

# ALEXANDER - VON HUMBOLDT



information



Languages

## Alexander von Humboldt and his work in Franconia

### Humboldt's stations in Franconia

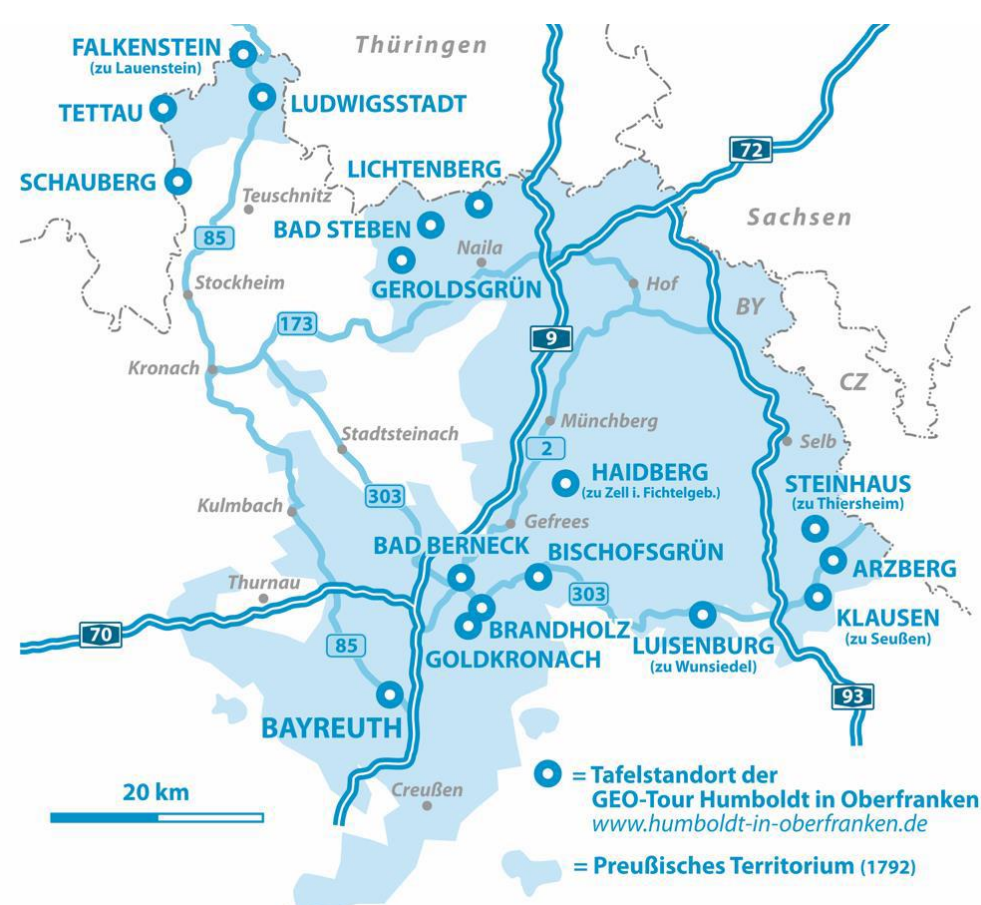


Fig.: Humboldt's stations in Upper Franconia  
(Source: Geopark Bavaria, <https://www.geopark-bayern.de/avh2/stationen/15.html>)

Upper Franconia has been an important mining region since the Middle Ages. Many raw materials were mined, especially in the Fichtelgebirge. In May 1793, Alexander began his work as head of the Franconian mining industry. Others might have given instructions from their office in Bayreuth, but Alexander was always on the go and preferred to assess the situation on site. He cared not only about the mining itself, but also about the industry that was built on it.

From July 12th to 23rd, 1792, Alexander traveled through the three mining offices of Naila, Goldkronach and Wunsiedel. During his entire time in the Fichtelgebirge, he had only one task: to get the mining industry going again. In this way he solved many problems and even founded several mountain schools, which he financed from his own pocket.

### Problems in mining and Humboldt's solutions

Between 1792 and 1797 Alexander von Humboldt worked in the Fichtel Mountains as a senior miner. During this time he had tunnels expanded, developed breathing apparatus and founded a mountain school.

#### The miner's lamp

At the age of 27, Humboldt invented a miner's lamp that gave light even at great depths. He tested it himself in a shaft in the Goldkronach mining district. He almost came into danger, but was saved by a colleague.

#### The gas mask

There was a lot of gas far down in the mines, which often killed the workers. That's why Humboldt invented a gas mask. He got a pig's intestine from the butcher and filled it with air. This meant he could breathe during the day.

#### Danger of collapse

Most of the workers were killed when tunnels collapsed. Alexander von Humboldt also wanted to solve this problem: He took several logs underground and used them to build a kind of retaining wall so that the rock around the miners could not easily come loose.

#### Water underground

It happened again and again that the underground mine was flooded. This happened whenever the miners encountered groundwater. Alexander was also able to solve this problem. He designed a huge water wheel and connected it to a kind of water pipe. By turning the water wheel, the water was transported out of the tunnels (like today by a pump) and work could continue.



Fig.: Miners at  
Shift change

(Source: Helmut Schaar, Federal Archives  
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