

HISTORY OF EMERALD MINING IN THE HABACHTAL DEPOSIT OF AUSTRIA, PART II

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Published information about the history of the Habachtal emerald mine in the era between World War I and World War II is limited and superficial. Subsequent to the departure of Emerald Mines Limited, the English company that had owned the property since 1896, the Habachtal mine was owned or controlled by Austrian, Swiss, Italian, or German companies or citizens. The names of various companies and individuals who were actively mining for some time in the Habach Valley are mentioned in numerous papers, books, or newspapers. The relationships between them and the property owners mentioned in files of the Mittersill land registry office are frequently unknown and the reasons for numerous transitions of ownership, followed by changes of the mining entities that operated the deposit, are not clearly seen. Using a wide selection of materials from Austrian and German archives, largely unpublished, the author seeks to trace the history of the Habachtal mine through this period and to fill the gaps left by existing publications. Activities and events after 1945 and the present situation are also briefly described.

In the first part of this article, it has been shown that no regular mining occurred in the Habach Valley up until the end of the eighteenth century. After the secondary deposit in Habachtal was described in 1797, emeralds were collected in the valley, and regular mining commenced in the early 1860s after the discovery of the primary deposit. For several decades, from about 1865 to 1895, only minor activities took place in the primary and secondary parts of the deposit. In contrast, major activities with up to 30 miners are seen under English guidance and ownership by Emerald Mines Limited, from 1896 to 1913. Thereafter, the ownership reverted to three Austrian citizens: Alois Kaserer, Johann Blaikner, and Peter Meilinger, all landowners and farmers in the area. However, the outbreak of World War I prevented them from starting any regular mining on a larger scale and prompted them to sell the property. This is the starting point for part two of the Habachtal investigation.

The first half of the twentieth century brought numerous transitions in ownership and various mining activities (see figure 1) that also have, until now, not been described in detail with regard to the un-

published original documents preserved mainly in Austrian and German archives. In part two, the focus is laid upon this era. It will illustrate the problems that occurred in emerald mining, the individuals involved, and their success or failure in emerald recovery in Austria.

MINING HISTORY OF THE HABACHTAL EMERALDS (1916–1939)

Property Under Anton Hager and Peter Staudt (1916–1927). In October 1916, landowners Kaserer, Blaikner, and Meilinger resold the property for 15,000 Kronen (approximately US\$1,900 at the time) to Anton Hager (figure 2), an Austrian citizen then residing in Traunstein, Germany.¹ Prior to that transaction, Hager had already applied for several exploration permits in the area.² Circa 1917, an

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¹Notarized contract between Alois Kaserer/Johann Blaikner/Peter Meilinger and Anton Hager, October 26, 1916, Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry January 5, 1917, Mittersill land registry office. Anton Hager (1872–1940) was a timber merchant involved in his stepfather's company at Traunstein, originally hailing from the area of Zell am See in the Pinzgau and then living in Traunstein from 1900 to 1926. He moved in 1926 to the community of Gnigl (which in 1935 became part of Salzburg). Franz Haselbeck, Traunstein City Archive, pers. comm., 2020; Brigitte Leitermann, granddaughter of Peter Staudt, pers. comm., 2020.

²File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State.



Figure 1. The Madonna emerald, on permanent display at Bramberg Museum, is an exceptional specimen found at the Habachtal deposit in 1970. It measures approximately 30 cm tall. Photo by K. Schmetzer; courtesy of Alois Steiner.



Figure 2. In October 1916, the Habachtal mine was purchased by timber merchant Anton Hager, an Austrian citizen residing in Traunstein, Germany. Photo circa 1925; courtesy of B. Leitemann.

anonymous memorandum was written, likely by Hager, describing the history of the Habachtal emerald mine and its current condition.³ Certain comments hinted at a possible intent for future emerald mining, and it was noted that the adit to the D gallery was still blocked by rocks and needed to be reopened.

In July 1918, Hager began efforts to restore the property with five laborers, and that work continued in the following years.⁴ Additional exploration permits were sought by Hager in 1918, and he also applied that same year for permits for talc production near the emerald deposit.⁵ During that era, talc was mined for various applications such as cosmetics, pharmaceutical products, glass, specialized papers, leather, textiles, and soap.⁶ Mining engineer Heinrich Stuchlik (figure 3) of Traunstein provided Hager with estimates for a supply of 200 wagons per year with a reserve for 100 years, even speculating as to whether the talc occurrence might extend over the mountain ridge to allow economic mining for talc in the adjacent Hollersbach Valley as well.⁷

Beginning in August 1918, Hager searched for a chemist and/or a partner to invest alongside him in the Habachtal venture.⁸ A figure of 800,000 Kronen was proposed as the amount necessary for mining and transport of the rough talc downhill.⁹ Finding no takers, in September 1920 Hager sold a one-half interest in the property to his half-brother Peter Staudt (figure 4) from Traunstein for 31,000 Kronen¹⁰ (approximately US\$100 at the time). An entity under the name Talk- und Edelsteinbergwerk Habachthal (Talc and Gemstone Mine Habachthal) was founded in 1920 for purposes of the venture.¹¹ Hager and Staudt resumed emerald mining that same year¹² and continued to consider activities in the area not related to gemstones, such as the extraction of talc and even asbestos from the schistose rocks.¹³

Investigation of mining prospects proceeded in 1920 and 1921. Inspection reports of the area were pre-

³Anonymous, *Das Smaragd-Bergwerk im Habachthale*, Archive of the Municipality of Bramberg, circa 1917, 6 pp. The exposé was prepared on stationery from the desk of "Carl Staudt, Holzhandlung, Traunstein" and likely written by Hager.

⁴File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang.

⁵File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State.

⁶Wenzel, 1921.

⁷Letters from Heinrich Stuchlik to Anton Hager (dated December 5, 1918, August 7, 1919, and August 12, 1921), Archive of the Municipality of Bramberg. Stuchlik was born in the Austrian part of Silesia near Troppau, now in the Czech Republic, and studied at the Imperial and Royal School of Mining in Leoben. Early in life, Stuchlik focused on coal, publishing in 1887 about the deposit in his home village of Schönstein. In the late 1880s, he moved to Bavaria and worked at the coal deposit in the Peissenberg area, serving from 1897 to 1905 as head of the mining administration. From 1905 to 1912, he was the administrator for the saltworks of Traunstein. During World War I, Stuchlik was involved in mining in Romania. See Haselbeck, 2019.

⁸*Salzburger Volksblatt*, Vol. 48, No. 179, August 7, 1918, p. 5.

⁹Letter from unknown sender (signature illegible) to Anton Hager, August 19, 1919, Archive of the Municipality of Bramberg.

¹⁰Notarized contract between Anton Hager and Peter Staudt, September 27, 1920, Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry December 4, 1920, Mittersill land registry office. Peter Staudt (1883–1948) was a timber merchant in Traunstein, leading a large company with up to 20 workers that had been founded by his father Carl Staudt in 1897 and remained in existence until 1928. Franz Haselbeck, Traunstein City Archive, pers. comm., 2020; Brigitte Leitemann, granddaughter of Peter Staudt, pers. comm., 2020.

¹¹File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang; Compass, *Industrielles Jahrbuch – Österreich*, Vol. 61, 1928, p. 388.

¹²File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State; *Salzburger Volksblatt*, Vol. 58, No. 240, October 18, 1928, p. 7; Grundmann, 1979; Lausecker, 1986; Lewandowski, 1997; Düllmann, 2009.

¹³*Salzburger Volksblatt*, Vol. 54, No. 174, July 31, 1924, p. 7.



Figure 3. In the late 1910s and early 1920s, mining engineer and administrator Heinrich Stuchlik evaluated the Habachtal property for Hager, focusing in particular on the use of the deposit for industrial recovery of talc. He also prepared a subsequent report in 1928 during the mine's ownership by the Swiss firm *Aktiengesellschaft für modernen Bergbau*. Photo circa 1910; courtesy of the Historical Archive of the City of Traunstein.

pared by engineer Ludwig Autzinger of the firm Abihag in Linz and Graz¹⁴ (who also published his results in 1922) and by mine foreman Johann Hanisch (figure 5),¹⁵ and chemical analyses of talc were commissioned from laboratories in Salzburg, Vienna, and Munich. Besides noting that the mine was well maintained and all entries to the four galleries were accessible, Autzinger focused on potential production.¹⁶ For talc, he calculated 400 railway wagons (with 10,000 kg per wagon) per year by open-pit mining, with reserves for 200 years. For emerald, Autzinger used a wildly optimistic yield reported to him for the period of the English ownership of 5 kg (25,000 carats) of clean emeralds per week and projected similar totals. (Note that this figure was never reached even during one complete season, and such a weekly yield would have made selling the mine financially irrational.) Hanisch's report



Figure 4. Following an unsuccessful search for a partner to invest in the Habachtal venture, Hager sold a one-half interest in the property to his half-brother Peter Staudt (pictured), also a timber merchant from Traunstein. Photo circa 1925; courtesy of B. Leitemann.

centered on the mine's condition and recent efforts to prepare it for operation, advising that the previously decrepit galleries had been renovated in 1920 and that safety measures had been undertaken.¹⁷ Also in 1920, H. Obpacher of the Mineralogical-Geological Laboratory at the Munich Technical University examined

¹⁴Ludwig Autzinger (1890–1964) studied civil engineering at the Technical University of Vienna from 1908 to 1915 and served as an assistant at the school in 1917. He subsequently worked in various industrial capacities, including director of a fertilizer factory. In 1939 he emigrated to the United States.

¹⁵Johann Hanisch (b. 1885) was a foreman at the Mitterberg copper mine (owned by Mitterberger Kupfer-Aktiengesellschaft) near Mühlbach at the Höchkönig from 1916 to 1924. The deposit had been known since the Bronze Age.

¹⁶Autzinger L., *Über das Talk- und Smaragdbergwerk in Habach, Post Bramberg im Pinzgau*, July 1920, 4 pp. + map, Archive of the Municipality of Bramberg; see also Autzinger, 1922.

¹⁷Hanisch J., *Bericht über den Smaragdbergbau oberhalb der Söllalpe im Habachtal*, January 20, 1921, 2 pp., Archive of the Municipality of Bramberg.



Figure 5. In 1920 Johann Hanisch, foreman at the Mitterberg copper mine near Mühlbach, prepared one of the reports commissioned by Hager and Staudt in view of resuming mining operations after World War I. Photo circa 1920; archive of W. Günther at Mining and Gothic Museum Leogang.

the talc-bearing rocks. Petrographic thin sections were prepared to determine the mineral assemblage, and methods for processing and cleaning the talc and asbestos were evaluated.¹⁸

Based on the production figures provided by Autzinger, a detailed business plan was developed by K.E. Moldenhauer from the Institute for Chemical Technology at the Munich Technical University and presented to Hager and Staudt in December 1920.¹⁹ The cost for open-pit mining of talc, underground mining of emeralds, and transportation of the ore

downhill was estimated, as was the outlay for recommended supporting facilities. An electric power plant was to be built, along with facilities for separating emeralds from host rock, grinding and sieving talc ore, magnetic separation of iron-bearing components, and drying, weighing, packing, and transporting the refined talc powder to the railway station. The emerald and talc business lines were said to require a combined investment in the range of 8,500,000 German marks (approximately US\$150,000 at the time). Nonetheless, the enterprise was expected to be profitable based on the unrealistic estimated 5 kg per week yield and value of 250,000 marks per kilogram of emerald rough, amounting to weekly revenue of

In Brief

- The Habachtal property was purchased in 1916 by the Austrian Anton Hager, who mined it with his German half-brother Peter Staudt until 1927.
- In 1927, the mine was sold to the Swiss company Aktiengesellschaft für modernen Bergbau.
- Beginning in 1932, control of the Habachtal mine became a subject of ongoing legal controversies between different parties. Against that backdrop, the mine was leased to an Italian citizen. Ownership was then transferred in 1933 to three German and Swiss individuals: Max Gaab, Meta Geist, and Florian Prader.
- After the conflicts were resolved, the Swiss firm Smaragd Aktiengesellschaft, formed in 1934, took over mining activities from 1935 to 1939.
- German lawyer Max Gaab acquired another part of the mine in 1941, and ownership has remained with Gaab's descendants since his death in 1953.

1,250,000 marks (approximately US\$22,000) from the emerald line alone.

In 1921, Hager and Staudt applied for and received the requisite working permits for the mine, and an application for permission to install the plant and transport facilities for the talc production was filed by Hager the same year. Operations on site in 1921 were supervised by Austrian mining engineer Josef Gerscha (1864–1941, figure 6), who was forced to deal with the lack of proper maintenance of the galleries for more than a decade following the activities of the English proprietors.²⁰

While talc production seems never to have advanced beyond preliminary or experimental stages, and the intended facilities were never constructed,

¹⁸Obpacher H., Begutachtung von Gesteins- und Mineralproben (vorgelegt von Dipl. Ing. Moldenhauer) aus dem Talk-Asbest- und Smaragdorkommen im Habachtal am Grossvenediger, December 18, 1920, 9 pp., Archive of the Municipality of Bramberg.

¹⁹Moldenhauer K.E., Das Talkum-, Asbest- und Smaragd-Vorkommen im Habachtal (Oberpinzgau) und seine Verwertung, December 1920, 36 pp, Archive of the Municipality of Bramberg.

²⁰File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State; Schiffner, 1940; File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang.

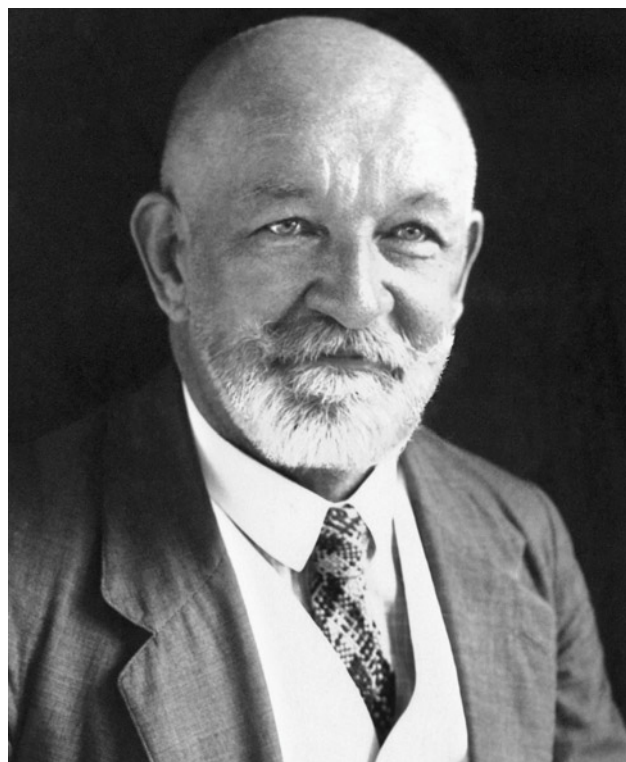


Figure 6. Efforts in 1921 to return the Habachtal mine to production were overseen by Austrian mining engineer Josef Gerscha, who had to contend with the fact that the tunnels had not been maintained for several years. Undated photo; archive of the TU Bergakademie Freiberg, Germany.

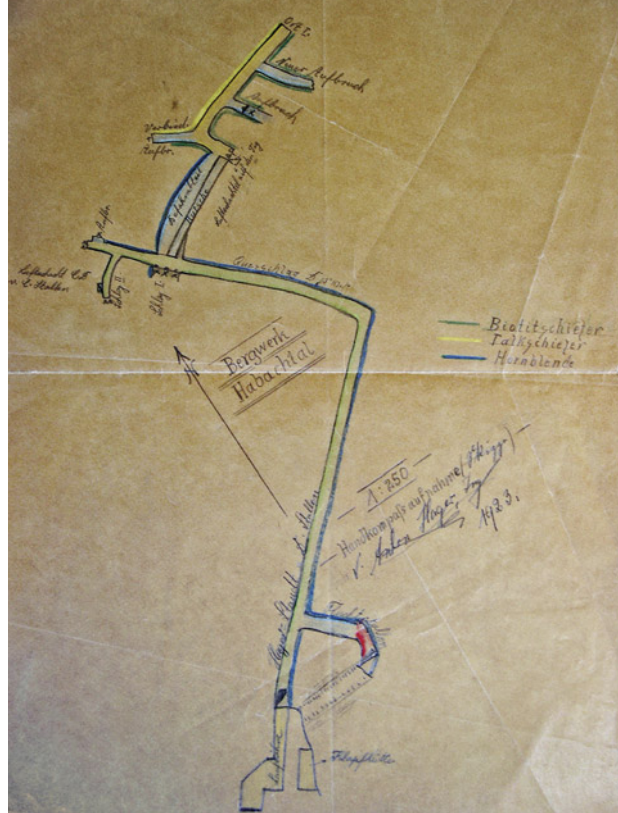


Figure 7. Top: This map of the D gallery drawn by Anton Hager Jr. in 1923 shows that the far reaches of tunnel system intersected the targeted emerald-bearing talc- and biotite-schists (light blue and yellow). Courtesy of E. Burgsteiner. Bottom: Engineer Anton Hager Jr. was the son of the mine owner. Photo circa 1927 in front of the adit to the mine; courtesy of B. Leitemann.

emerald mining was undertaken on a larger scale.²¹ An unknown number of workers was employed in the enterprise, and Anton Hager Jr. (figure 7), son of the owner, joined in the effort.²² Between 1923 and 1926, extensions were added to the extremities of the D gallery tunnel system (figures 7 and 8) and German

²¹See Fritz, 1972.

²²Anton Hager Jr. (1902–1980) was born in Traunstein. He later studied mechanical engineering at the engineering school in Mittweida, Saxony, from 1921 to 1923.

²³Dr. Max Brennekam (1870–1954) studied at the universities of Tübingen, Halle, and Greifswald and wrote a dissertation on the philosophy of Immanuel Kant (1895). In the following years, he worked as a schoolteacher in the Berlin region. After World War I, Brennekam shifted his focus to mining, spending a period from 1921 to 1928 in Austria. Together with his son Otto Brennekam (1899–1960), he served on the board of directors of the firm Kohle und Erz Aktiengesellschaft, which was founded in 1923 in Berlin and operated several gold mines in Austria. The 1940s found Brennekam as the owner of a feldspar mining company in Tirschenreuth, Bavaria. *Montanistische Rundschau*, Vol. 15, No. 22, 1923, p. 525; letter from K. Martius to W. von Seidlitz, June 21, 1938, Lagerstättenarchiv Österreichische Geologische Bundesanstalt Wien; Eberl, 1972; Beate Heinrich, Archive of the Municipality of Tirschenreuth, pers. comm., 2020.

Dr. Max Brennekam (figure 9) took over responsibility as mining engineer for operations.²³ The record indicates that Hager and Staudt experienced solid emerald production in some years but that market-

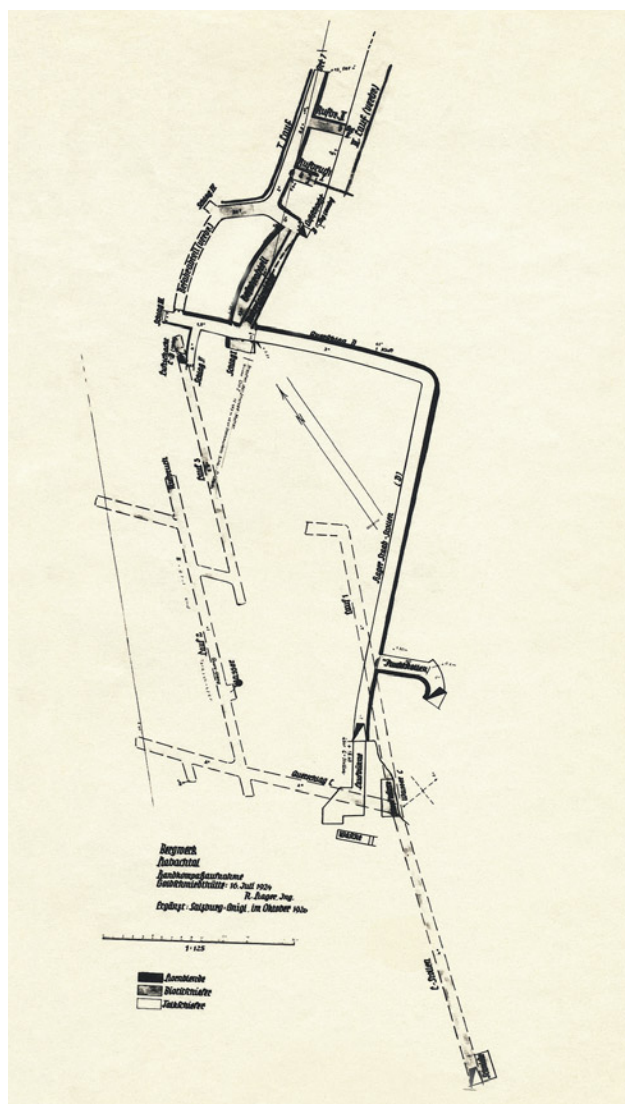


Figure 8. Map of the C and D galleries of the Habachtal emerald mine, the oldest known sketch showing both galleries, drawn by Anton Hager Jr. in 1924 and updated in 1926. Archive of the municipality of Bramberg.

ing and sales were ineffective.²⁴ Meanwhile, in February 1924 an option to purchase the property was recorded with the Mittersill land registry by Hager and Staudt in favor of Adolf Eichmann, an investor and merchant of electrical devices from Linz, but it terminated the same year without exercise.²⁵

Conflicts Over Interests in the Property (1927–1934).

The property was eventually sold in October 1927, and ownership transferred along with several exploration permits held by Hager to the Swiss firm Aktiengesellschaft für modernen Bergbau, located in

Chur.²⁶ This company had been registered in October 1927, with a stated capital of 100,000 Swiss francs (approximately US\$19,000 at the time) and an initial board of directors consisting of Alfred Mannesmann (president) and Hermann Hoesch, both German industrialists; Hans Nipkow (vice president), Emil Frey, Bartholome Jeger, and Florian Prader (figure 10),²⁷ all Swiss engineers or bankers; Conde de Santa Maria de la Sisa, a Spanish citizen and member of parliament representing Madrid; and Christian Buol, a lawyer from Zurich. A German banker named Justus H. Vogeler replaced Buol in 1929.²⁸ A local office was set up in the Senningerbräu, an inn in Bramberg.²⁹ The purchase price was 66,000 Swiss francs, to be paid in two equal installments by January 1 and May 1, 1928, respectively,³⁰ and liens were recorded against the property to ensure full payment.

After the sale, mining resumed for approximately four weeks in the name of the new owner. Brennekam and Anton Hager Jr. stayed on, providing operational guidance for a team of eight miners.³¹ The emerald-bearing rocks were hauled in containers from the mine down to the valley in Bramberg for washing and crystal separation, the same procedure that had been utilized by Hager and Staudt for some time.³²

Such efforts notwithstanding, regulatory and financial problems quickly intervened. Brennekam, serving as local representative for the mine owner, was directed to apply for a working permit for the Swiss Aktiengesellschaft für modernen Bergbau, but

²⁴Eberl, 1972.

²⁵Option declaration given by Anton Hager/Peter Staudt in favor of Adolf Eichmann, February 24, 1924, Mittersill land registry office, Archive of Salzburg Federal State; Grundmann, 1979.

²⁶Notarized contract between Anton Hager/Peter Staudt and Aktiengesellschaft für modernen Bergbau, October 13, 1927, Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry November 30, 1927, Mittersill land registry office; *Montanistische Rundschau*, Vol. 20, No. 9, 1928, p. 278.

²⁷Florian Prader (1883–1946), a Swiss engineer from Zurich, owned several construction companies engaged in the building of railways, bridges, and power plants. *Schweizerische Bauzeitung*, Vol. 127, No. 12, March 23, 1946, pp. 148–149.

²⁸*Schweizerisches Handelsamtsblatt*, Vol. 45, No. 249, October 24, 1927, p. 1874; Vol. 47, No. 257, November 2, 1929, p. 218.

²⁹Lauecker, 1986.

³⁰Notarized contract between Anton Hager/Peter Staudt and Aktiengesellschaft für modernen Bergbau, October 13, 1927, Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry November 30, 1927, Mittersill land registry office.

³¹File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286–1933, Archive of Salzburg Federal State.

³²*Ibid.* See also Leitmeier, 1929/1930 (recounting a presentation given in March 1929 but adding observations from summer 1929 at the locality prior to final publication in 1930).



Figure 9. Dr. Max Brennekam guided mining operations on site during the 1920s, when the property was owned by Anton Hager and Peter Staudt. After the mine was sold to the Swiss entity *Aktiengesellschaft für modernen Bergbau*, he stayed on for several weeks at the end of 1927, but he left Austria in mid-1928. Brennekam is shown with a group of miners at the entrance to one of the galleries during the 1920s. The inset portrait of Brennekam is circa 1927. Photos courtesy of E. Burgsteiner.



Figure 10. The Swiss engineer Florian Prader served as one of the directors of *Aktiengesellschaft für modernen Bergbau*, which purchased the Habachtal property in 1927. He later loaned money to the company and subsequently joined with Max Gaab and Meta Geist in purchasing the Habachtal property out of foreclosure in 1933. Undated photo from *Schweizerische Bauzeitung* (1946).

he was unable to do so in the absence of consent from Switzerland, which was not forthcoming over several months. Brennekam left Bramberg and moved back to Berlin in June 1928.³³

The company also failed to pay the second installment of the purchase price, leading Hager and Staudt to initiate foreclosure proceedings.³⁴ The property was valued at 67,000 Austrian shillings, and the lowest acceptable purchase price was deemed to be 44,354 shillings (equivalent to the unpaid 33,000 Swiss francs).³⁵ The auction scheduled for December 1, 1928, was averted, however, when *Aktiengesellschaft für modernen Bergbau* was able to obtain a loan of 50,000 reichsmark (equivalent to about US\$11,900 at the time) on November 6 from Hans (Johann) Streubert, a mine owner and entrepreneur from Munich who also held interests in the neighboring Hollersbach Valley.³⁶

Hager and Staudt were paid the remaining pur-

chase price, and their liens against the property were released on November 9, 1928,³⁷ while a new lien in favor of Streubert was recorded at the Habachtal emerald mine file of the Mittersill land registry office. Considering all the information available, Staudt had lost a substantial amount of money operating the Habachtal mine.³⁸ Approximately two weeks later, on November 21, 1928, Streubert transferred his interest in the three-year loan in equal parts to Max Gaab (figure 11) and Meta Geist (figure 12).³⁹

In December 1928, *Smaragd-Bergbau Habachtal GmbH* was founded in Mittersill to serve as the Austrian operating entity for the Swiss owner. Streubert, working from Munich, led the new firm.⁴⁰ However, no regular mining took place from 1928 through the

³³File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286-1933, Archive of Salzburg Federal State.

³⁴*Salzburger Volksblatt*, Vol. 58, No. 240, October 18, 1928, p. 7; Vol. 58, No. 243, October 22, 1928, p. 8; Vol. 58, No. 244, October 23, 1928, p. 8.

³⁵*Reichspost*, Vol. 35, No. 293, October 20, 1928, p. 7; *Linzer Volksblatt*, Vol. 60, No. 246, October 23, 1928, p. 9.

³⁶Notarized contract between Hans Streubert and *Aktiengesellschaft für modernen Bergbau*, November 6, 1928, Mittersill land registry office, Archive of Salzburg Federal State; see also *Salzburger Chronik*, Vol. 64, No. 275, November 30, 1928, p. 4; *Reichspost*, Vol. 35, No. 335, December 2, 1928, p. 7. Hans (Johann) Streubert (1866–1941) was born in Regenstau, near Regensburg, Bavaria. He later resided in Munich and was active in mining operations at various localities in Austria. Between 1925 and 1929, he was one of the owners of the company Hollersbacher Zink- und Bleibergwerke. *Grazer Volksblatt*, Vol. 47, No. 69, February 21, 1914, p. 6; *Montanistische Rundschau*, Vol. 11, No. 6, 1919, p. 182; Vol. 15, No. 7, 1923, p. 115; Vol. 15, No. 16, 1923, p. 352; *Salzburger Volksblatt*, Vol. 55, No. 295, December 30, 1925, p. 7; *Compass, Industrielles Jahrbuch - Österreich*, Vol. 60, 1927, p. 410; *Salzburger Volksblatt*, Vol. 58, No. 186, August 14, 1928, p. 9.

³⁷Notarized contract between Anton Hager/Peter Staudt and *Aktiengesellschaft für modernen Bergbau*, November 9, 1928, Mittersill land registry office, Archive of Salzburg Federal State.

³⁸Peter Staudt thereafter closed his timber company in Traunstein in December 1928 and subsequently worked for the administration of the city of Traunstein. Company registration file, entry December 6, 1928, Archive of the City of Traunstein (Stadtarchiv Traunstein); Brigitte Leitemann, granddaughter of Peter Staudt, pers. comm., 2020.

³⁹Notarized contract between Hans Streubert and Max Gaab/Meta Geist, November 21, 1928, Mittersill land registry office, Archive of Salzburg Federal State. Max Gaab (1866–1953) was a lawyer from Munich. Meta Geist (1879–1966), residing in Munich and Fischbachau, Bavaria, was the daughter of food and coffee merchant Adolph Brougier and the widow of Theodor Geist, owner of Geist & Breuninger, a grain wholesaler in Munich. Gaab's private apartment and the office of his law firm, both in Munich, were destroyed during World War II, leaving no documentation regarding events before 1945. Ingrid von Klitzing, granddaughter of Max Gaab, pers. comm., 2020.

⁴⁰Although Hans Streubert worked from a Munich office, the company was registered only in Austria and not in Germany.



Figure 11. At the end of the 1920s, Munich lawyer Max Gaab acquired a one-half interest in a loan that had been extended to *Aktiengesellschaft für modernen Bergbau*, the Swiss owner of the mine, and also made an additional loan to the company. In the ensuing years, Gaab and his family would become the sole owners of the Habachtal property. Photo from the 1920s; courtesy of Ingrid von Klitzing.

remaining period of *Aktiengesellschaft für modernen Bergbau*'s ownership.⁴¹ Instead, only limited exploration, maintenance of the tunnels, and trial mining ensued.⁴² In June 1929, Gaab loaned a further 5,000 reichsmark (equivalent to about US\$1,900 at the time) to *Aktiengesellschaft für modernen Bergbau*,⁴³ and



Figure 12. The remaining one-half interest in the 1928 loan to *Aktiengesellschaft für modernen Bergbau* was transferred to the wealthy widow Meta Geist, living in Munich and Fischbachau, Bavaria, who supported Max Gaab in his efforts and investments. Photo circa 1940; courtesy of Ingrid von Klitzing.

mining expert Wilhem Müller was hired for trial mining and evaluation, which he did that month with seven workers.⁴⁴ On the basis of 1,800 emeralds totaling 3,600 carats recovered during his time on site, with 2% of the crystals (72 carats) of facet quality, Müller compiled a report calculating annual income of 61,500 reichsmark, enough for profitability. He also prepared a map of the different galleries (figure 13) and offered

⁴¹File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286-1933, Archive of Salzburg Federal State; Leitmeier, 1929/1930.

⁴²*Salzburger Volksblatt*, Vol. 58, No. 294, December 24, 1928, p. 9; File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286-1933, Archive of Salzburg Federal State; Letter from E. Klein to W. Müller, August 1, 1929, File "Beryllium," Österreichische Geologische Bundesanstalt, Vienna.

⁴³Notarized contract between *Aktiengesellschaft für modernen Bergbau* and Max Gaab, June 4, 1929, Mittersill land registry office, Archive of Salzburg Federal State.

⁴⁴Wilhelm Müller (born 1885) was educated at the mining school in Diedenhofen (now Thionville), Lorraine. He worked in the mining field in Lorraine and elsewhere and was involved in diamond recovery in the German colony of South-West Africa (now Namibia) before World War I. From 1920 to 1930, he was a manager of the Kappel/Schauinsland lead-zinc mine near Freiburg in southwest Germany, which had a staff of more than 200 miners. Müller lived in the Freiburg area during the 1950s. File "Akten des Bergmeisters Erzbergwerke Schauinsland," 1920, Landesbergdirektion Freiburg; <http://www.freiburg-postkolonial.de/Seiten/personen.htm>; Heiko Wegmann, pers. comm., 2020; Helge Steen, pers. comm., 2020; B. Steiber, pers. comm., 2020.

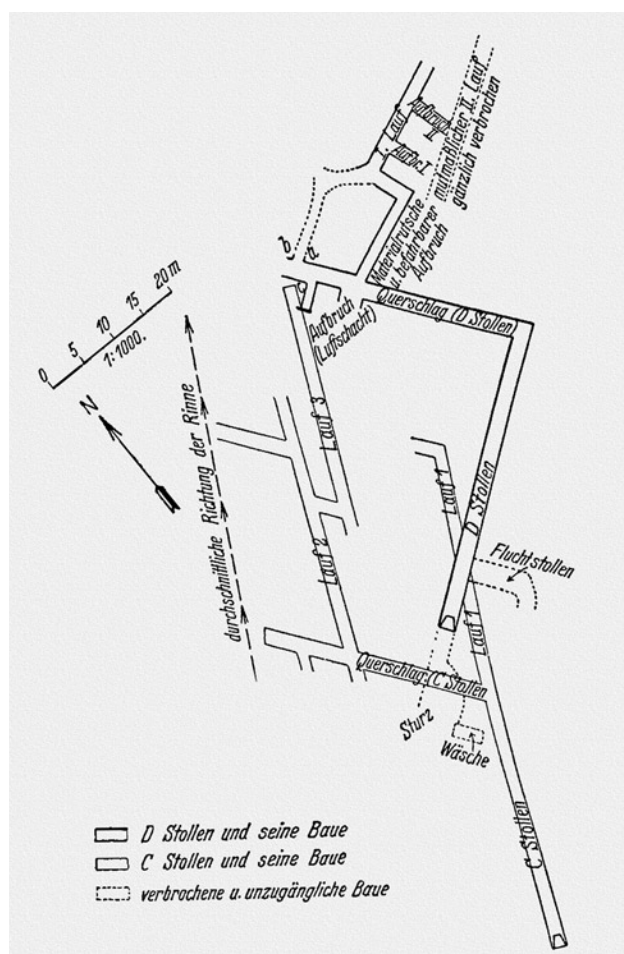


Figure 13. In June 1929, German mining expert Wilhelm Müller examined the mine upon request of the Swiss owner Aktiengesellschaft für modernen Bergbau. Müller prepared a report including this map, which was redrawn and published by Leitmeier (1937).

detailed suggestions for how to target exploration for emerald-bearing schist in the C and D galleries.⁴⁵ After his departure, exploration was led by E. Klein, who even then continued to communicate with Müller for counsel and expertise.⁴⁶

In 1930, the Habachtal mine apparently became caught up in yet another financial scandal. A purported company under the name Deutsch-Österreichische Edelsteinbergwerks Gesellschaft was allegedly established in Munich to collect capital and issue shares in support of the “owner” of the mine, which was incorrectly referred to as the operating entity Smaragd-Bergbau Habachtal GmbH.⁴⁷ Both a memorandum and a related business plan were prepared in service of those aims.⁴⁸ The anonymous memorandum listed a board consisting of four direc-

tors of the Swiss parent company—namely Hoesch, Buol, Vogeler, and Conde de Santa Maria de la Sisle—as well as three German citizens (Friedrich Ritter von Heinzelmann, Heinrich Paxmann, and Friedrich Graf Larisch). The business plan offered a glowing picture of the mine’s potential and commercial relevance.

Emphasizing that the mines in Colombia were closed and those in the Urals completely exploited, the business plan considered the possibility of economic production not only of gem-quality emeralds but also beryllium-bearing minerals and talc. The plan cited earlier reports by mining engineer Emil Sporn from 1928,⁴⁹ by Stuchlik also from 1928, and by Müller from 1929, somehow arriving at a property value of 684,000 reichsmark (or approximately US\$163,000 at the time), an emerald yield of 60,000 carats in 1930, and a profit of 267,000 reichsmark in 1932, despite the obvious disparity with the more realistic figures tabulated by Müller.

Whether these missives had any impact on the investors targeted is unknown, but an examination by the Munich Chamber of Commerce in June 1930 revealed that no such company was legally registered there.⁵⁰ It was later suggested that the alleged entity was linked to several individuals involved in other mining swindles in Germany who were sentenced to prison in 1932.⁵¹

Subterfuges aside, the actual mine owner Aktiengesellschaft für modernen Bergbau spent much of the 1930s enmeshed in a web of litigation and admin-

⁴⁵Müller, W., *Smaragdorkommen Habachtal – Salzburg*, June 1929, 7 pp., File “Beryllium,” Österreichische Geologische Bundesanstalt Wien; Letter from W. Müller to A. Cissarz, December 25, 1939, Lagerstättenarchiv Österreichische Geologische Bundesanstalt Wien; Müller, W., *Smaragd – Beryll – Vorkommen Habachtal*, March 26, 1940, 2 pp., Lagerstättenarchiv Österreichische Geologische Bundesanstalt Wien; File “Beryll Bramberg,” mining documents collected by W. Günther, Archive of the Bergbau- und Götikmuseum Leogang.

⁴⁶Letter from E. Klein to W. Müller, August 1, 1929, File “Beryllium,” Österreichische Geologische Bundesanstalt Wien.

⁴⁷File “Beryl-Emerald-Habachtal” (Beryll-Smaragd-Habachtal), Bundesministerium für Landwirtschaft, Regionen und Tourismus, Montanbehörde West, Salzburg (containing multiple documents from the period 1930 to 1978, hereinafter cited as File “Beryl-Emerald-Habachtal,” Montanbehörde West, Salzburg).

⁴⁸File “Beryl-Emerald-Habachtal,” Montanbehörde West, Salzburg.

⁴⁹Emil Sporn (b. 1869) studied at the Imperial and Royal School of Mining in Leoben and worked for the Austrian mining administration for several decades from 1896 until 1919. Beginning in 1920, he resided in or near Salzburg and worked for several mining companies. He was last referenced in the Archive of the City of Salzburg as of January 1945.

⁵⁰File “Deutsch-Österreichische Edelsteinbergwerks Gesellschaft,” 1930, Munich Chamber of Commerce.

⁵¹*Innsbrucker Nachrichten*, Vol. 79, No. 181, August 8, 1932, pp. 5–6.

TABLE 1. Parties involved in the legal dispute over the Habachtal mine, 1932–1933.

Interested individual or entity	Lawyer or representative	Engineer or other supporting personnel
Aktiengesellschaft für modernen Bergbau (Chur, Switzerland)	Dr. Karl Sender (Zurich) and Dr. Max Duschl (Salzburg)	Othmar Kelb, mining engineer
Christian Schäd (Berlin)	Julius Burger, engineer (Munich)	Josef Köstler, mining engineer
Rudolf Nocker (Bramberg, Austria) and Habach Weggenossenschaft (Bramberg)	Dr. Gustav Freytag (Mittersill, Austria)	
Hugo Ullhofen (Mittersill) and Angelo De Marchi (Milan and Rome)	Dr. Gustav Freytag	Gottfried Förster, “geologist”
Max Gaab (Munich) and Meta Geist (Fischbachau, Germany)	Dr. Max Duschl	
Florian Prader (Zurich)	Dr. Max Duschl	
Gottfried Förster (Innsbruck, Austria)	Dr. Felix Friedrich (Innsbruck)	

istrative proceedings, one in Switzerland and several in Austria. The opening salvo occurred when both Gaab and Geist, as creditors, filed separate lawsuits in Austria against the company for nonpayment of debts and interest.⁵² Those were apparently resolved through loans extended to the company by board member Prader and a Munich bank, which also resulted in further lien encumbrances against the property.⁵³ This offered minimal respite, however, because a Swiss bankruptcy proceeding was opened in October 1931 but was then terminated three days later, without dissolution of the company, on account of a lack of any assets of value in Switzerland for distribution.⁵⁴

Aktiengesellschaft für modernen Bergbau remained

the owner of the mine, and ensuing controversies shifted to Austria. The early years of the decade saw in particular several different groups of associates seeking to establish or pursue interests in the property (see table 1).⁵⁵ Beginning in the 1930s, exploration permits were registered for the Habachtal area by Munich mining engineer Julius Burger⁵⁶ in the name of Christian Schäd (figure 14, left) and as directed by his father, Dr. Carl Schäd (figure 14, right).⁵⁷ Existing permits held by others were also purchased by and transferred to Christian Schäd. At that time, technical progress had developed several lucrative applications for beryllium ore and metal (e.g., for X-ray tube windows and metallurgic processes), rendering Habachtal an increasingly in-

⁵²Max Gaab v. Aktiengesellschaft für modernen Bergbau and Meta Geist v. Aktiengesellschaft für modernen Bergbau, Bezirksgericht Mittersill, May 21, 1930, Mittersill land registry office, Archive of Salzburg Federal State.

⁵³Notarized contract between Florian Prader and Aktiengesellschaft für modernen Bergbau, June 26, 1931, Mittersill land registry office, Archive of Salzburg Federal State.

⁵⁴Schweizerisches Handelsamtsblatt, Vol. 49, No. 254, October 31, 1931, p. 2318.

⁵⁵File “Beryl-Emerald-Habachtal,” Montanbehörde West, Salzburg; File “Status of Beryl as Ore Mineral” (Vorbehaltener Charakter des Berylls), Bundesministerium für Handel und Verkehr, 166.786 – O.B. – 1932, Austrian State Archive, Vienna (Österreichisches Staatsarchiv, Vienna); Florian Prader v. Habach Weggenossenschaft, Bezirksgericht Mittersill, C 145/1932, Archive of Salzburg Federal State; Gottfried Förster v. Angelo De Marchi, Bezirksgericht Mittersill, C 132/1933, Archive of Salzburg Federal State.

⁵⁶Julius Burger (1893–1977) was an engineer from Munich who had been involved in multiple mining projects in Austria, including coal mining near Lechaschau, Tyrol. He moved from Munich to Kitzbühel, Austria, in 1934 and later returned to Munich in 1947. Contemporaneous with his involvement with Christian Schäd in the Habachtal emerald project, Burger remained engaged in several other mining ventures in Austria, such as one in Rettenbach, during the 1930s and 1940s. Assisting with the work in Habachtal was Austrian mining engineer Josef Heinrich Köstler (1878–1935). *Mitteilungen über den Österreichischen Bergbau*, Vol. 1, 1920, p. 44; Schmidegg, 1955; City Archive of Kitzbühel, pers. comm., 2020; City Archive of Munich, pers. comm., 2020.

⁵⁷Christian Schäd (1894–1982), a painter from Berlin, was apparently never active on site in Habachtal and is thus considered an investor in the undertaking. The investment in Habachtal emerald mining was initiated by his father Dr. Carl Schäd (1866–1940), a notary from Munich, using Christian’s name mainly for tax reasons. Carl also invested large sums in various other mining projects, especially in Italy, which eventually led to substantial losses. Archive of Salzburg Federal State; Richter, 2020.

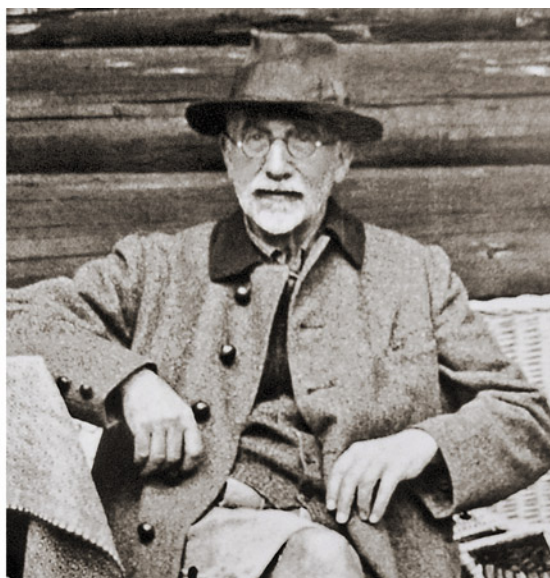


Figure 14. In the early 1930s, multiple exploration permits in the Habachtal area were registered in the name of the painter Christian Schad (left, circa 1930) from Berlin. The investments were initiated by his father, Dr. Carl Schad (right, circa 1934–1935), a notary from Munich. Photos courtesy of Christian Schad Stiftung Aschaffenburg, Museen der Stadt Aschaffenburg.

teresting target.⁵⁸ Reports were prepared in 1931 and 1932 by Professor Hans Leitmeier (figure 15) from Vienna University, at the request of Aktiengesellschaft für modernen Bergbau and the Schad/Burger team, with a possible joint venture in view.⁵⁹ Leitmeier concluded that although the emeralds (figure 16) were not of a sufficient quality for economical mining, the extraction of beryl for metallic ore would be.

However, before further steps could be taken by Schad, Burger, or Aktiengesellschaft für modernen Bergbau, the Swiss company was sued in the court in Mittersill by Rudolf Nocker and the entity Habach Weggenossenschaft, both of Bramberg, to recover alleged liabilities of 625 Austrian shillings arising in

1930 and 1931. When initial attempts to resolve the matter by leasing the property for 500 shillings per year were unsuccessful,⁶⁰ the court named Hugo Ullhofen (1886–1973), a schoolteacher from Mittersill, receiver of the property. Ullhofen, in turn, leased the Habachtal emerald mine to Angelo De Marchi, a farmer and landowner from Milan,⁶¹ via a contract dated July 27, 1932, and running from August 1932 to October 1933.⁶² De Marchi had become aware of the property through Gottfried Förster, a self-described geologist active throughout Austria in searching for mining deposits and familiar with Habachtal since approximately 1930.⁶³

As noted in materials prepared by De Marchi's rep-

⁵⁸Waagen, 1936.

⁵⁹File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg (with only the 1932 report remaining available in the file). Hans Leitmeier (1885–1967) was a professor of mineralogy and petrography at Vienna University who dedicated a substantial percentage of his scientific research to alpine mineralogy and deposits. In addition to the 1931 and 1932 reports, Leitmeier in 1938 published a history of the Habachtal deposit, based largely on personal communication with Ernst Brandeis, grandson of Samuel Goldschmidt. However, such recollections were premised on memories some 35 years after the fact and not necessarily consistent with what can be derived from contemporaneous documentation. A further historical summary published by Leitmeier (1946) suffers from similar discrepancies, particularly as relates to the era between 1918 and 1939. See Hammer and Pertlik, 2014.

⁶⁰Salzburger Chronik, Vol. 68, No. 112, May 17, 1932, p. 6; Salzburger Volksblatt, Vol. 62, No. 112, May 17, 1932, p. 6.

⁶¹Angelo De Marchi was born in 1882 in the municipality of Amatrice northeast of Rome. For the 1932 and 1933 period, addresses in both Milan and Rome are noted, and references can be found to the "De Marchi group of investors from Rome," suggesting that De Marchi maintained both landholdings in Milan and business connections in Rome. File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286-1933, Archive of Salzburg Federal State; File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg.

⁶²Ullhofen, H., undated report covering 1930–1953, Archive of E. Burgsteiner, 2 pp.

⁶³Gottfried Förster v. Angelo De Marchi, Bezirksgericht Mittersill, C 132/1933, Archive of Salzburg Federal State. Gottfried Förster (1882–1942) was born in Bozen (Bolzano), then part of the Austro-Hungarian Empire and now part of Italy. Förster was a painter by training but characterized himself as a geologist. The year 1924 saw him active in the Hollersbach Valley, east of Habachtal. By the 1930s, he had been operating as a purported exploration geologist for more than two decades in various parts of Austria, searching primarily for gold, copper, lead, and zinc deposits. Förster also applied for exploration permits and tried to sell the mining rights; some of his efforts were apparently deemed fraudulent. See Innsbrucker Nachrichten, Vol. 56, No. 152, July 8, 1909, p. 5; Tiroler Volksblatt, Vol. 49, No. 3, January 8, 1910, p. 8; Der Tiroler, Vol. 30, No. 36, March 25, 1911, p. 5; Tiroler Anzeiger, Vol. 10, No. 11, January 9, 1917, p. 6; Meraner Tagblatt, Vol. 38, No. 67, April 13, 1920, p. 1; Tiroler Anzeiger, Vol. 15, No. 57, March 10, 1922, p. 4; Salzburger Volksblatt, Vol. 54, No. 50, February 29, 1924, p. 4; Der Landsmann, Vol. 25, No. 106, May 8, 1924, p. 2.



Figure 15. Professor Hans Leitmeier of Vienna University authored various reports concerning the Habachtal mine in the early 1930s. Their premise was that although emerald mining at Habachtal was not economical, the extraction of beryl for beryllium ore could be. Photo at the entrance to D gallery circa 1935. Archive of Peter Lausecker.

representative, attorney Dr. Gustav Freytag from Mittersill, the condition of the mine in 1932 was very poor. The mine had not been maintained for several years, and the galleries had been rendered nearly inaccessible by illegal mining activities and uncontrolled blasting (figure 17).⁶⁴ De Marchi invested 25,000 Austrian shillings (equivalent to approximately US\$1,790 at the time) and employed 15–20 miners to recommence operations, with Förster serving as mine manager.⁶⁵ Authorization for recovery operations pursuant to the Trade, Commerce and Industry Regulation Act was sought through a September 1932 application.⁶⁶ While that was pending, their first season's efforts enabled the transport in October 1932 of 16 boxes of rough material with a total weight of 500 kg over the Alps to Italy.⁶⁷

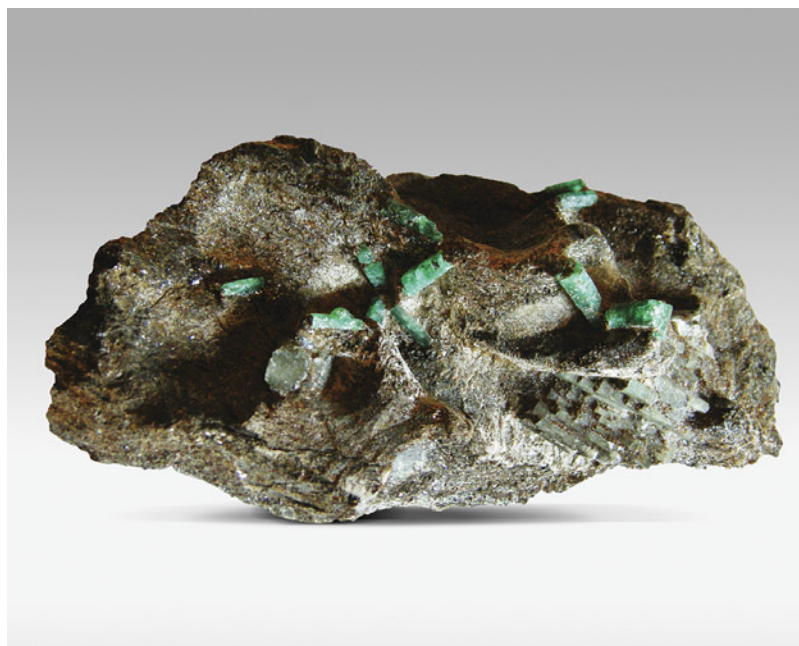


Figure 16. Habachtal emeralds often display a bright green coloration but are fractured and heavily included. For that reason, only a small fraction of prismatic rough crystal material is of facetable quality. Shown here are emerald crystals with lengths of up to 15 mm from the Habachtal deposit, on a matrix of biotite schist measuring approximately 19 × 6 cm, accompanied by light bluish gray aquamarines (lower right). Photo by K. Schmetzer; private collection.

Not surprisingly, Schad and Burger were disquieted by the turn of events. Only two weeks into the De Marchi lease, Burger—again acting on behalf of Schad—instigated a regulatory proceeding at the mining administration in Wels that would protect their rights by:⁶⁸

1. Ensuring unrestricted access in accordance with the existing exploration permits, thus allowing for further development activities in the galleries (§ 100-103 of the mining law).

⁶⁴Gottfried Förster v. Angelo De Marchi, Bezirksgericht Mittersill, C 132/1933, Archive of Salzburg Federal State. Dr. Gustav Freytag (1881–1947) was a judge in Salzburg before starting his own law firm there in 1925. In 1931 he moved to Mittersill in Pinzgau, where he continued to work as a lawyer.

⁶⁵Ibid. See also Leitmeier, 1938; Lausecker, 1986; Hönigschmid, 1993; Lewandowski, 1997.

⁶⁶File “Beryl-Emerald-Habachtal,” Montanbehörde West, Salzburg.

⁶⁷Gottfried Förster v. Angelo De Marchi, Bezirksgericht Mittersill, C 132/1933, Archive of Salzburg Federal State.

⁶⁸File “Beryl-Emerald-Habachtal,” Montanbehörde West, Salzburg.



Figure 17. One piece of evidence introduced in legal proceedings in 1932 was a map of the Habachtal mine apparently prepared by copying and coloring the map drawn by Anton Hager Jr. in 1924 and updated in 1926. The C gallery (red) was not accessible at the time, while the D gallery (blue) could be accessed. File “Beryl-emerald-Habachtal,” Montanbehörde West, Salzburg.

2. Granting mining titles for the property, as would be feasible if beryl were declared to be an ore mineral of economic value covered by the mining law (§ 40-44).

Aktiengesellschaft für modernen Bergbau was involved in that proceeding, represented by attorney Dr. Max Duschl from Salzburg.⁶⁹ Following negotiations, a preliminary ruling was made by the head of the mining administration (or *Berghauptmann*). On September 13, 1932, Dr. Franz Aigner (figure 18)⁷⁰ deemed beryl to be covered by the mining law, a reversal of the administration’s earlier stance. The vic-

tory was short lived, however. An inspection at the mine the next day found only limited quantities of beryl, such that mining could not be considered of

⁶⁹Dr. Max Duschl (1870–1949) began his career as a lawyer in 1903 and continued in that field in Salzburg for nearly five decades. He was assisted by the Austrian mining engineer Othmar Kelb (1871–1947).

⁷⁰Dr. Franz Aigner (1872–1962) studied law in Vienna and mining in Leoben. He began his career at the Austrian mining administration in 1903, serving as staff member in Wels from 1910 and as head of the department from 1913 to 1936, responsible for mining activities in the Habachtal Valley. Werneck, 1988; Günther and Lewandowski, 2002.



Figure 18. In 1932, Dr. Franz Aigner was the head of the Austrian mining administration located at Wels. Dr. Aigner was responsible for overseeing and ruling in the regulatory controversies targeting the Habachtal emerald mine. 1930s photo from *Montanistische Rundschau* (1935).

economic value and no mining privileges could be granted. De Marchi and his workers had apparently hidden some locations in the galleries where the tunnels crossed rocks with high concentrations of beryl and emerald. As a result, Schad and Burger maintained only a right of admission to the property for further development, in hopes of proving the mine to be economically viable for the extraction of beryl as beryllium ore.⁷¹

Yet another tactic was pursued by the lien holders Gaab, Geist, and Prader, the latter of whom also held exploration permits in the area. All were represented by Duschl. Seeking to maximize options, Duschl instigated litigation on behalf of Gaab and Geist at the court in Salzburg and on behalf of Prader at the court in Mittersill, with both suits seeking to overturn the Mittersill court's decision to appoint Ullhofen as receiver.⁷² Although neither suit achieved greater rights

for the petitioning lien and permit holders, given the nature of their interests, a procedural error identified by Duschl did cause the Mittersill court on November 20, 1932, to revoke Ullhofen's appointment as receiver, which rendered invalid the contract between Ullhofen and De Marchi.⁷³

In light of these developments, De Marchi appealed the decisions of both the Wels mining administration and the Mittersill court, while continuing his efforts to obtain a working permit for emerald recovery under the Trade, Commerce and Industry Regulation Act.⁷⁴ Complicating such attempts were multiple additional lawsuits that entangled De Marchi during the same timeframe. His former mine manager Förster sued in May 1933, claiming inadequate compensation and a right under a June 1932 agreement to at least 25% of the mine's profit.⁷⁵ De Marchi was also involved in actions pending in Italy. For reasons beyond the scope of this study, after he had returned to Italy in October 1932, De Marchi risked imprisonment if he reentered Austria.⁷⁶ Pursuit of the Austrian proceedings was not curtailed, however, as they could be handled locally by his attorney Freytag. A measure of success in his appeal of the Mittersill court's ruling was achieved when the Supreme Court in Vienna reinstated the lease contract with Ullhofen in April 1933. De Marchi also finally obtained a working permit in July 1933.⁷⁷ His appeal of the administrative ruling, on the other hand, was dismissed in September 1933 by the Ministry for Trade and Traffic on procedural grounds, and no final decision about the coverage of beryl under the mining law was made.⁷⁸

⁷¹File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg.

⁷²Ibid.; *Florian Prader v. Habach Weggenossenschaft*, Bezirksgericht Mittersill, C 145/1932, Archive of Salzburg Federal State.

⁷³File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg; File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang.

⁷⁴File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg.

⁷⁵*Gottfried Förster v. Angelo De Marchi*, Bezirksgericht Mittersill, C 132/1933, Archive of Salzburg Federal State.

⁷⁶Ibid.

⁷⁷File Bezirkshauptmannschaft Zell am See, BH Zell H1 2286-1933, Archive of Salzburg Federal State; File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang. Notably, even the Austrian embassy in Rome and the Italian consulate in Innsbruck had become involved in the proceedings.

⁷⁸File "Status of Beryl as Ore Mineral" (Vorbehaltenen Charakter des Berylls), Bundesministerium für Handel und Verkehr, 166.786 – O.B. – 1932, Austrian State Archive, Vienna. This action also saw intervention by the Italian Embassy in Vienna.



Figure 19. View from the Habachtal mine downhill to the large boulder field serving as a secondary deposit where emeralds were also found. Undated photo from Mühlviertler Nachrichten (1935).

Nonetheless, all of De Marchi's legal machinations eventually came to naught as a result of the foreclosure of the property instigated by Gaab and Geist in May 1933.⁷⁹ A foreclosure auction was held on August 31, 1933, and creditors Gaab, Geist, and Prader purchased the property for 12,806 Austrian shillings (approximately US\$770 at the time), an amount less than the total outstanding liabilities.⁸⁰ Because the other pending legal actions had precluded De Marchi from taking any practical steps to work the mine between the time his lease was formally reinstated in April and the August sale, any

rights were effectively vitiated before they could be acted upon in practice.

The next several years saw a shifting of applicable exploration permits among interested parties, as well as the formation of a new entity. Certain existing permits held by De Marchi, Schad, Freytag, and Förster were terminated, while others held by Schad were extended. New permits were applied for by and/or granted to De Marchi, Schad, Freytag, and Förster.⁸¹

Property Under the Swiss Smaragd Aktiengesellschaft (1934–1939). By June 1934, the company Smaragd Aktiengesellschaft had been established in Schaffhausen, Switzerland, with a stated capital of 35,000 Swiss francs (approximately US\$11,000 at the time) in 35 equal shares.⁸² The initial shareholders consisted of one Swiss citizen and four Germans: Prader, Geist, Gaab, Schad, and Burger.⁸³ Schad contributed nine exploration permits in exchange for 14 shares, becoming a major holder, and the property was leased to Smaragd Aktiengesellschaft by owners Gaab, Geist, and Prader for a 30-year term.

In 1935, Prader's construction company from Zurich led endeavors to recommence operations at the Habachtal site (figure 19) on behalf of Smaragd Aktiengesellschaft. That year he requested from Müller a copy of the 1929 report⁸⁴ and employed 10–12 workers to safeguard the property and form a plan for further activities.⁸⁵ Subsequent years saw mining by Smaragd Aktiengesellschaft continued on a low

⁷⁹Ibid.

⁸⁰*Schweizerisches Handelsamtsblatt*, Vol. 52, No. 46, February 24, 1934, p. 503; Order, Bezirksgericht Mittersill, March 26, 1934, Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry November 13, 1933, Mittersill land registry office. Smaragdbergbau Habachtal GmbH, the Austrian operating entity of the Swiss Aktiengesellschaft für modernen Bergbau, was formally dissolved in 1937. *Salzburger Volksblatt*, Vol. 67, No. 142, June 24, 1937, p. 8.

⁸¹Reported frequently in *Montanistische Rundschau*, Vols. 25–27, 1933–1935.

⁸²*Schweizerisches Handelsamtsblatt*, Vol. 52, No. 150, June 30, 1934, p. 1811; *Montanistische Rundschau*, Vol. 35, No. 44, 1935, T.Mo. 44.

⁸³File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg; File Bezirkshauptmannschaft Zell am See, BH Zell 1937 J5 – 5423, Archive of Salzburg Federal State; File Bezirkshauptmannschaft Zell am See, BH Zell 1938 H1 – 12261, Archive of Salzburg Federal State.

⁸⁴Letter from W. Müller to A. Cissarz, December 25, 1939, Lagerstättenarchiv, Österreichische Geologische Bundesanstalt Wien.

⁸⁵File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State; File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang; *Salzburger Chronik*, Vol. 71, No. 202, September 3, 1935, p. 9; *Alpenländische Rundschau*, No. 621, September 7, 1935, p. 10.



Figure 20. Left: Entrance to the D gallery in the second half of the 1930s. Right: Processing of emerald-bearing rocks in the second half of the 1930s. Photos courtesy of E. Burgsteiner.

level, led by Burger from 1936 to 1938 with five to seven miners mentioned in various documents for the 1936 to 1938 seasons.⁸⁶ Local press from the period reported recovery of emeralds as gemstones (figure 20), with the permits contributed by Schad allowing Smaragd Aktiengesellschaft to pursue simultaneous exploration and development for the type of beryl mining that would be regulated by the mining law.⁸⁷ Leitmeier published two additional studies during the era, focusing on geology and the genesis of emerald formation (figure 21).⁸⁸ By 1939,

Burger was no longer employed by the company. Operations that year, the final year of the firm's work on site, amounted only to one engineer, one foreman, and several miners searching exclusively for emeralds.⁸⁹ Freytag at that point served as legal representative for the company in Austria.⁹⁰

Meanwhile, in 1937 the mine's former owner Anton Hager had filed a lawsuit against Smaragd Aktiengesellschaft and Christian Schad, with Gaab, Burger, and Dr. Carl Schad also becoming involved.⁹¹ Details are vague, however, and no tangible substan-

⁸⁶File Bezirkshauptmannschaft Zell am See, BH Zell 1936 A1 – 7587, Archive of Salzburg Federal State; File Bezirkshauptmannschaft Zell am See, BH Zell 1938 H1 – 12261, Archive of Salzburg Federal State; File "Beryll Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang; *Salzburger Chronik*, Vol. 73, No. 147, July 1, 1937, p. 6; *Der Wiener Tag*, Vol. 16, No. 5047, July 3, 1937, p. 5; Leitmeier, 1938.

⁸⁷File Bezirkshauptmannschaft Zell am See, BH Zell 1938 H1 – 12261, Archive of Salzburg Federal State; *Völkischer Beobachter*, Wiener Ausgabe, No. 169, September 2, 1938, p. 12.

⁸⁸Leitmeier, 1937, 1938.

⁸⁹Hanke, 1939.

⁹⁰*Montan-Handbuch für die Ostmark und die Südost-Länder*, Vol. 20, 1940, Verlag Rudolf Bohmann, Vienna, p. 20.

⁹¹See *Dr. Max Duschl v. Christian Schad, et al.*, Salzburg court, March 5, 1943, File CSSA 4826-2018, Christian Schad Stiftung Aschaffenburg, Museen der Stadt Aschaffenburg (a related suit over nonpayment of legal fees). The file for the primary case before the Salzburg court, characterized as "extremely complicated," is no longer preserved in the archive of Salzburg Federal State. Land Salzburg, Landesarchiv, pers. comm., 2020.

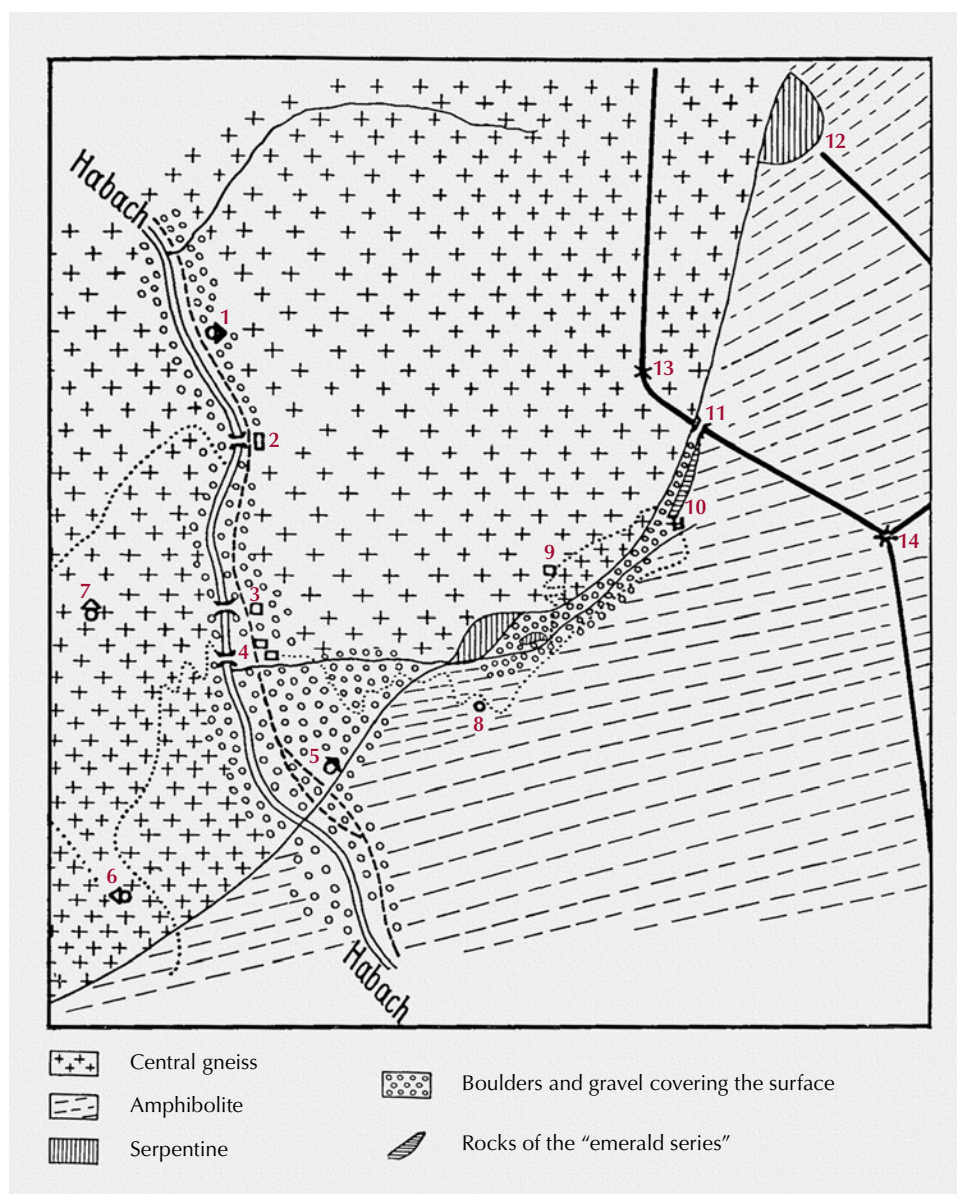


Figure 21. Geological map of the rocks found in the vicinity of the Habachtal deposit located east of the Habach Creek, after Leitmeier (1937). Indicated features include: the Alpenrose guest house (4), grazing pasture (8), Goldschmidthütte (9), the mining area (10), Legbachscharte (11), schwarze Wand (12), Nasenkogel (13), Graukogel (14), and various agricultural areas or guesthouses (1–3 and 5–7). Numbers are reproduced in red. The solid line represents the mountain ridge of the Habach Valley.

tive impact on the status of the mine or those connected thereto is apparent.

HABACHTAL IN THE MODERN ERA (1940 TO PRESENT)

As the decade turned, recovery of beryl as an ore mineral was discussed several times between 1939 and 1941 at the Reichsstelle für Bodenforschung in Vienna, now controlled from Berlin,⁹² but no practical mining operations were undertaken.⁹³ Burger now evaluated for Frankfurt-based Gold- und Silberscheideanstalt⁹⁴ on the feasibility of mining for beryllium ore and even initiated efforts in 1940 to gain control of the mine, although those led to no tangible result either.⁹⁵

In December 1940, the shareholders decided to dissolve Smaragd Aktiengesellschaft, and the process was finalized approximately one year later, rendering the shares worthless.⁹⁶ During the 1941 to 1942 period, Gaab then purchased the third of the Habachtal property owned by Prader for 4,000 Swiss francs (ap-

⁹²Danner, 2015.

⁹³Danner, 2014.

⁹⁴Later known as Degussa AG.

⁹⁵File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg; File "Beryl Bramberg," mining documents collected by W. Günther, Archive of the Bergbau- und Gotikmuseum Leogang.

⁹⁶*Schweizerisches Handelsamtsblatt*, Vol. 59, No. 23, January 28, 1941, p. 186; Vol. 60, No. 12, January 17, 1942, p. 129; Richter, 2020.



Figure 22. In the period shortly after World War II, Hans Zieger (left) served as an administrator at Habachtal, overseeing limited activity and assisted primarily by only one miner. Photo from 1948; courtesy of A. Lahnsteiner.

proximately US\$930 at the time), raising his share to two-thirds.⁹⁷

No mining activities were documented during the rest of World War II. After the war, only limited mining was performed by a few individuals during the summer months. The mine was administered primarily by the pianist Hans Zieger (1892–1953, figure 22), who began working in Habachtal in late 1945 under a contract with Gaab.⁹⁸ Zieger was also named administrator of the property by the U.S. Allied Commission for Austria, and he operated for many years with only one miner.⁹⁹

Details of developments and activities at Habachtal after World War II are generally beyond the scope of this study and have been well covered by other authors.¹⁰⁰ Various individuals or groups of individuals were involved on a temporary basis, and the possibility of mining the property for beryllium ore continued to come up for discussion in several forums, but nothing was pursued.¹⁰¹

Meanwhile, upon Gaab's death in 1953, his interest was split between his son Karl Gaab (1901–2000, figure 23), a Munich lawyer, and daughter Irma Sauter. Karl Gaab later bought his sister's one-third

⁹⁷Notarized contract between Florian Prader and Max Gaab, October 29, 1941 (Munich) and May 22, 1942 (Zurich), Mittersill land registry office, Archive of Salzburg Federal State; Habachtal emerald mine file, entry November 25, 1942, Mittersill land registry office.

⁹⁸Contract between Max Gaab, Franz Mayböck, Leo Weiss, and Hans Zieger, October 4, 1945, Archive of Erwin Burgsteiner, Bramberg.

⁹⁹USACA 1945–1950, Records of the Property Control Branch of the U.S. Allied Commission for Austria, File Sch 398, Property of Meta Geist and Max Gaab, 24 pp. <https://www.fold3.com/image/306445403?terms=Gaab+and+Hausmann>, 1950.

¹⁰⁰See Eberl (1972), Pech (1976), Lausecker (1986), Grundmann (1991), Exel (1993), Lewandowski (1997), and Burgsteiner (2002).

¹⁰¹See File "Beryl-Emerald-Habachtal," Montanbehörde West, Salzburg; Kirnbauer, F., Gutachten über das Beryllvorkommen Habachtal einschl. Aufschlußplanung, October 1, 1955, 18 pp.; File "Beryllium," Österreichische Geologische Bundesanstalt Wien; Smaragdbergwerk für Atomindustrie, 1956.



Figure 23. After the death of his father in 1953 and various purchase transactions over the ensuing years, Munich lawyer Karl Gaab became the sole owner of the Habachtal property from 1964 until his death in 2000. Photo from the 1970s; courtesy of Ingrid von Klitzing.

share in 1962 and the final one-third held by Geist in 1963 (transactions formally registered in 1963 and 1964, respectively).¹⁰² Until his death, Karl Gaab remained the sole owner, attempting to protect the property to the extent possible. A comparison of maps prepared between the 1920s and the 1980s shows that as the decades passed, certain sections of the mine collapsed and additional areas were dug (figure 24, opposite page).

At present, the Habachtal emerald mine is still in private possession and since 1985 has been maintained by the Steiner family from Bramberg. Since 2001, Alois Steiner and his son Andreas (figure 25) have overseen operations. Three to four individuals work in the D gallery from mid-June to September or October. The finds have included emeralds in matrix sold to mineral collectors (figures 26 and 27), as well



Figure 25. The Habachtal emerald mine has been maintained since 1985 by the Steiner family from Bramberg. Andreas Steiner is seen here at the entrance to the D gallery. Photo from 2009 by E. Burgsteiner.

as limited quantities of material used in both faceted (figure 28) and rough form to produce Habachtal emerald jewelry pieces.¹⁰³

¹⁰²Habachtal emerald mine file, Mittersill land registry office, Archive of Salzburg Federal State.

¹⁰³Andreas Steiner, pers. comm., 2019; Claudia Steiner, pers. comm., 2019.

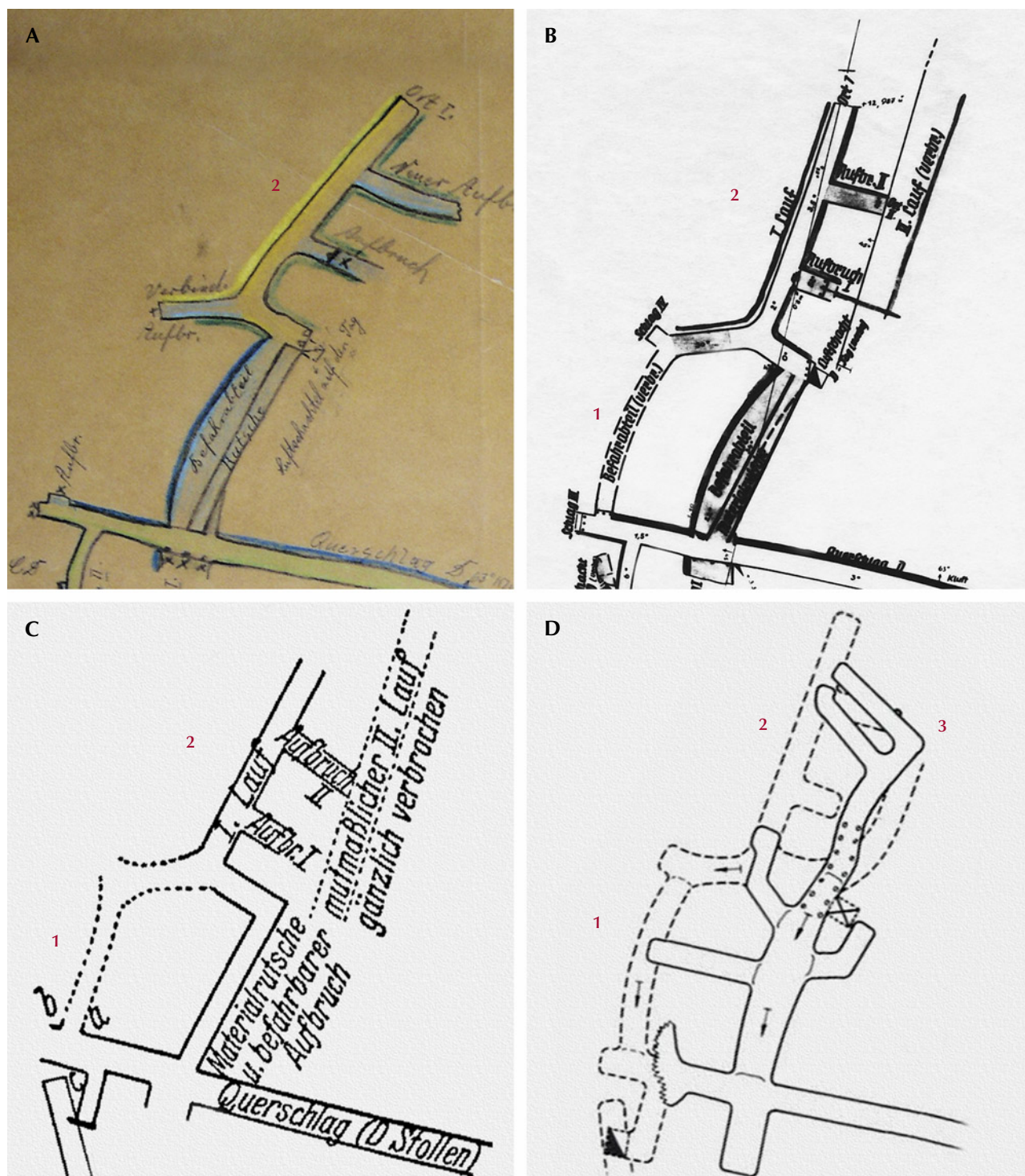


Figure 24. Four maps of a portion of the D gallery at the Habachtal mine, in the area where the emerald-bearing talc and biotite schists were reached, illustrate developments over the course of approximately seven decades: A: Hager (1923). B: Hager (1924/1926). C: Leitmeier (1937) after Müller (1929). D: Grundmann (1991). Solid lines represent accessible areas, while dashed lines indicate collapsed, inaccessible sections. Comparison reveals that early parts of the tunnels worked by Hager and Staudt (1) soon collapsed. After World War II, the main access to the end of the gallery (2) collapsed and a new tunnel (3) was prepared.

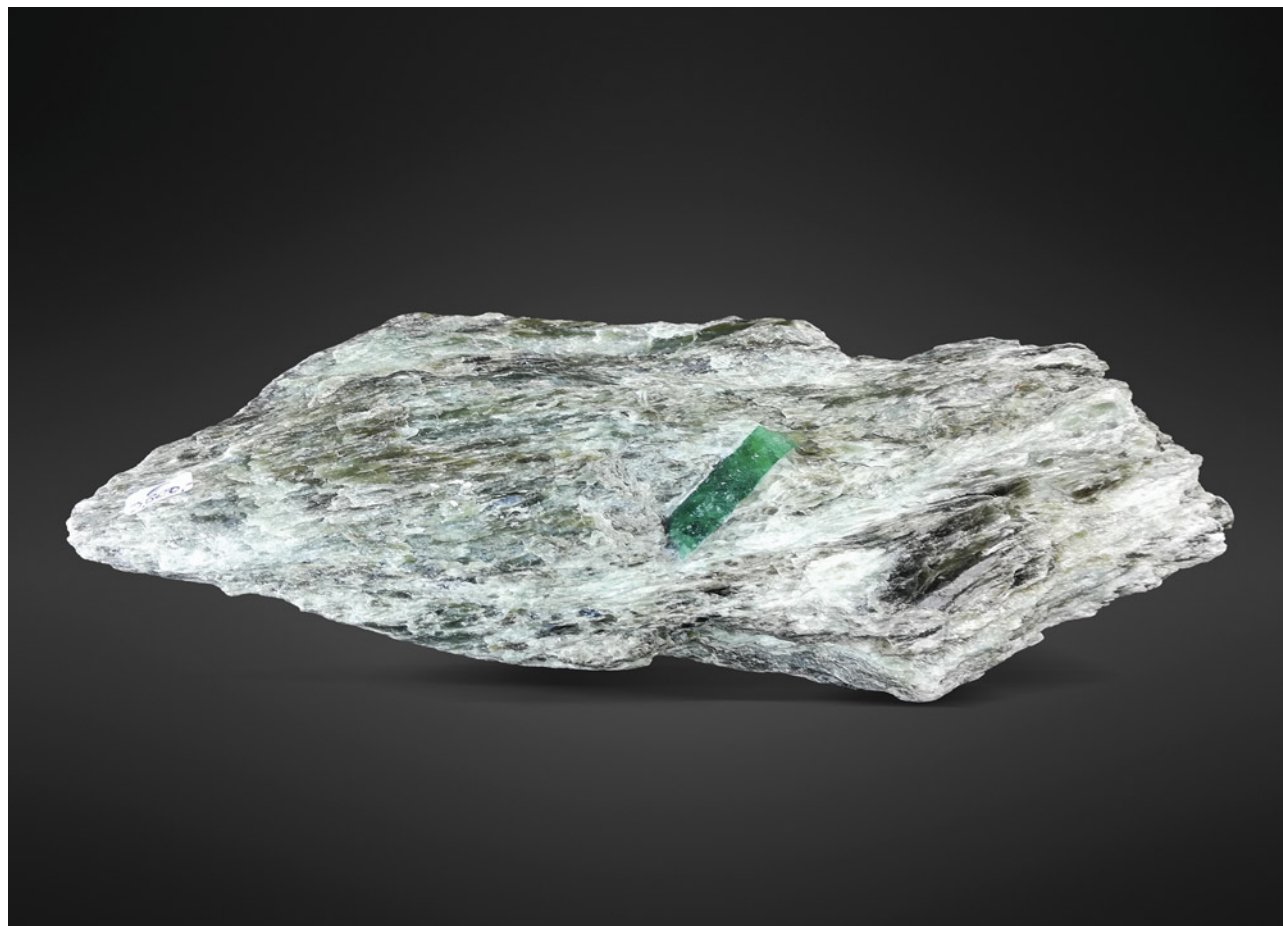


Figure 26. An emerald crystal 22 mm in length on a matrix of talc schist, mined in 2019 at the Habachtal deposit under the Steiner family. Photo by K. Schmetzer; courtesy of Andreas Steiner.



Figure 27. At the Habachtal emerald deposit, gray or blue beryl (aquamarine) is also found occasionally. Even rarer are color-zoned crystals such as those shown here on a biotite schist matrix (see arrow for the color zoning). The sample on the left measures 20 × 8 cm; the length of the two color-zoned crystals (right) is approximately 1 cm. Photos by K. Schmetzer; courtesy of private collection.



Figure 28. Faceted Habachtal emeralds from the H.A. Hänni collection at SSEF in Basel, Switzerland. The largest gem measures 9.4 mm in length and weighs 2.9 ct. Photo by H.A. Hänni.

DISCUSSION AND CONCLUSIONS

Contemporary thinking about the history of emerald mining at Habachtal during the sixteenth to eighteenth centuries has been based largely on perpetuated misinterpretation of several early references. Some look to the report by Aulitzky (1973) that mistook a 1593 landslide as an event destroying assumed emerald mines on the eastern slope of the valley, when in fact the disaster buried adits to the silver mines at Gamskogel on the western slope. Others rely on a 1727 mining chronicle by Brückmann, which in turn was based on editions of a booklet by Lehner (1669, 1702, 1718), all of which erroneously referred to green and violet fluorites from the Bach mining area near Donaustauf as emeralds and amethysts. Even aside from the mineralogical mistake, to connect Bach and Donaustauf in Bavaria to Habachtal in Austria is geographically baseless. However, this did not stop a number of well-known twentieth-century authors from repeating the error

(see Scherz, 1955; Gübelin, 1956a,b), which is still found in more recent texts.¹⁰⁴

Yet another misinterpretation, albeit more subtle, derives from the first known written but unpublished reference to Habachtal emeralds in a 1669 letter by Anna de' Medici, which mentions Danish-Italian scientist Niels Stensen's journey to the region. For some to have stretched mention of an *occurrence* in the original language to imply *mining* is unjustified. Only limited collection by locals during the era seems supportable. The first publication on the occurrence was written by Schroll (1797) as part of a geological and mineralogical description of Salzburg, and the primary source was identified some decades later in the 1820s.

Thereafter began the mining history at Habachtal, a saga fraught with twists, turns, starts, stops, hopes,

¹⁰⁴Stehrer, 2000.

TABLE 2. History of emerald mining in Habachtal.

Date	Event
June 1669	Danish-Italian scientist Niels Stensen travels to the emerald occurrence, an event memorialized in a letter from Anna de' Medici of Innsbruck to her brother in Florence.
1797	The first published description of the Habachtal emerald occurrence is presented in a scientific treatise by Kaspar Melchior Schroll.
1816	Magnus von Petersen reports having visited the secondary deposit in 1815.
1821	Jakob Frischholz, a mineral dealer from Munich, authors a detailed description of the emerald material.
Summer 1861	Jeweler Samuel Goldschmidt undertakes an excursion to the Habachtal locality, assisted by Bergrath M.V. Lipold from the Austrian geological survey.
February 1862	Samuel Goldschmidt purchases from the government the parcel containing the Habachtal occurrence.
Starting in 1862	For several years under Goldschmidt's ownership, emerald recovery is pursued, first using open-pit methods and later digging three tunnels.
1871	Goldschmidt dies. Ownership of the Habachtal property transfers to his daughters Jeanette and Friederike, and the site is leased for a few years to third-party operators.
March 1894	Albert Brandeis, Jeanette's husband, purchases Friederike's half of the property.
1894	After being contacted by Albert Brandeis, representatives of Leveson, Forster & Co. from London visit the Habachtal site in view of a possible investment.
1895	Preliminary mining activities at Habachtal are undertaken on behalf of Leveson, Forster & Co.
May 1896	The Habachtal property is purchased by the London-based Emerald Mines Limited, an entity established earlier that year with a board of directors comprising members of the Leveson and Forster families, as well as Albert Brandeis. The purchase price is paid in shares of the new company.
1896–1902	Under the control of Leveson, Forster & Co., Emerald Mines Limited exploits the emerald deposit for several years via four tunnels, with on-site operations guided by English and Austrian mining engineers.
1902–1906	Administrative and legal proceedings are instigated by Austrian authorities questioning the regulatory propriety of Emerald Mines Limited's activities at Habachtal.
1905	Spargo & Sons from Liverpool investigates the Habachtal property at the behest of the Manchester-based Northern Mercantile Corporation, which is considering an acquisition.
1906	Northern Mercantile Corporation purchases the shares of Emerald Mines Limited, with all members of the Leveson and Forster families ceasing involvement and only Albert Brandeis formally remaining a director.
1906 and possibly 1907	Mining activities are renewed and pursued on a limited basis under the control of Northern Mercantile Corporation.
1909–1911	Certain transactions involving shares of Emerald Mines Limited and purported Habachtal emeralds, an Austrian prince, and directors William King and Leslie Clark erupt in financial scandal and litigation.
January 1913	The Habachtal property is transferred by the court in Mittersill to the municipality of Bramberg, as a consequence of outstanding liabilities.
December 1913	The Habachtal property is purchased by a group of three farmers and municipal leaders from Bramberg (Alois Kaserer, Johann Blaikner, and Peter Meilinger).
October 1916	Austrian citizen Anton Hager purchases the Habachtal property.
1917–1919	Hager considers mining for both emerald and talc, searching for a partner to invest alongside him in the Habachtal property.
September 1920	Hager sells a one-half interest in the property to his half-brother Peter Staudt.
1921–1927	Investigation of mining prospects proceeds, with inspection reports, chemical analyses, and a business plan being prepared to target not only emerald but also industrial talc production. However, the extensive investment for the talc operations is never made and only emerald mining occurs, with Max Brennekam responsible for activities on site. Anton Hager Jr. draws the first detailed maps of the C and D galleries.
October 1927	Ownership of the Habachtal property is transferred to the Swiss firm Aktiengesellschaft für modernen Bergbau, located in Chur, with the price to be paid in two installments. Max Brennekam stays on, working for the company in 1927 and 1928.

TABLE 2 (continued). History of emerald mining in Habachtal.

Date	Event
October–November 1928	Hager and Staudt initiate foreclosure proceedings because the second installment of the purchase price remained unpaid, but auction is avoided when Aktiengesellschaft für modernen Bergbau receives a loan from Hans Streubert of Munich. Streubert then transfers his interest in the loan to Max Gaab and Meta Geist from Munich.
December 1928	Smaragd-Bergbau Habachtal GmbH is founded in Austria to serve as the local operating entity for the Swiss Aktiengesellschaft für modernen Bergbau. Streubert, working from Munich, leads the new firm.
1928–1931	Wilhelm Müller is initially hired for trial mining and evaluation, and the period sees a dubious call for investors, consideration of mining for three targets (emeralds, beryllium ore, and talc), further loans from Max Gaab and Florian Prader, and limited actual mining activities. Aktiengesellschaft für modernen Bergbau also becomes the subject of a Swiss bankruptcy proceeding that terminates after three days without dissolution.
1930–1934	Multiple exploration permits are registered and later prolonged in the Habachtal area by Julius Burger from Munich in the name of the painter Christian Schad from Berlin.
1932	Hugo Ullhofen is named receiver of the Habachtal property by the Mittersill court, and he in turn leases the mine to the Italian Angelo De Marchi.
1932–1933	A web of litigation and administrative proceedings ensues in the wake of efforts by several groups of associates seeking to pursue interests in and control over the Habachtal mine, with prominent names being Schad/Burger, De Marchi/Ullhofen, Gaab/Geist, and Prader.
August 1933	Gaab, Geist, and Prader become owners of the Habachtal property upon purchase at a foreclosure auction.
June 1934	A new Swiss entity Smaragd Aktiengesellschaft is established in Schaffhausen, with initial shareholders consisting of Schad, Burger, Gaab, Geist, and Prader. Gaab, Geist, and Prader lease the Habachtal property to the company.
1935–1939	Smaragd Aktiengesellschaft undertakes limited mining activities.
December 1940	The shareholders of Smaragd Aktiengesellschaft dissolve the company.
1946	With Gaab having acquired Prader's one-third interest in the Habachtal property in the early 1940s, Hans Zieger starts limited mining activities under a contract with Gaab. Zieger is also named administrator of the property by the U.S. Allied Commission for Austria.

For a summary of ownership transitions after 1950 and an overview of present mining activities, see the article text.

and disappointments (see table 2). The property was held by the state in the first half of the nineteenth century and sold in 1861 to jeweler Samuel Goldschmidt from Vienna, who was the first to undertake systematic recovery of emeralds. Open-pit activities began in 1862, followed by tunneling, but efforts were canceled after a few years of limited success. In 1896, Goldschmidt's heirs sold the Habachtal property to the British firm Emerald Mines Limited, which in turn was owned or controlled by a succession of two different British groups. The first, from 1896 to 1906, was the London-based diamond merchant Leverson, Forster & Co. and individuals connected therewith. Mining was performed in the summer months for seven or eight years, with some intervening inactive seasons. Legal troubles led to the transfer of shares in 1906 to the Northern Mercantile Corporation Limited of Manchester. Under new leadership, only limited mining without great success was pursued in 1906 and possibly 1907. By 1913, mounting liabilities, particularly to the munic-

ipality of Bramberg, resulted in the mine being returned to public ownership before being resold in the ensuing decades to a series of Austrian, German, and Swiss private individuals and entities.

After World War I, mining recommenced under Hager, an Austrian citizen, and his half-brother Staudt, a German citizen, with the production of talc for industrial purposes also being considered. Detailed geological reports of the locality and business plans were prepared, but the requisite investment for actualization never materialized. In late 1927, the property was purchased by the Swiss firm Aktiengesellschaft für modernen Bergbau. The outcome, however, was just one month of mining in 1927 and a few weeks in 1928 and 1929 before liabilities and legal troubles overtook any hope of a sustainable business. Rivalries between multiple groups interested in the property and its prospects, not only for emeralds but also for beryllium as an ore mineral, erupted in a welter of litigation and regulatory proceedings. Key players included the team of Schad and Burger, who were

particularly active in seeking exploration permits; Gaab, Geist, and Prader, who held liens in the property as a consequence of extending loans to Aktiengesellschaft für modernen Bergbau; and the Italian investor De Marchi, to whom the property had been leased in 1932 by the court-appointed receiver Ullhofen. In the midst of the litigation and administrative actions, De Marchi was only able to engage in active mining for the single 1932 season.

Eventually, a foreclosure initiated by Gaab and Geist resulted in a public auction in 1933, where the property was purchased by Gaab, Geist, and Prader, with ownership thereafter held in three equal shares. Another Swiss entity, Smaragd Aktiengesellschaft, was established in 1934 in Schaffhausen, with the majority of those individuals pursuing mining at Habachtal joining together as shareholders. Notably, Schäd contributed a number of exploration permits, while Gaab, Geist, and Prader leased the property to the company. Nonetheless, only limited production efforts were undertaken between 1935 and 1939, terminating in 1940 with the common refrain of insolvency and the dissolution of Smaragd Aktiengesellschaft. Control of the property narrowed down to the three owners Gaab, Geist, and Prader, before subsequently being consolidated in the Gaab family. The Habachtal property finally ended up as private German property, maintained today by the Steiner family from Bramberg.

In summary, it appears that from 1862 to 1939, active mining took place at Habachtal only during a series of relatively brief and disjointed periods:

1. For a few years starting in 1862 by Goldschmidt via open-pit methods and later tunneling
2. In the 1870s by lessees contracting with Goldschmidt's heirs
3. From 1896 to 1902 by the British entity Emerald Mines Limited under the control of Leverton, Forster & Co., which worked underground using four galleries
4. In 1906 and possibly into 1907 by the Emerald Mines Limited under the control of Northern Mercantile Corporation Limited
5. Intermittently between 1920 and 1927 by Hager and Staudt
6. Briefly in 1927 and 1928 or 1929 by the Swiss firm Aktiengesellschaft für modernen Bergbau
7. In 1932 by De Marchi
8. From 1935 to 1939 by the Swiss entity Smaragd Aktiengesellschaft

The success of any of the eras, and the broader question of the value of the Habachtal property for mining purposes, are difficult to intuit from the historical record left behind. Problems in that regard derive both from the backgrounds of the principals and from the disparate purposes underlying different reports or appraisals. As to the participants, it is notable that only Goldschmidt and the London-based diamond merchants had deep roots in and knowledge of the gemstone market. Later owners and directors were merchants hailing from other fields—bankers, civil engineers, and attorneys—who in turn were assisted by civil, technical, and mining engineers, geologists, and mine foremen. Notably absent were any skilled gem merchants truly able to assess the commercial value of the mined rough.

Concerning the different purposes of reports and appraisals, there is a marked divergence between figures or values offered in a regulatory sphere versus an investment setting. For example, Emerald Mines Limited reported to the mining administration that material was nearly worthless to minimize payment of taxes and fees. Mining administrator Aigner took a similar view, commenting that emerald mining in Habachtal had never been profitable. Leitmeier reported the same, but his remarks might have been biased toward starting commercial production of beryl as an ore mineral. The counterpoint provided by figures aimed at drawing investment is dramatic. By way of examples, in 1920 Autzinger estimated production of 5 kg of export-quality emeralds per week, and in 1930 Deutsch-Österreichische Edelsteinbergwerks Gesellschaft calculated profitability at several hundred thousand marks per year. Such inflated figures led to repeated financial failures for both companies and individuals, with perhaps only Müller's 1929 report having identified the real problem—only 2% of the emeralds recovered were of facet quality.

In the final analysis, it seems that between 1862 and 1939, emerald mining at Habachtal was only economical, at least in part, for brief periods under Leverton, Forster & Co. and De Marchi. That said, it is likely that even with the limited quantity of gem-quality rough, small-scale mining guided by experienced mining engineers or geologists, combined with distribution of emeralds in matrix for collectors and facet-quality rough for gem cutters by trade experts through the right channels, could have been profitable. That is the state of affairs at Habachtal today.

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