



Volume 4. Forging an Empire: Bismarckian Germany, 1866-1890

Broadside against the Construction of a Chemical Factory in the Ruhr Industrial Basin (c. 1874)

In the nineteenth century, Germany's chemical industry caused massive health problems for workers and those living near chemical factories. Sulfuric acid, nitric acid, and hydrochloric acid were among the worst offenders. This broadside is the first example of an organized attempt to stop the construction of a chemical factory – in this case, a factory that was to be built in the town of Horst, located in the Ruhr industrial district of western Germany. The authors of this pamphlet concede that a new factory would mean new jobs, but they also point to the need to protect local agriculture from possible pollution. In their minds, the dangers of a new factory clearly outweigh the benefits.

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Danger Ahead!

The construction of a chemical plant on the Ruhr River.

An appeal to the inhabitants of Horst and its environs.

The Rheinau chemical factory in Mannheim has now submitted an application for a license to construct a chemical plant in Horst on the Ruhr, and it is high time, in the general interest, especially the interest of the inhabitants of Horst and its environs, to point out the dangers and disadvantages that usually result from the manufacture of chemical substances.

About three weeks ago, a party who seems to be quite in favor of the plant used the *Essener Zeitung* to communicate very promising words about the proposed factory and its intention to concern itself “particularly” with the production of sodium carbonate.

According to this, the factory intends to manufacture not only sodium carbonate but other chemicals as well. Based on this same newspaper article, the proposed chemical factory is supposed to elevate the diminished prosperity of Horst and its environs. Certainly, given today's depressed economic conditions, which are causing our region's main industry to languish so severely, one would joyfully welcome the establishment of a healthy industrial sector that fostered general prosperity; however, if one thoroughly examines the facts on the basis of the materials available, it cannot be concluded that the construction of a chemical factory in a populated area that is partially dependent upon farming would be beneficial to the general well-being. Instead, on the contrary, it appears that the facility in question would be more apt to inflict considerable damage upon that community or perhaps even ruin it. [ . . . ]

That is to say, the information gathered suggests that the proposed factory will not turn out to be a source of prosperity, but rather a source of toxic chemicals that will spoil both air and water, rather than shower us with blessings. [ . . . ] Anyone who wishes to form an independent opinion about the manufacture of sodium carbonate and the resulting damages should visit the sites of Schalke and Duisburg, where a closer look, and the statements of those living in the vicinity of local chemical factories, will bring the facts clearly to light. [ . . . ]

Depending on the raw materials used and on the production method, the manufacture of chemicals generates a wide range of noxious fumes in the form of hydrogen sulfide gas, hydrogen chloride gas, hydrochloric acid fumes, etc. These emissions, influenced by temperature and wind direction, spoil the air for up to 2000 meters and more, have a harmful effect on human health, and affect vegetation or even destroy it completely. Countless expert reports and court findings have ascertained that gases emitted from chemical factories destroy plants and trees; additionally, upon closer observation of the sites, the layperson can see, beyond the shadow of a doubt, the adverse consequences of acidic fumes. If the wind blows in the corresponding direction, sometimes a short period – even a few hours – will suffice to kill green and woody plants. Above all, the fumes affect the blossoms of field crops and fruit trees within a considerable radius. Once they have been exposed to chemical fumes, they fall off prematurely. Here, it is also worth emphasizing that interested parties often have difficulty presenting evidence of longer-range damage – especially to blossoms – if it comes to damage claims or suits. For expert witnesses usually cannot be certain of the actual cause of the damages inflicted, especially since, according to the law, in determining the facts of the case, only a brief period of time can pass between the infliction of damage and their discovery; and in the course of legal proceedings, this matter cannot always be given adequate consideration.

Meadows and clover fields are damaged by the vapors in two respects: first, they are stunted in their growth, and second, whether fresh or dried, they become unsuitable as fodder for livestock. At the Seventh Meeting of German Foresters, which was held in Dresden last August, Dr. Schröder, a lecturer at the Forestry Academy in Tharant (Saxony), gave a presentation that drew attention to the fact that sulphurous acids – which, as is generally known, form during sodium carbonate production – have an adverse effect on leaf structures; he also stated that he had undertaken to establish this through countless chemical studies. The findings have shown that the acids destroy the chlorophyll substance, impairing the leaves' capacity for transpiration to such an extent that they must inevitably wither, which obviously causes the death of the woody plants [to which they are attached]. Inspection of the Rheinau chemical factory reveals that acidic fumes escaping from the factory premises and chimneys have had a devastating impact on the surrounding forests and gardens. During humid or calm weather conditions, the entire area is almost entirely enveloped within 15 to 30 minutes by these toxic fumes, which assume the form of a stinking and virtually impenetrable fog, and since the fumes weigh more

than pure atmospheric air, the mists descend to the ground, gradually killing any vegetation. The resulting damage defies description. Since the factory management has nevertheless refused to grant the injured parties any compensation – something other chemical factories in the region do willingly – the forest and property owners have been forced to attain their rights through legal proceedings, about whose outcome they had no doubts, given the significant amount of supporting evidence and the example of similar cases that lead to convictions. As mentioned, the Rheinau Company has brushed off the amicable settlement offered to it by the injured parties out of hand, proof that the neighboring property owners in this case in Horst probably cannot reckon with any accommodating concessions.

In its application for a license, the Rheinau Company says that only one building will be located within a short distance of the factory planned in Horst. Wholly apart from the fact that short and long distances are totally relative terms – as is generally known, the harmful gases possibly extend for up to 2,000 meters – there are at least 20 to 30 residential buildings within a 500-meter radius of the projected factory premises. Additionally, the workers' settlement of "Neuschottland," which consists of approximately 50 dwellings and gardens and approximately 400 residents, is located a mere 400 meters, in the prevailing direction of the wind, from the proposed industrial property. Many workers already have to breathe poor air during working hours; should one actually pollute their air even during recreation time? Responding to an inquiry on this issue, the mayor of Seckenheim – where, as mentioned before, the Rheinau factory is currently located – declared quite frankly that a factory like Rheinau did not belong in a place with fields and gardens, and that it needed to be in a heath where nothing grew. Moreover, he said, due to the current Poor Law and the Law on the Freedom of Movement, the factory would only be a drawback for the community, because the workers' occupation was very unhealthy and would lead them to sacrifice their health for the sake of relatively high wages, and that this would occur at the expense of the subsequent budget for poor relief.

On the part of the doctors, the emphasis is, among other things, on the fact that acidic vapors have very irritating and detrimental effect on the respiratory organs. According to the laws of science, any alien admixture to the air, especially the admixture of caustic substances that irritate the mucous membranes, is harmful to human health. Furthermore, the hydrogen sulfide gases developing in sodium carbonate sludge have a very worrisome and negative effect, especially when waste (the so-called sodium carbonate sludge) is piled in large heaps. [ . . . ] The chemical analyses of effluent generated from the production of sodium carbonate in several cases reveal the following contents: hydrochloric acid, iron oxide, manganese, and sulfuric acid, substances apt to affect drinking water adversely. If the aforementioned cesspits were really established and operated on the grounds purchased and earmarked for construction of the factory, terrain that contains high-lying gravel beds, then who could have any doubt, given the elevated location of this piece of property and the composition of the soil, that toxic water would nonetheless seep through the gravel and reach the surrounding wells and the nearby Ruhr

river? As a result, this effluent would spoil the drinking water for several water pipes, i.e., for thousands of people.

Very recently, on March 31<sup>st</sup> of this year, the *Kölnische Zeitung* made it known that, according to chemical analysis, almost all of the well water in Barmen is polluted, partly because of the spoiled water of the Wupper River, and probably also because of the deposition of chemical materials and waste whose harmful substances, moistened by rain, are more or less absorbed by the ground and transferred to the well water. Unfortunately, a sudden remedy of this enormous nuisance cannot easily be accomplished in Wuppertal on account of long-standing privileges, and besides, the water of the Wupper is only used for industrial purposes, for washing, etc. Here on the Ruhr, though, we still have no industry that is detrimental to our drinking water and fish farming, as it were; therefore, we hope that the administrations of the waterworks lying downstream from Horst, as well as the relevant authorities, will submit their protest against the facility in the appropriate places.

Thus, at a time when agriculture is receiving the particular attention it rightly deserves – and even has the prospect of state protection – and when the Reich Health Office is active in so many directions, one may only hope that the royal government will not grant, out of consideration for some special interests, a license in such a heavily populated area to an industry that is harmful to both vegetation and human health. In order to do everything within the power of private persons, however, the inhabitants of the threatened area must unite in a joint protest aimed at preventing the imminent danger.

Protests against the construction of the factory are to be directed by June 10 to Senior Clerk Schuhmacher in Hattingen.

Source: Hauptstaatsarchiv [Central State Archive] Düsseldorf 35949 [The pamphlet is not dated; its arrangement in the file suggests that it was written circa 1874.]

Original German text reprinted in Franz-Josef Brüggemeier and Thomas Romelspacher, *Blauer Himmel über der Ruhr. Geschichte der Umwelt im Ruhrgebiet 1840-1990* [*Blue Skies over the Ruhr. The History of the Environment in the Ruhr Valley, 1840-1990*]. Essen: Klartext, 1992, pp. 130-33.

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