

Robert William Schmieder

Edward Cordell and the Discovery of Cordell Bank



Springer

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U. S. Surveying Schooner "Marcy"
San Francisco July 1st 1869

Sir

I have the honor to report that in accordance with your instructions of January 16th directing "a special examination in regard to a Bank, reported to exist to the West of P. Reyes" I proceeded to sea on the 15th ult. in search of the Shoal.

On the 17th after a successful previous search I was fortunate enough to get soundings upon it, find it and commenced the work of developing the exact position the depth of water, and its extent.

In conclusion I beg to suggest, that a name may be assigned by you to the Bank, identifying it with the U. S. Coast Survey

I am

Very respectfully
Your Obedt. Servant

Prof. Benjamin Peirce
Superintendent U. S. Coast Survey
Washington D. C.

Edw. Cordell
Capt. U. S.

Robert William Schmieder

Edward Cordell and the Discovery of Cordell Bank

 Springer

Robert William Schmieder
Cordell Expeditions
Walnut Creek, CA, USA

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*To the cherished memory of the explorers
who inspired me in childhood and became
friends in my adult years:*

Jean Pierre Hallet

Thor Heyerdahl

Edmund Hillary

*and the teachers who guided me into the
sciences and became role models for my own
work:*

Palmer Dysart (Electronics)

Tom Thorpe (Physics)

Mabel Barnes (Mathematics)

John Rodes (History)

Robert Sharp (Geology)

Edward O. Wilson (Biology)

Preface

This book is the fraternal sibling of the Cordell Bank National Marine Sanctuary (CBNMS), a rocky seamount off the Northern California Coast. The book and the sanctuary had simultaneous birth: a 1977 article in the *Oakland Tribune* about the dumping of radioactive materials on the continental shelf near San Francisco, about 25 miles from a rocky seamount called Cordell Bank. The article triggered my personal discovery of the Bank and of its namesake Edward Cordell, and both became personal obsessions. Both projects took more than a decade but were finally successful. Almost certainly, you will never see Cordell Bank in person, and since Edward Cordell died in 1870, you will never meet him. This book might help.

In order to find out about Cordell Bank, I assembled a large team of divers. The project extended over most of 10 years. With support from numerous organizations, the CBNMS was designated by an Act of Congress in 1989. It is documented in my other book *Ecology of an Underwater Island* and the sanctuary websites.

This book documents the man who discovered the Bank and how it happened. Cordell immigrated from Germany to the USA and went to work for the US Coast Survey. In the middle of an illustrious career as a marine hydrographer, he died of an accidental fall in San Francisco, 2 months before his 42nd birthday. Because he came from Europe and because he worked for the U.S. Government, the records of his life are preserved in the U.S. National Archives, the Bancroft Library at the University of California (Berkeley), and the Stadtarchiv in Karlsruhe, Germany. Almost all of this book is original source material. Herein is essentially everything that exists about Edward Cordell in the world.

The research originally made little use of the Internet. It mostly involved multiple trips to various archives and libraries and endless paper copies of documents. The original version of the book was completed on a Macintosh around 1990, but then it “incubated” for 25 years or so. When Springer agreed to publish it, I thought the manuscript needed only minor updating and touch-up. To my surprise, conversion from the draft to the final manuscript took most of a year and included significant new information that was not previously available. With so many new Internet tools (search engines, genealogical websites, blogs, etc.), every revision became not just proofing but also updating. Although the material is extensively source-referenced,

a few sources accumulated over the past 25 years have been lost, and for that, I express my regrets and apologies. On the whole, however, the book retains its look and feel from the earliest days of drafting.

One literary tragedy remains: even with decades of searching, I was unable to find a single photograph of Edward Cordell himself. Apparently there are none in the official records. My hope has always been that some individual in some peripheral branch of the family might have inherited a box of old photographs, one of whom is Edward Cordell. If you are such a person, trust me, a phone call day or night will bring whoops of joy and unlimited appreciation. Would you please check your attic now and see whether you have that precious box?

Walnut Creek, CA, USA

Robert William Schmieder

Acknowledgments

I am pleased to express my sincere appreciation to numerous persons who have made significant contributions to this book, including Martha Franks, who composed the original manuscript on the very first Macintosh; Randy Schmieder, who created many of the graphics and did multiple edits from the first manuscript to the last; Pamela Tumm, Konrad Odenwald, Konrad Hoferer, Gerhard Baumann, Albert Frank, Wilfried Becker, and Manuella Englemann (all in Germany), who helped search records and translate documents; Charles Burroughs, who did an extraordinarily detailed edit of the whole original manuscript; Cassandra Springer and Robyn Bernard, who did considerable word processing and editing; Robert J. Cordell, Donna Marie (Cordell) Feigle, Michele Ann (Wilt) Cordell, and Skeet Biber, who provided genealogical information and photographs of the Biber and Cordell families; and the author's wife, Kay Schmieder, who generously supported the endeavor and proofread the completed manuscript.

I am also grateful to the staff of the Bancroft Library, US National Archives, the National Oceanic and Atmospheric Administration, the California Historical Society, and other organizations.

And although it may seem gratuitous, I am grateful to the thousands of people who set up and maintain the Internet as a free and open source of material that otherwise would have been missed, perhaps lost.

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About the Author

Robert William Schmieder is an American scientist and explorer. He has had a dual scientific career, broadly divided between physics and related physical sciences, and natural science/exploration. In most of his projects, he created and led large teams of both professional scientists and volunteers. His work is documented in about 100 technical publications and 10 books. Among his most significant work in physical science was the invention of laser spark spectroscopy (now commercialized), the first application of radiotracers in combustion, and the formulation of nanologic (the use of nanoscale devices in computers). In environmental science, he originated the concept of underwater islands, led teams that established more than 1000 new records (new species, range and depth extensions, etc.), and was instrumental in the establishment of the Cordell Bank National Marine Sanctuary.

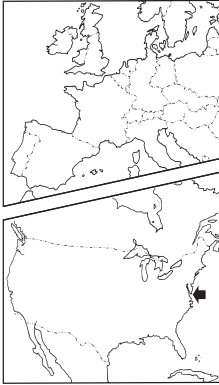
Part I

The Early Years 1828–52

Born in Germany in 1828, fleeing the revolution in 1849, Edward Cordell immigrated to the United States and became an American. With his technical education, he found employment at the U.S. Coast Survey, working first as a draftsman, then as a member of a survey party.

Chapter 1

Origins 1828–48



This is the story of Edward Cordell, who is immortalized by a place in the Pacific Ocean called “Cordell Bank.” This story is about the man, and how his name came to be associated with the place, and why it’s important in the History of the United States of America.

The story begins in a small village near the Black Forest in Southern Germany. In the outskirts of the ancient Roman city of Trier there was a small settlement that is now called Kordel. In 1727, in or near the district of Kordel, was born a boy named Anton. Originally, one name was enough, but as the population grew, people started adding a second name. One way to do this was to use the place where you lived. The German word *Kord* means cordage or twine. “Kordel” therefore means ropemaking or cordmaking. It seems obvious: Anton Kordel made, and probably sold, rope or cordage. Unlike most of the local inhabitants, who were farmers, Anton Kordel was a rope merchant.

For reasons we don’t know, Anton Kordel moved about 90 miles to the east, to another tiny town, dating from the reign of Charlemagne. Originally founded as “Huitenheim” in AD 784 on the banks of the Rhine River, the town later was moved a few kilometers away, and from AD 1191 was known as “Udenheim.” In 1623, Philipp Christoph von Sotem, the Bishop of Speyer, himself named after the Apostle Philipp, renamed the town “Philippsburg.” Whatever its name, the environs of Philippsburg have been central to military events for centuries. For some reason, everyone with sword or a spear seemed to want to assemble there and fight. This was the setting into which one Eduard Kordel was born, in 1828.

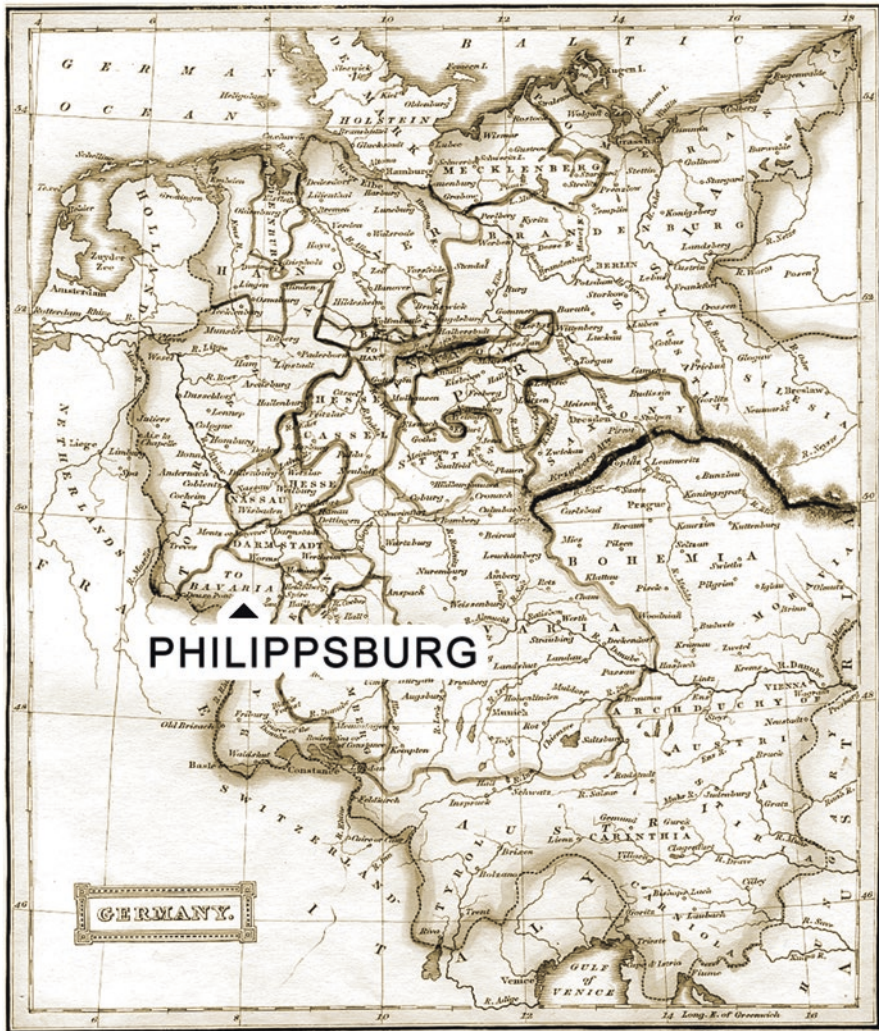


Fig. 1.1 Edward Cordell was born as Eduard Kordel into mid-nineteenth Century Germany, in the city of Philippsburg, Germany

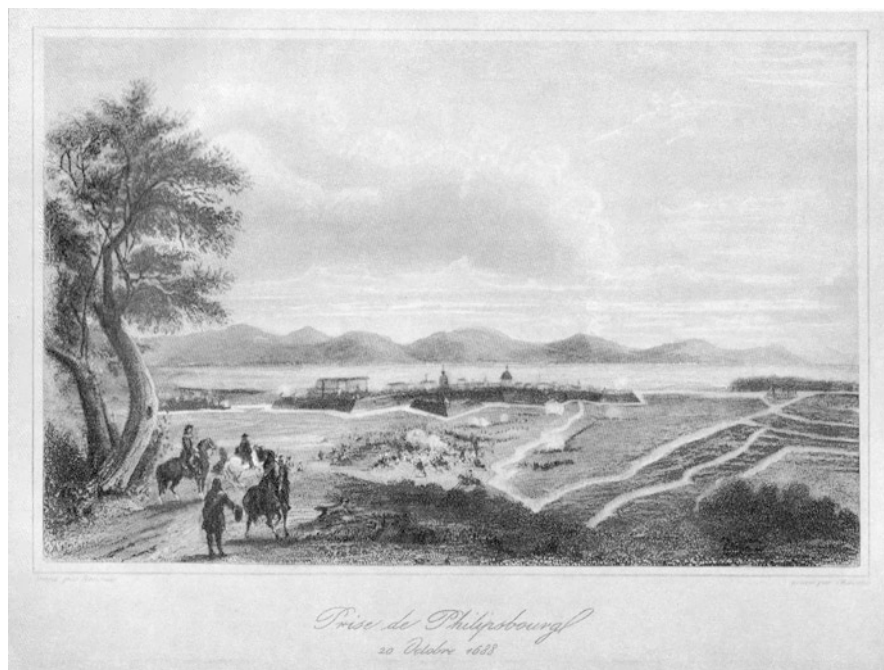


Fig. 1.2 Philippsburg was founded beside a bank of the Rhine River

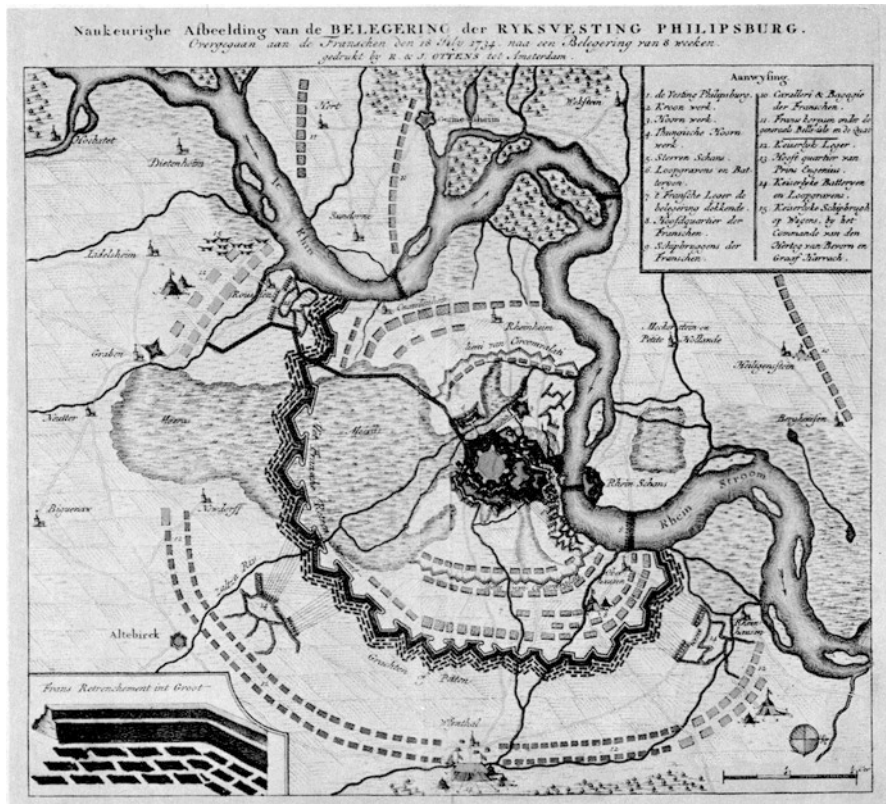


Fig. 1.3 Philippsburg originally was situated near a large meander in the Rhine River, about 300 m wide. Eventually this and nearby meanders were cut off and filled, leaving a 40–50 m wide waterway. The Rhine River is now 3 km from Philippsburg. This plan view is rotated—north is to the right



Fig. 1.5 Location of the Engelmühle to the southwest of the town of Philippsburg. The mill is still there, essentially unchanged over several hundred years



Fig. 1.6 Edward Cordell grew up in the Engelmühle (“Angel’s Mill”). The mill was separated from the town, which has since expanded to include it

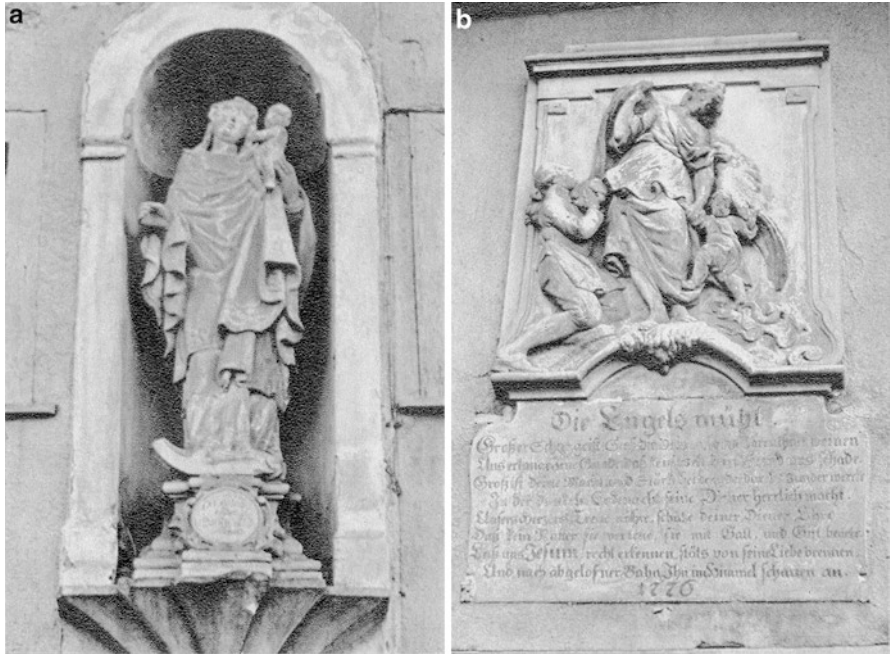


Fig. 1.7 (a, b) These sculptures on the face of the Engelmühle were there in Cordell's time

Fig. 1.8 Cordell's grandfather Anton Kordel erected a stone marker on the corner of his property, a modern reconstruction of which stands there now



The Kordel family lived at the mill for more than a century. Anton Kordel and his wife Maria had only two children, Nikolaus and Maria Elizabeth, much less than normal for families of the time. Maria Elizabeth married, but apparently had no children. In contrast, Nikolaus had some 15 children with two wives, of which the ninth child was Ludwig Peter Jacob Kordel, born in 1800.

What Ludwig Kordel did for a living is not entirely clear. When he was married in 1825, he was a postman. Three years later, he was a *Zugmeister*. Ordinarily, *Zugmeister* would mean “train master,” and it is possible he was, since the first steam train in Germany was built between Nuremberg and Fürth in 1835. However, the word *Zugmeister* could also mean:

1. One who organizes groups such as military units;
2. One who works in a handgun factory making sure the barrels are true;
3. A chimney engineer whose responsibility it is to ensure correct draft;
4. A maker or seller of draft beer.

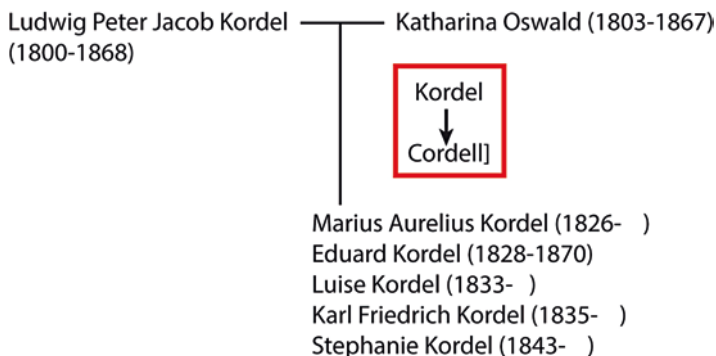


Fig. 1.9 Eduard Kordel had four siblings, two brothers and two sisters. He and his sister Stephanie changed their surname to Cordell. Later Stephanie changed from her married name back to Cordell

There appears to be no way of telling which of these was his father’s occupation, although the last of this list (beermaker) was the option preferred by the archivist in Karlsruhe where the *Standesbuch* of Philippsburg is kept.

However, for the purposes of this story, Ludwig’s importance went far beyond his profession: His second child, Eduard Kordel, the hero of this story, was born at the Engelsmühle. The event was recorded in the *Standesbuch* of Philippsburg:

On 13 April 1828, in Philippsburg, a son was born at 12 midnight to Ludwig Kordel, Bürger and Zugmeister, and Katharina (née Oswald), properly married. Witnessed by: Nicholas Milch and Johann Schatt. The godfather was Nicholas Milch, also from Philippsburg. The child was baptized at 3:00 the next day, and given the name Eduard.

Eduard was the second of five children. His older brother (b. 1826) was given a traditional Latin name, Marius Aurelius Kordel, as was the custom after the Reformation. The other siblings were Luise (b. 1833), Karl Friedrich (b. 1835), and Stephanie (b. 1843). Stephanie was destined to come to America with Eduard.

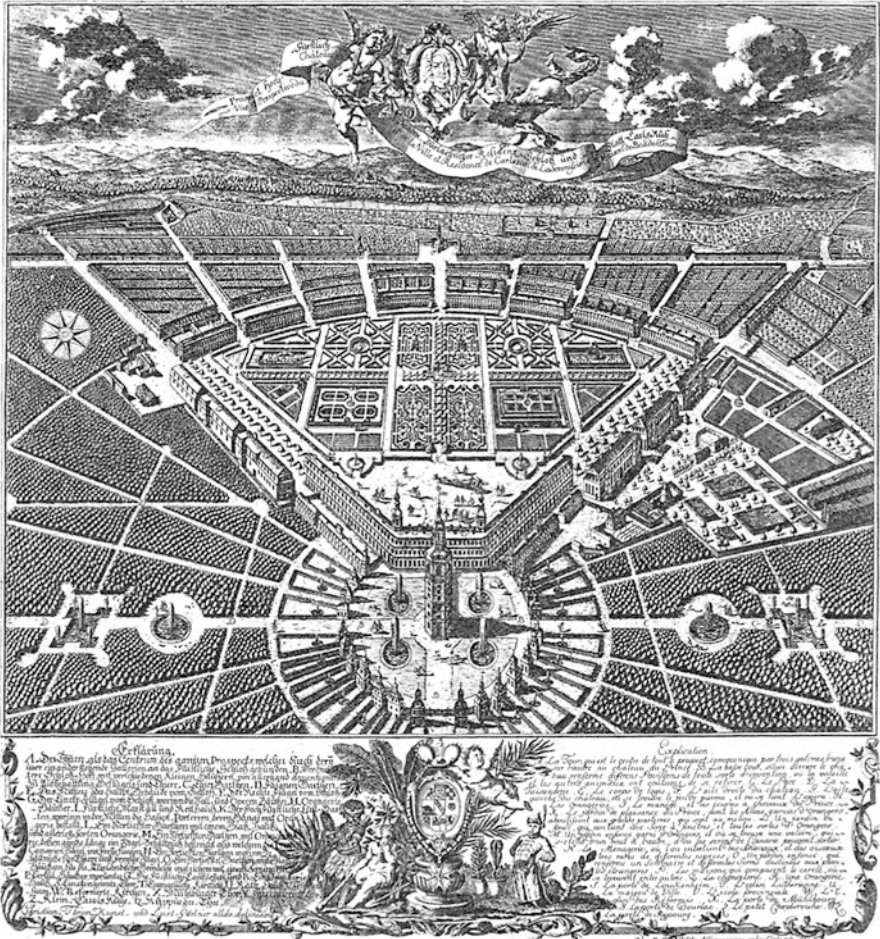
Essentially nothing is known about Eduard Kordel’s early childhood, although it is probable that he simply went to elementary school in Philippsburg, and did what most German youths did: studied history and religion, played football (soccer), and stole apples from the neighbors’ orchards.

Sometime during his early years, Eduard Kordel changed his last name to Cordel. This is an intriguing action, since almost no word in German begins with “C” and practically every one that does is actually French. An obsolete dictionary in Karlsruhe (the closest major city) defines a *Cordel* as a *cuerda*, which originated from a Greek word *khorde*, meaning “string of gut.” It was also an old Spanish unit of distance equal to 33 *palmos*, or about 6896 m, although in various regions it was

somewhat greater, equal to 25 *pies* (the Spanish foot). Eduard Cordel probably knew nothing of Spanish mensuration; he probably was just being contrary, already displaying a rebellious spirit that would get him in deep trouble in just a few years.

In 1843, when Eduard was 15 years old, he enrolled in the General Mathematics School of the Fredriciana Technische Hochschule in Karlsruhe, one of the most prestigious engineering schools in Europe. He rented a room in a large building at 26 Zahringerstrasse, about half a mile from the school [1.3]. He had classes in Religion, Analysis, Trigonometry, Analytical Geometry, Graphical Geometry, Physics, Botany, German, French, Freehand Drawing, and Calligraphy. In 1844, he re-enrolled for the second year, taking many of the same classes. We don't know whether the second year was extensions, or repeats.

Eduard Cordel's school report cards tell about his attendance, conduct, industry, progress, and performance on the examination for each of his classes. Did he attend classes? Yes, apparently regularly. Was he well behaved? Yes, reportedly. Was he industrious? Not particularly. Did he make progress? Not much. Did he do well on the exams? Fair, sometimes well, sometimes poorly. In modern US terms, his grades would have been mostly C's, with a few B's and a few D's.



Karlsruhe

Fig. 1.10 Karlsruhe was a center of scientific and technical activities, centering around the University



Fig. 1.11 The house in which Cordell lived stands today much as it did in 1844–45, when he was a student

b

Noten
 sehr gut
 gut
 ziemlich gut
 mäßig
 schlecht

Studien Jahr 1844-1845
 Großherzoglich-Badische
Polytechnische Schule
 Jahres Bericht
 über
 Eduard Cordel aus Philippsburg
 Schüler der II. allgem. mathem. Klasse

Unterrichtsgegenstände	Stunden besucht	Fleiß	Fortschritt	Vorragen.	Ergebnis der Prüfung	Name des Lehrers
Religion	sehr besucht	mittel	—	gut	2 R nicht aufpassen	Schulze
Arithmetik (1. Teil)	sehr besucht	ganz gut	mittel	gt	abwsp	Langenberger
Zweigesamtheit						
Arithmetik (Grundrechenarten)						
Arithmetik (Grundrechenarten)	unregelmäßig	ganz gut	ganz gut	gut	abwsp	Steffen, W.
Physik	unregelmäßig	mittel	mittel	—	abwsp	Leber
Chemie	unregelmäßig	kaum	kaum	gut	abwsp	A. Bauer
Arithmetik (2. Teil)	ganz gut	gut	gut	gut	—	Schulze
Geometrie (1. Teil)	unregelmäßig	mittel	mittel	gut	abwsp	Varnier
Geometrie (2. Teil)	unregelmäßig	mittel	mittel	gt	—	Münch
Calligraphie	ganz gut	gt	mittel	gt	—	St. Gerburg

Carlsruhe, den 25. Juli 1845

Der Vorstand.
 Kayser

1845

Fig. 1.12 (continued)

At some point during his second year at the University, Eduard appears to have lost interest in academics: his attendance flagged, his efforts dwindled, and he made little or no progress. Eventually he simply did not show up. At the end of the 1844–45 school year, he is listed as absent from every final exam. Eduard Cordel, destined to be immortalized by virtue of his technical ability and hard work, was a poor student and a high school dropout! He returned to Philippsburg to join the revolution.

Eduard Cordel and his brother Aurelius became soldiers in the revolutionary army. On January 7, 1849, Eduard was appointed secretary to the civil commissioner Friedrich Schanzlin. Aurelius was an outstanding soldier. In May 1849, he took an infantry platoon to Offenburg, carrying a black, red, and gold flag. After fierce fighting, Aurelius gave a fiery speech, in which he declared, “Wir wollen endlich die Grundrechte und die Frankfurter Verfassung!” [We demand our rights and the Frankfurt constitution!]. His oration was so impressive that he was made a member of the committee of the provisional revolutionary government [1.4].

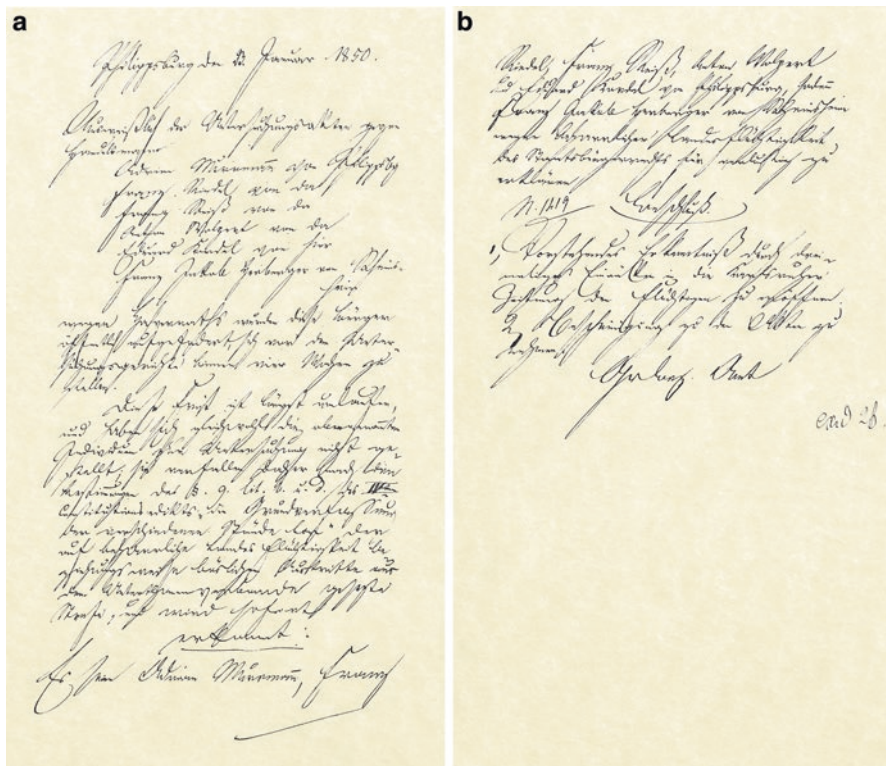


Fig. 1.13 (a, b) Part of the original charges against Edward Cordell included treason

Nonetheless, by June 1849, the Cordel brothers were in very serious trouble. The revolutionary army was defeated, and nearly everyone involved was arrested. Schanzlin was tied to a horse and dragged to his death. Aurelius was tried and sentenced to 15 years in prison (although eventually he apparently was released or escaped). Eduard Cordel, along with Adrian Murrmann, Franz Riedel, Franz Reiss, Anton Wolpert (all from Philippsburg), and Jacob Herberger (from Reinsheim, a district of Philippsburg), were indicted for high treason. The six, including Eduard Cordel, were deemed traitors! They were ordered to appear in court within 4 weeks to answer to the charges. When they did not appear, the court declared them *persona non grata* and suspended all their civil rights, effectively revoking their citizenship. Eduard and Aurelius Cordel, the other five Philippsburgers, and undoubtedly thousands of others like them, simply vanished legally.

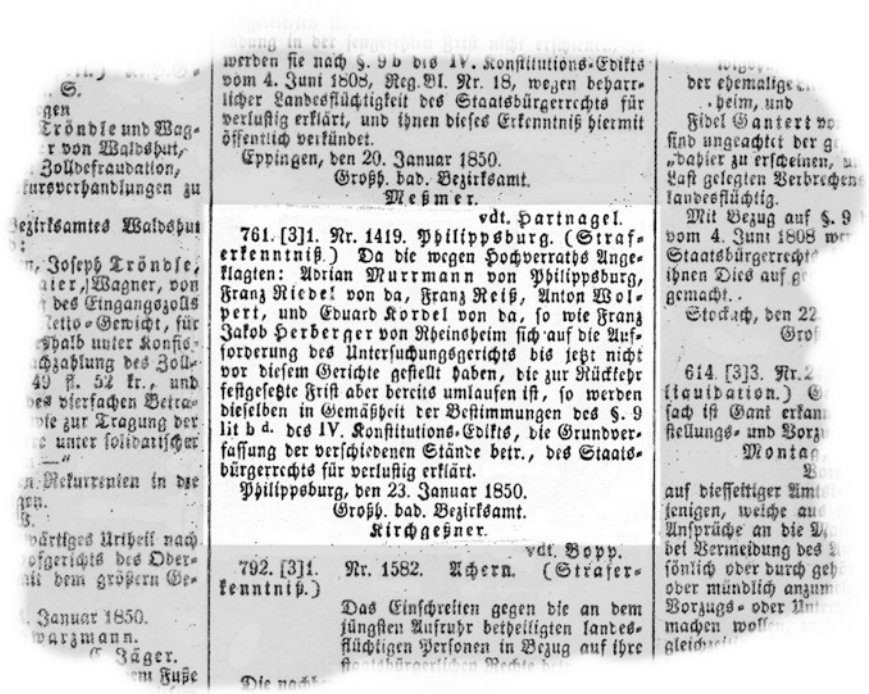


Fig. 1.14 The official notice of the charge of treason against Cordell