1 Early Measures Against Industrial Emissions

In the late 19th century there were more scientific papers on industrial emissions damage published in German-speaking countries than elsewhere. This was due not only to the lead enjoyed by German science in several fields, in particular, plant physiology and agricultural chemistry: it was also due, more significantly, to the fact that the social and ecological problems caused by industrial emissions were, for various reasons, far worse in German-speaking Europe than elsewhere.

First of all, the process of industrialization had begun in most parts of Germany and Austria later than in western European countries. In Great Britain or Belgium, moreover, legal measures had lead to a reduction of emissions and thus of emissions damage [cf. Reuss (1907, p. 19); Ashby and Anderson (1981)]. Although these earlier measures containing the effects of industry on the environment were frequently taken note of by governments in Germany and Austria, these governments did not, because of their liberal industrial regulatory policies, adopt any of these measures themselves (Schramm 1984). This enabled the Belgian firm Vielle Montagne, for example, to transfer its production facilities located at Liege (Belgium), which had to be closed in 1856 for ecological reasons, to (Essen-)Borbeck, Germany. There this zinc-smelting plant continued to produce, despite protests, for over 100 years until 1968 [cf. Vohl 1863; Pappenheim 1865: Reg. Düsseldorf 10725 (Hauptstaatsarchiv Düsseldorf), Parisius 1984].

There is at least one more reason which led to the more intensive scientific consideration of smoke damage in German-speaking countries, i.e., the "particularism" characteristic of Germany before it was unified in 1871. Prior to the founding of the German Empire, each German state was, legally speaking, an area of autonomous jurisdiction. As a result, emissions laws developed separately in the individual states according to their particular socio-economic requirements, and were unified only in 1900 in the Civil Code (§ 906 BGB).

Saxony was in the avant-garde. Already in 1852, it was stated in the draft version of a Saxonian Civil Code that "... no one may bring onto his land devices that transmit damaging steam, fumes, smoke or soot to neighbouring property. Industrial facilities are subject to political laws".
This passage is regarded as “the oldest provision in German law dealing with emissions” being “comparable to the later § 906 BGB” (Palmer 1979, p. 55). In 1861, this principle was incorporated into the Industrial Regulations of the Kingdom of Saxony.¹

This fact suggests several things. To begin with, apparently such cases were already so common in Saxony that there was a need for such regulation. The implementation provision, with its reference to political laws, reveals moreover the problems of liberalism. As Geheimrat Held, author of the draft version, argued, in order to promote the public interest in a free and undisturbed development of industry, it is often necessary to impose severe restrictions on one’s neighbours.

Frequently it was not possible to ignore industrial emissions. In the early industrial regions of Germany, the corresponding damage appeared mostly in very small areas around the metal-smelting works. For the local residents, the smoke rising from these works was not a sign of economic growth; rather it signified the ecological destruction that was undermining their own economy.

2 The German Smelter Smoke Debate

2.1 The Freiberg Experience: Identification of Sulfur Dioxide and Technical Solutions End of Stack

In Saxony’s traditional smelting town, Freiberg, emissions damage had led to serious conflict, which already began in 1846. As the chemist Kohlschlüter (1918, p. 26) recalled: “The smelting works lay deep in the burned out basin of the valley, with not a blade of greening grass around. The rooftops were covered with the sediment from the poisonous smoke”.

Freiberg’s silver- and lead-smelting works were owned not by private capital, but by the government of Saxony, which received a request from 14 citizens and the council of one of the neighbouring villages, Halsbrücke, to take some action. The residents, as “poor mine and smelting workers”, were not able to compensate “in the long run” for the losses resulting from the emissions damage. Because the “smelter smoke” again and again destroyed their crops, they were “facing gradual impoverishment.” (Staatsarchiv Dresden/Freiburg Gg No. 32, Vol. 1 after Andersen and Brüggemeyer 1987). At first, the community’s petition was rejected. But after a short while more communities joined in, and soon Saxony’s parliament was also brought into the picture. Such widespread protest could no longer be ignored. Adolph Stöckhardt, an agricultural chemist from the nearby

¹The relevant sections of Saxony’s Industrial Regulations were then adopted by some neighbouring lands: Saxony-Coburg-Gotha, in 1862; Saxony-Weimar, in 1863. The proposal for a set of industrial regulations drafted for the “Norddeutscher Bund” (North German League) lacked, however, this kind of emissions law. It was introduced only after the intervention of Members of Parliament, cf. Mieck (1981) and Palmer (1979, p 60ff).