S-77 – Global Underground: Circulations of Knowledge and the Sciences of Mining in the “long” 19th Century

The History of Technology

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Abstract:
The subterranean world of geological deposits became in the 18th and 19th centuries a most important field of political and economical expansion. This movement was made viable decisively by a multifarious innovative knowledge, transferred around the globe, published and institutionalized. These sciences of mining were trans-sectorial, in the sense that they issued as a combination of geology, chemistry, mathematics, economics etc. Such a trans-sectorial science, of the utmost importance to state and private economies, resulted from long processes of knowledge (trans)formation and transfer, in which manifold scientific-technological enterprises, scholars, practitioners, economic based explorations and scientific institutions contributed interactively.

Recent research shows the importance, for instance of energy rich resources for economic growth. To gain access to fossil combustibles, new knowledge had to be generated comprising chemistry, geology and mathematics. During the 18th and 19th centuries, an accumulative exchange of knowledge took place that on a global scale and often related to colonial infrastructures enabled the revolution of commodity chains. The exploitation of the subterranean by enterprises commercializing metals, minerals and precious stones worldwide changed the local natural and social environments.

The panel will in an innovative approach address the global transfer of new knowledge in the sciences of mining during the 18th and 19th centuries. In this sense, the panel engages with the recent literature about the complex relation of “science” and “empire” by pointing to cross-imperial circulations and interactions on a global scale. Contributions will deal with those world regions, where mining activities were either inexistent beforehand or had declined after periods of flourishing. Additionally, those periods are considered, in which by the transfer of knowledge new exploration and exploitation works emerged.

Different approaches to this history of global transfer of knowledge about mining the Earth’s underground are envisaged: in order to generate new narratives on global circulation of knowledge and the sciences of mining, processes of transfer of knowledge by biographic information and the use of journals of scientific voyages have to be reconstructed. Biographic backgrounds, institutional framework and contingency of traveling will illustrate how transfer of knowledge on the subterranean world took place.

Geological surveying as part of a colonial enterprise and colonial territorial expansion is another aspect that will be presented at this panel. After a period of rather unplanned territorial enlargements, new scientific knowledge and methods, as for example geology, enabled colonizing states since the middle of the 18th century to provide arguments concerning the subterranean wealth of hitherto non-subjugated
regions. This perspective on colonial history should enrich the historiographical narratives concerned with geo-political motives of colonial expansion.

Furthermore, new mining activities, between being reported in publications of different sort, often depended on transfer of technologies. Technological devices, as machines or ovens were transported from one part of the world to another, and besides the mining activity new infrastructures in production, transport and use of mining products emerged.

The submitters understand sciences of mining in the age of industrialization as a product of co-evolving social and knowledge economies. This interplay produced great amounts of documentation from the eighteenth to the twentieth centuries that is urgent to introduce into several fields of historiography. These sources dealing with sciences of mining and the global underground can help understanding on a global scale alternative ways into modern societies.

**Keywords**: Sciences of Mining – Colonialism – Scientific voyage – Institutionalization – Geology.

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