidst its wide-ranging studies of idealism, transcendentalism, anthropology, paleontology, paleoanthropology, paleoecology, and more. Certainly, a major thrust of the work is to explore the interrelation of natural and human sciences, especially among romantics, even if it does not seek to account for their seeming disentanglement with the emergence of 19th-century disciplines. The penultimate chapter (pp. 205-218), by Judit Bartha, quotes a fictional mine engineer from Mór Jókai's novel Black Diamonds (1870): «I'm going to give a lecture», he says, «It will blend science and poetry, mix phantasms and data in such a way that every scientist will fall into despair before they can separate them» (p. 205). Several chapters of this volume might indeed be read, like the mine engineer's lecture, as a study of the relationship between the phantasmagoric and the empirical, between fossil finders and philosophers.

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