



## Crossing the Alps by Rail

### Section 1: Q. What was constructed in Austria in the middle of the 19th century?

[19世紀中頃まで : U\_\_\_\_\_ t\_\_\_\_\_ m\_\_\_\_\_ -19\_\_\_\_\_ c\_\_\_\_\_ y], people had thought it was impossible to build a railway through the Alpsアルプス. Railway鉄道 engineering工学 was still very new [当時 : a\_\_\_\_\_ t\_\_\_\_\_ t\_\_\_\_\_]. The Alps were [困難な環境 : a\_\_\_\_\_ c\_\_\_\_\_ l\_\_\_\_\_ g\_\_\_\_\_ g\_\_\_\_\_ e\_\_\_\_\_ r\_\_\_\_\_ m\_\_\_\_\_ t], with [急な険しい傾斜 : s\_\_\_\_\_ s\_\_\_\_\_ s] and very high places. However, [何年もの計画の後 : a\_\_\_\_\_ y\_\_\_\_\_ s\_\_\_\_\_ o\_\_\_\_\_ p\_\_\_\_\_ g], almost 20,000 people worked [手で : \_\_\_\_\_ h\_\_\_\_\_] for six years [不可能を達成するために : to a\_\_\_\_\_ t\_\_\_\_\_ i\_\_\_\_\_]. As a result, the world's first mountain railway [建設された : was c\_\_\_\_\_ ed] [ウィーンの南西に : \_\_\_\_\_ the s\_\_\_\_\_ w\_\_\_\_\_ Vienna], the [首都 : c\_\_\_\_\_] of Austriaオーストリア. [今日に至るまで : T\_\_\_\_\_ t\_\_\_\_\_ d\_\_\_\_\_], the Semmering Railwayゼメリング鉄道 [注目すべき偉業であり続けている : r\_\_\_\_\_ s\_\_\_\_\_ a\_\_\_\_\_ r\_\_\_\_\_ m\_\_\_\_\_ k\_\_\_\_\_ a\_\_\_\_\_ m\_\_\_\_\_] in engineering that [~と美しい調和を形成している : f\_\_\_\_\_ s\_\_\_\_\_ a\_\_\_\_\_ b\_\_\_\_\_ l\_\_\_\_\_ h\_\_\_\_\_ m\_\_\_\_\_ w\_\_\_\_\_] the Alps' natural environment.

### Section 2: Q. Why did Ghega travel in Europe and the United States?

The Semmering Railway project [設計されそして指揮された : was d\_\_\_\_\_ ed and d\_\_\_\_\_ ed] by Karl Ritter von Ghegaカール・リッター・フォン・ゲーガ. He was born in 1802 in Veniceヴェニス, Italy. [18歳の時に : At t\_\_\_\_\_ a\_\_\_\_\_ 18], he became [数学博士 : a d\_\_\_\_\_ of mathematics] and [働き始めた : b\_\_\_\_\_ his c\_\_\_\_\_ r] in road and hydraulic水力 engineering工学. To learn more about railway engineering, he traveled in Europe and the United States. [彼は1842年のほとんど全てを北米で鉄道と橋を研究するのに費やした : He s\_\_\_\_\_ a\_\_\_\_\_ t\_\_\_\_\_ a\_\_\_\_\_ 1842 in North America s\_\_\_\_\_ d\_\_\_\_\_ railroads and bridges]. He [特に~に注意を払った : p\_\_\_\_\_ p\_\_\_\_\_ t\_\_\_\_\_ r\_\_\_\_\_ a\_\_\_\_\_ t\_\_\_\_\_ n\_\_\_\_\_ t\_\_\_\_\_] the new Baltimoreボルティモア and Ohioオハイオ Railroad, which went through the Alleghenyアレゲーニー Mountains山脈. The high quality of the railway construction and [アメリカの機関車の力 : the p\_\_\_\_\_ r\_\_\_\_\_ of American l\_\_\_\_\_ m\_\_\_\_\_ v\_\_\_\_\_ s] [彼に大きく感銘を与えた : g\_\_\_\_\_ y\_\_\_\_\_ i\_\_\_\_\_ ed him]. [当時 : I\_\_\_\_\_ t\_\_\_\_\_ d\_\_\_\_\_], American engineers were using [世界の最も進歩した技術の幾つか : s\_\_\_\_\_ o\_\_\_\_\_ the w\_\_\_\_\_ 's m\_\_\_\_\_ a\_\_\_\_\_ c\_\_\_\_\_ t\_\_\_\_\_ n\_\_\_\_\_ s].

### Section 3: Q. Why was building a railway through the Semmering Pass thought to be impossible?

[1840年台初頭に : I\_\_ t\_\_ e\_\_\_\_\_ 1840\_\_], Ghega was given [国道を作る任務 : the t\_\_\_\_\_ o\_\_ b\_\_\_\_\_ a n\_\_\_\_\_ l w\_\_\_\_] in Austria. The government wanted to build [ウィーンを今日のイタリアにある湾口都市トリエステに繋ぐ鉄道 : a r\_\_\_\_\_ w\_\_\_\_\_ c\_\_\_\_\_ t\_\_\_\_\_ g Vienna \_\_\_\_\_ the p\_\_\_\_\_ c\_\_\_\_\_ y o\_\_\_\_\_ Trieste in m\_\_\_\_\_ n- d\_\_\_\_\_ I\_\_\_\_\_], which was [その帝国にとって重要な商業と海軍の中心地 : an important b\_s\_\_\_\_\_ and n\_\_\_\_\_ c\_\_\_\_\_ r for the e\_\_\_\_\_]. However, this railway would have to cross the Semmering Pass, [985mもの高さに達するアルプスの一部 : a p\_\_\_\_\_ o\_\_\_\_\_ the Alps that r\_\_\_\_\_ es a\_\_\_\_\_ h\_\_\_\_\_ 985 m\_\_\_\_\_ s]. [そのような(一つの)場所に(その)必要なトンネルと橋を建設することは、当時の技術では、不可能だと考えられていた : B\_\_\_\_\_ g the n\_\_\_\_\_ y t\_\_\_\_\_ s and bridges in s\_\_\_\_\_ a l\_\_\_\_\_ c\_\_\_\_\_ n was c\_\_\_\_\_ s\_\_\_\_\_ t\_\_\_\_\_ b\_\_\_\_\_ i\_\_\_\_\_ p\_\_\_\_\_ e w\_\_\_\_\_ the t\_\_\_\_\_ n\_\_\_\_\_ y o\_\_\_\_\_ the t\_\_\_\_\_]. Only [馬に引かれる車、四輪馬車 : h\_\_\_\_\_ -d\_\_\_\_\_ n c\_\_\_\_\_ r\_\_\_\_\_ a\_\_\_\_\_ s] could move across this [過酷な山岳地域 : r\_\_\_\_\_ h m\_\_\_\_\_ t\_\_\_\_\_ n\_\_\_\_\_ s a\_\_\_\_\_], people thought. But Ghega [この挑戦を受けて立った : a\_\_\_\_\_ ed this c\_\_\_\_\_ l\_\_\_\_\_ g\_\_\_\_\_].

### Section 4: Q. Why wasn't Ghega's proposal immediately accepted?

Although the project would [当然 : c\_\_\_\_\_ t\_\_\_\_\_ l\_\_\_\_\_] be difficult, Ghega [~を思いついた : c\_\_\_\_\_ u\_\_\_\_\_ w\_\_\_\_\_] a plan for the Semmering Railway that would [~を最大限に活用する : m\_\_\_\_\_ the m\_\_\_\_\_ o\_\_\_\_\_] locomotive technology. [彼は最初に彼の提案を国立鉄道の局長に提出した : He f\_\_\_\_\_ t s\_\_\_\_\_ m\_\_\_\_\_ ed his p\_\_\_\_\_ p\_\_\_\_\_ l\_\_\_\_\_ t\_\_\_\_\_ the d\_\_\_\_\_ r of st\_\_\_\_\_ e railway], but [それはすぐには受け入れられなかった : it was not i\_\_\_\_\_ d\_\_\_\_\_ y a\_\_\_\_\_ ed]. [その遅れの理由の一つ : 0\_\_\_\_\_ o\_\_\_\_\_ the r\_\_\_\_\_ f\_\_\_\_\_ the d\_\_\_\_\_ y] was that [このようなものは以前になされたことがなかった : n\_\_\_\_\_ li\_\_\_\_\_ this h\_\_\_\_\_ b\_\_\_\_\_ d\_\_\_\_\_ b\_\_\_\_\_ e]. For example, [その計画は1,430mの長さの主トンネルを要した : the p\_\_\_\_\_ t r\_\_\_\_\_ q\_\_\_\_\_ d a 1,430-m\_\_\_\_\_ r- l\_\_\_\_\_ g main tunnel], but there were no [前例 : p\_\_\_\_\_ s e\_\_\_\_\_ s] of such long tunnels. However, [1848年のウィーンでの革命は、その帝国の他の地域への増加した移動につながった(≒交通量が増加した) : the 1848 r\_\_\_\_\_ l\_\_\_\_\_ n in Vienna l\_\_\_\_\_ t\_\_\_\_\_ i\_\_\_\_\_ d t\_\_\_\_\_ v\_\_\_\_\_ l\_\_\_\_\_ to other a\_\_\_\_\_ s of the e\_\_\_\_\_ e], so [鉄道の必要性 : the n\_\_\_\_\_ f\_\_\_\_\_ a r\_\_\_\_\_] also increased. [このことは、ゲーガの提案を最後まで遂行するするための、大きな動機を提供した : This p\_\_\_\_\_ v\_\_\_\_\_ d a b\_\_\_\_\_ i\_\_\_\_\_ t\_\_\_\_\_ f\_\_\_\_\_ f\_\_\_\_\_ l\_\_\_\_\_ g t\_\_\_\_\_ h w\_\_\_\_\_ Ghega's p\_\_\_\_\_ p\_\_\_\_\_ l\_\_\_\_\_].

### Section 5: What happened to the workers during the construction of the railway?

Construction of the Semmering Railway [ついに : f\_n\_\_\_\_\_] began on July 27, 1848. [誰もが予想したように : A\_e\_r\_o\_h\_e\_p\_\_\_\_\_], the project was [信じられないくらい困難だ : u\_b\_\_\_\_\_v\_\_\_\_\_y h\_\_\_\_\_]. [当初 : A\_the b\_\_\_\_\_g], there were about 5,000 workers but [後には : l\_\_\_\_\_] 20,000 were working on the railway. [今日使用されている (ような) 爆発物と先進的なトンネルを掘る機器は、19世紀には存在しなかった : The e\_p\_s\_\_\_\_\_s and a\_v\_c\_\_\_\_\_t\_\_\_\_\_l-d\_\_\_\_\_ing e\_i\_m\_\_\_\_\_t used today did not e\_\_\_\_\_t in t\_\_\_\_\_19\_\_\_\_\_c\_\_\_\_\_y], so the workers had to [建築の全てを手で行う : do a\_\_\_\_\_t\_\_\_\_\_c\_\_\_\_\_s\_\_\_\_\_t\_\_\_\_\_n b\_\_\_\_\_h\_\_\_\_\_]. The work was hard and dangerous. On October 27, 1850, [落石 : f\_\_\_\_\_g r\_\_\_\_\_s] killed 14 of the workers. Between 1850 and 1852, [鉄道で働いていたおよそ750人の人々がコレラやチフスなどの病気で殺された : s\_\_\_\_\_750 people w\_\_\_\_\_the railway w\_\_\_\_\_k\_\_\_\_\_by d\_\_\_\_\_s\_\_\_\_\_cholera and typhoid] .

### Section 6: Why did Ghega's construction ideas reflect, and what did they make use of?

[その困難にも関わらず : I\_s\_\_\_\_\_the d\_\_\_\_\_ies], Ghega's vision was [実現された : r\_\_\_\_\_d]. His ideas for the construction of the railway [自然環境との調和への配慮を反映していた : r\_\_\_\_\_ed c\_\_\_\_\_n f\_\_\_\_\_h\_\_\_\_\_w\_\_\_\_\_the n\_\_\_\_\_e\_\_\_\_\_] and [最新技術を利用した : m\_\_\_\_\_u\_\_\_\_\_the l\_\_\_\_\_t\_\_\_\_\_ies]. He [鉄と鋼鉄の使用を却下した : r\_\_\_\_\_ed the u\_\_\_\_\_i\_\_\_\_\_and s\_\_\_\_\_], and [代わりに : i\_\_\_\_\_] used [レンガと石 : b\_\_\_\_\_and stone] to build [重要な建造物のほとんど : m\_\_\_\_\_the i\_\_\_\_\_s\_\_\_\_\_s]. [6,500万個近くのレンガ : N\_\_\_\_\_65 m\_\_\_\_\_b\_\_\_\_\_s] and 80,000 stones were used. [道中の駅と建物の多くは、建設からの廃棄素材を使って建てられた : M\_\_\_\_\_the stations and buildings a\_\_\_\_\_t\_\_\_\_\_w\_\_\_\_\_were b\_\_\_\_\_u\_\_\_\_\_w\_\_\_\_\_m\_\_\_\_\_l f\_\_\_\_\_the c\_\_\_\_\_n].

### Section 7: Q. What kind of changes did the Semmering Railway bring to the Alps?

〔ついに : F\_\_\_\_\_〕, 〔最初の試験 (≒試運転) が行われた : the f\_\_\_\_\_ t\_\_\_\_\_ s w\_\_\_\_\_ r\_\_\_\_\_〕 in October 1853, and in July 1854 〔最初の乗客が旅行した (≒列車に乗った) : the first p\_\_\_\_\_ s m\_\_\_\_\_ the j\_\_\_\_\_〕. People could finally cross the Alps 〔たったの2時間で : \_\_\_\_\_ j\_\_\_\_\_ two hours〕. 〔総路線は41,825mを網羅した : T\_\_\_\_\_ t\_\_\_\_\_ r\_\_\_\_\_ c\_\_\_\_\_ed 41,825 m\_\_\_\_\_s〕. Its highest point was 898 meters, 〔当時、鉄道が建設された、それまでで一番高い高度 : the highest a\_\_\_\_\_ a w\_\_\_\_\_ a railway h\_\_\_\_\_ e\_\_\_\_\_ b\_\_\_\_\_ b\_\_\_\_\_ a\_\_\_\_\_ the t\_\_\_\_\_〕. 〔ゼメリング鉄道は、生活をより便利にしただけでなく、それはまたアルプスの自然の美しさを増幅した (倒置) : N\_\_\_\_\_ d\_\_\_\_\_ the Semmering Railway m\_\_\_\_\_ l\_\_\_\_\_ m\_\_\_\_\_ c\_\_\_\_\_ , b\_\_\_\_\_ it a\_\_\_\_\_ e\_\_\_\_\_ d the n\_\_\_\_\_ b\_\_\_\_\_ of the Alps〕. The stone viaducts<sup>高架橋</sup> and other structures 〔その鉄道に絵葉書のスタイルの美しさを与えた : g\_\_\_\_\_ the railway a p\_\_\_\_\_ -c\_\_\_\_\_ s\_\_\_\_\_ b\_\_\_\_\_〕, 〔それらは世界中から観光客を引き寄せた (非制限用法) : w\_\_\_\_\_ a\_\_\_\_\_ ed t\_\_\_\_\_ s from a\_\_\_\_\_ o\_\_\_\_\_ the w\_\_\_\_\_〕. The viaduct across Kalte Rinne is 〔特に美しい : p\_\_\_\_\_ beautiful〕, and has often been 〔特集される : f\_\_\_\_\_ d〕 in photographs and paintings.

### Section 8: Q. What role does the Semmering Railway play today?

〔ゼメリング鉄道が完成させられて (≒完成して) 以来、150年以上が経過した : 0\_\_\_\_\_ 150 y\_\_\_\_\_ \_\_\_\_\_ p\_\_\_\_\_ s\_\_\_\_\_ the Semmering Railway w\_\_\_\_\_ c\_\_\_\_\_〕. 〔今日においてすらも : E\_\_\_\_\_〕 it 〔~のままである : s\_\_\_\_\_ r\_\_\_\_\_s〕 both an important transportation route and a wonderful 〔観光 (の目的) 地 : s\_\_\_\_\_ s\_\_\_\_\_ g d\_\_\_\_\_ n\_\_\_\_\_n〕. Visitors can take the train from Austria to Italy and enjoy 〔息を呑むような景色 : b\_\_\_\_\_ g s\_\_\_\_\_〕 〔道中で : a\_\_\_\_\_ the w\_\_\_\_\_〕. Three of the twenty-six miles (42 kilometers) of the journey are through tunnels, and 〔1マイルは高架橋で構成されている : one mile \_\_\_\_\_ c\_\_\_\_\_ viaducts〕. 〔建築物は自然環境と調和しているべきだという彼の構想により : F\_\_\_\_\_ his v\_\_\_\_\_ n t\_\_\_\_\_ a\_\_\_\_\_ t\_\_\_\_\_ should b\_\_\_\_\_ h\_\_\_\_\_ y w\_\_\_\_\_ the n\_\_\_\_\_ l e\_\_\_\_\_ t〕, Ghega was 〔ナイト爵位を授けられた : k\_\_\_\_\_ed〕 in 1851 and for many years his picture was on the Austrian 20 shilling シリング (通貨単位) 〔紙幣 : n\_\_\_\_\_〕. In 1998, 〔ゼメリング鉄道はユネスコにより世界遺産地として指定された世界初の鉄道となったが : the Semmering Railway b\_\_\_\_\_ the f\_\_\_\_\_ railway t\_\_\_\_\_ b\_\_\_\_\_ n\_\_\_\_\_ by UNESCO \_\_\_\_\_ a World H\_\_\_\_\_ Site〕.