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Agnes Kneitz

Polluted Water

And so we walked around the man-made slough, which covered a good twenty acres, and succeeded in reaching, beneath the wall of the great factory, the dark stream of hot, dirty-yellow liquid that first set the brook steaming and then spread together with it over the broad expanse which my near ancestors had known only as a meadow.¹

Experiences such as this—coming across a stinking stretch of water during a walk, rather than a clear little brook—were not unusual in the industrialized regions of the German Empire in the second half of the nineteenth century. But, it was unusual to read about them in *belles lettres*. Wilhelm Raabe's book *Pfister's Mill: Notes from a Summer Vacation* is one of a very few works of German literature in which the polluted state of the national waters is not only mentioned, but described to its full extent. Just to what extent this early critique of progress went against the *Zeitgeist* of the early 1880s is shown by the general repudiation of Raabe's book, first by publishers and then by readers. For these sometimes nauseating descriptions were, of course, not read gladly—and certainly not for pleasure. Even if—according to the evidence of Raabe's contemporaries—it clearly portrayed reality at the time.

Until the end of the nineteenth century—before intensive scientific testing and the slow emergence of a deeper understanding of nature and environmental protection—polluted water was perceived as a matter of course in a further developing world, an inevitable part of progress. Polluted water—which due to industrialization gradually came to characterize all water—was seen almost as a sacrificial offering: a normal development that nobody could or would correct; a price worth paying for general wealth and prosperity. When did perceptions of polluted water change, when was it no longer considered a part of everyday life? And what caused the tide to turn?

This essay was originally written in German and has been translated for the *Perspectives* by Kirsty McCluskey. Unless otherwise noted, all translations of German sources are also the translator's.

1 Wilhelm Raabe, *Pfisters Mühle: Ein Sommerferienheft* (Leipzig: Grunow, 1884), 151.

A Matter of Course

For a long time polluted waters remained only of interest to science. In the nineteenth century, a significant reorientation in the natural sciences was unfolding; the diverse subject areas were expanded and new methods and tools were developed. It was precisely in the analysis of water samples—for example, in the context of a legal dispute about polluted bodies of water—that a new dimension was discovered that would revise and improve process technology accordingly. In particular, biological research, which was still in its infancy in the second half of the century, gained an additional field of practical application in this way.

The concept of the *Opferstrecke*—“sacrificial stretch”—is an important metaphor in this discourse: This is how, from 1902 onwards, the chemist Curt Weigelt labeled the section of a river, that was of such economic significance that the interests of fishery—and along with that, the life in the water—had to be *sacrificed*.² This concept, conceived as a bridge between colliding interests, was a disastrous one, which did not reduce the willingness of Germans to pollute their environment.

This is not to say that pollution was a new concept. Polluted water had been a part of everyday human life. It was seen as normal, although—even before the heyday of industrialization—it could take extreme forms, especially in highly populated areas: in the Middle Ages, for example, the Seine within the Paris city limits was so contaminated that King Charles VI considered it almost a miracle, in 1404, that the people who used the river water did not die as a result. A similar complaint arose in Stuttgart in 1640; not only did the Nesenbach stink, but it was so congested that Duke Eberhard III forbade “anything” to be dumped into the city waters.

In these examples, however, only the direct effects on humans were considered relevant to the discussion, although environmental damage could be seen with the naked eye. For a long time, no great significance was accorded to the effect of polluted air or water on the environment. Moreover, the potential health consequences of polluted water were long underestimated. In his study of the effect of sewage and wastewater on the water quality of the Spree in Berlin in 1841, the medical doctor Albertus Magnus

2 Protokoll der 25. Hauptversammlung des Vereins zur Wahrung der Interessen der chemischen Industrie in Deutschland zu Frankfurt 1902, Mwi 6983, Hauptstaatsarchiv München, 15.

cited a mariner who, immediately after someone had emptied a chamber pot into the river, took cooking water from the same spot: “Doesn’t matter, it makes you fat!”³

In general, there was no law against pollution before the end of the nineteenth century, and where legislation existed, it dealt only with exceptional cases such as in early modern Stuttgart. For the most part, countermeasures were introduced only as a result of an extreme situation or the immediate threat of one. One example of this was the city of Braunschweig: In 1880, the area around this old ducal seat had the highest density of sugar refineries in the German Empire. Water pollution rich in organic matter resulting from their effluence could no longer be imagined away. There were indeed legal disputes, in which scientists were also consulted and which had broad repercussions, about the effects of this effluence. However, only when Braunschweig’s water supply system broke down completely in the winter of 1890/91, and the river water (on which the town depended) could no longer be used as drinking water or for washing, were wastewater treatment regulations finally introduced, and then only for certain industrial plants. Although this improved conditions somewhat, according to the results of a biochemical study, the putrid taste of the drinking water remained. The author Wilhelm Raabe wrote about this same event to his daughter on 17 January 1891: “Be glad that you are not in Braunschweig anymore. A complete pigsty! We don’t wash anymore, we don’t clean our teeth; you can taste the water of the Oker, besmirched by the twelve sugar factories. Pfister’s Mill in its most fearsome incarnation!”⁴ Once more, Raabe drove home the connection between polluted water and technological progress.

In the end, polluted water, like clean water, is a natural part of human life. In the process of being used, clean water is turned into wastewater. There is a certain powerlessness in this causal relationship—a sense of the inevitability of pollution.

Delayed Detection

The simultaneous assumption of the incessancy of clean water and the misconception of the inevitability of polluted water in an industrialized world resulted in the delayed

3 Albert Magnus, *Ueber das Flusswasser und die Cloaquen grösserer Städte: In medicinisch-polizeilicher Hinsicht* (Berlin 1841), 22.

4 Cited according to Horst Denkler, *Neues über Wilhelm Raabe: Zehn Annäherungsversuche an einen verkannten Schriftsteller* (Tübingen: Niemeyer, 1988), 101.

detection of water pollution's negative consequences. One reason why researchers only came relatively late to the problem of water pollution was the simple observation that polluted bodies of water, especially rivers, appeared to clean themselves. If a stretch of river within a settled area was polluted (even heavily, as was often the case), a substantial improvement—possibly even a complete absence of pollution—could be observed a few kilometers upstream. Even though the processes of biological transformation and chemical sedimentation, taking place alongside the dilution process, could not be seen with the naked eye, this still seemed enough of a basis to assume that the problem would solve itself. This theory was also extensively backed by the natural sciences, above all the concept of “natural self-cleansing”—first coined by Max von Pettenkofer—which legitimized an ever-increasing level of toxic emissions in flowing waters.

Progressively, under the increased scrutiny of the natural sciences, the self-cleaning model had no chance when faced with the breadth and depth of pollution. The general feeling of helplessness about water pollution slowly reached another level: despite heightened awareness, water pollution could not be hindered. On one hand, the technology was lacking; and on the other, due to insufficient legal grounds, most conflicts of interest continued to work against the “defenseless” water. Curt Weigelt had tried to navigate this impasse through his concept of the sacrificial stretch, but this had the opposite effect. The additional evidence of the chemical self-cleaning of water only led to a yet more careless attitude towards organic and inorganic effluence, until at the turn of the century a number of filtering techniques were discovered and developed.

“The main task of rivers is above all certain: to take all water which is superfluous or already used, and thus impure, away to the great reservoir of the sea,” a contemporary chemist wrote.⁵ For what was previously accorded to agriculture, should be accorded in the same measure to industry—society's new driving force. From now on, the parameters of further debate were defined by a technical understanding of a river's ecosystem, with which the (chemical) industry—as part of culture—could be seamlessly integrated. Nature and culture (technology) had already become to some degree dissociated.

5 Ferdinand Fischer, “Der Einfluss der Industrie auf das Flusswasser,” *Zeitschrift für angewandte Chemie* 13 (1899): 83.

The self-cleaning capacity of water was inferior to the extreme extent and depth of pollution; here, science intervened. However, through the scientific study of dirty water, the question was elevated to a more abstract level, which in turn led to an ever more marked dissociation of humankind and nature. In the controversy about connections between nature and culture (technology), the previously close relationship between humankind and water could be reduced to the dichotomies of “clean water and nature” versus “polluted water and culture (technology).”

Humankind has distanced itself ever further from nature. However, once a certain distance was reached, this actually led to a reversal: from this external perspective, humans became even more aware of nature. With a new worldview, and “environment” as a rallying cry, the motives for monitoring and treating dirty water have finally changed. Indeed, since the ecological near-collapse of many “traditional” industrialized nations, far-reaching emissions laws have often come into existence, which have contributed to a substantial improvement of conditions. Polluted water has been reduced to a “nature-compatible” minimum level, and the self-cleaning capacity of bodies of water can now become effective once more—even if its superiority is no longer that of two hundred years ago—as humankind now intervenes to regulate and support nature.

However, dirty water still poses a considerable problem on a global scale; particularly in those places where the people “cannot” yet be led by noble motives such as the romance of environmental protection. In many parts of the world, industrialization is only now entering its heyday; in others, this phase still (perhaps) lies ahead. The same problems with which Europe had to contend a century or two before are now becoming urgent elsewhere. What to some is merely dirty water, to others is survival. In contrast to the nineteenth century, however, these problems are now regarded from a different (external) perspective. We have the example of history to follow, and we see that polluted water can exist in different forms and on different gradual scales. From the examples that informed our technological progress we should also learn to avoid certain mistakes, both in general and within certain limits. At least, this is the theory.

Just as water is a normal and natural part of human life, so polluted water remains; it is a natural element of the world because of the interconnected relationship between humankind and water. Our helplessness also remains. Clean water is a basic requirement for survival; dirty water is an inevitable consequence of human life.

Today, critics are writers, as they were yesterday. They continue to remind us of our responsibility to find a balance between progress and environmental compatibility. We can only hope that in the future the unseemly pictures, such as those depicted by Wilhelm Raabe, will truly remain in the past:

It was an autumn-winter smell, which neither the city nor the country guests, nor the journeymen, nor the gearwheels or my poor, happy father were able to bear. Nor could the fish . . . As these said nothing, but simply floated mutely about on the surface of the river, singly or in groups, their silver-scaled bellies turned upwards, so were people here, too, dependent on their own observation.⁶

Further Reading

Denkler, Horst, ed. *Neues über Wilhelm Raabe: Zehn Annäherungsversuche an einen verkannten Schriftsteller*. Untersuchungen zur deutschen Literaturgeschichte, 46. Tübingen: Niemeyer, 1988.

Ferdinand Fischer. "Der Einfluss der Industrie auf das Flusswasser." *Zeitschrift für angewandte Chemie* 13 (1899): 80–86.

Protokoll der 25. Hauptversammlung des Vereins zur Wahrung der Interessen der chemischen Industrie in Deutschland zu Frankfurt 1902. MWi 6983. Hauptstaatsarchiv München.

Magnus, Albert. *Ueber das Flusswasser und die Cloaquen grösserer Städte in medicinisch-polizeilicher Hinsicht*. Berlin: Hirschwald, 1841.

Raabe, Wilhelm. *Pfisters Mühle: Ein Sommerferienheft*. Grenzbotensammlung. Erste Reihe, Band 22. Leipzig: Grunow, 1884.

6 Raabe, *Pfisters Mühle*, 75f.