CHAPTER SIX

THE ELECTRIC ROD: DOWSING AND THE FREIBERG MINING ACADEMY

In 1780, the Göttingen Academy of Sciences sought to generate further research on an important topic by publicizing the following essay contest: ‘How was mining conducted in prior centuries? Can we learn something of benefit to present-day mining and smelting by comparison?’ The prize-offer remained open until 1783, when five contestants, among them Christian Hieronymus Lommer, submitted papers. Lommer was the first professor of mine engineering (Bergbaukunde) and mineralogy at the Freiberg Mining Academy in Saxony.1 Though he did not win, the contest afforded Lommer an opportunity to showcase Freiberg, fast becoming an internationally recognized center of earth science, to his distinguished Göttingen colleagues, men such as Johann Friedrich Blumenbach.2 Lommer’s response also demonstrated how Freiberg scholars invoked the dowsing rod to distinguish Academy science from mining superstitions.

Lommer cited numerous examples of a mining culture he claimed was in decline. Contemporary mining science at Freiberg was, he said, grounded on reason and a combination of different theoretical and practical branches, including chemical mineralogy, natural history, physics, geology (Lagerstättekunde), mine surveying, mechanics, hydraulics, and hydrostatics. Lommer pitted these fields against mining

1 Göttingische Anzeigen von gelehrten Sachen, nr. 202 (1783): 2027–8. The original offer was repeated in 1781 and 1782, before the Society awarded two of five contestants in 1783 the prize of fifty ducats, to be shared. Christian Hieronymus Lommer, Bergmännischer Beytrag zu der von der Königlichen Großbritannischen Societät der Wissenschaften, auf das Jahr 1781 ausgestellten Preißfrage: Wie waren die Bergwerke bey den Alten eigentlich beschaff en und eingerichtet? Und läßt sich nicht nach angestellter Vergleichung derselben, mit den unsrigen, zum Vortheil des Bergbaues, und Hüttenwerke in unsern Zeiten, etwas von den Alten lernen? (Freiberg, 1785).

2 Blumenbach was an influential paleontologist before Cuvier, and professor of medicine at Göttingen University after 1778. Göttingen was one of the few universities that had incorporated scientific studies into the curriculum as part of a larger interest in cameralism. Donata Brianta, “Education and Training in the Mining Industry, 1750–1860: European Models and the Italian Case,” Annals of Science 57 (2000), 275–278. See also André Wakefield, The Disordered Police State: German Cameralism as Science and Practice (Chicago: The University of Chicago Press, 2009).
sciences “in the time of [Georg] Agricola,” which, Lommer argued, were suggestive but misguided inquiries grounded on traditions and superstitions rather than on reason. Miners had attributed healing and supernatural qualities to minerals, a “childish fairy tale” that was now replaced by “system and knowledge.”

Mine surveying was “Devil’s work” before joint-founder of the Academy Friedrich Wilhelm von Oppel’s textbook on mine surveying (1749). Before proper concepts and labels were united with corresponding objects of nature, so-called mining language (Bergsprache) dominated in practice, the quaint and useful approach of the common man, which lacked the simplicity and clarity of enlightened concepts. In the absence of proper reason and experiment, the miners imagined that the stars and planets had an effect on mineralogical phenomena, that mineral veins originated in the hot molten center of the earth, and that the dowsing rod provided reliable information. The rod was the epitome of all this nonsense, Lommer stressed, a powerful dream among “so-called knowers of mining” (sogennante Bergverständige) and even misguided scholars that lasted into the eighteenth century. The miner of Lommer’s day was embarrassed by continued use of the old dowsing rod and relied rather on “natural observations and sound reason.”

Lommer’s statements indicate that original Academy professors distinguished themselves from earlier Bergverständiger, marginalized prospecting technologies such as dowsing, and identified with an international Republic of Letters and new ideal of Wissenschaft, as represented at Göttingen. Historians of earth science have echoed Lommer by stressing paradigmatic change at Freiberg. Rachel Lauden cites Freiberg professor Abraham Werner as the first to distinguish historical geology from mineralogy. David Oldroyd invokes Thomas Kuhn’s theory of paradigm change: “The Wernerian radiation gave the study of the earth its first paradigm, marking a separation from mineralogy. It was the means of escape from a pre-paradigm condition.”

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3 Lommer, Bergmännischer Beytrag, 12.
4 Lommer, Bergmännischer Beytrag, 15.
5 Lommer, Bergmännischer Beytrag, 15.
6 Lommer, Bergmännischer Beytrag, 36.
7 Lauden, From Mineralogy to Geology, 104–5.
8 Oldroyd, Thinking about the Earth, 103. See also William R. Albury and David R. Oldroyd, “From Renaissance mineral studies to historical geology, in the light of Michel Foucault’s The Order of Things,” British Journal for the History of Science 10 (1977).