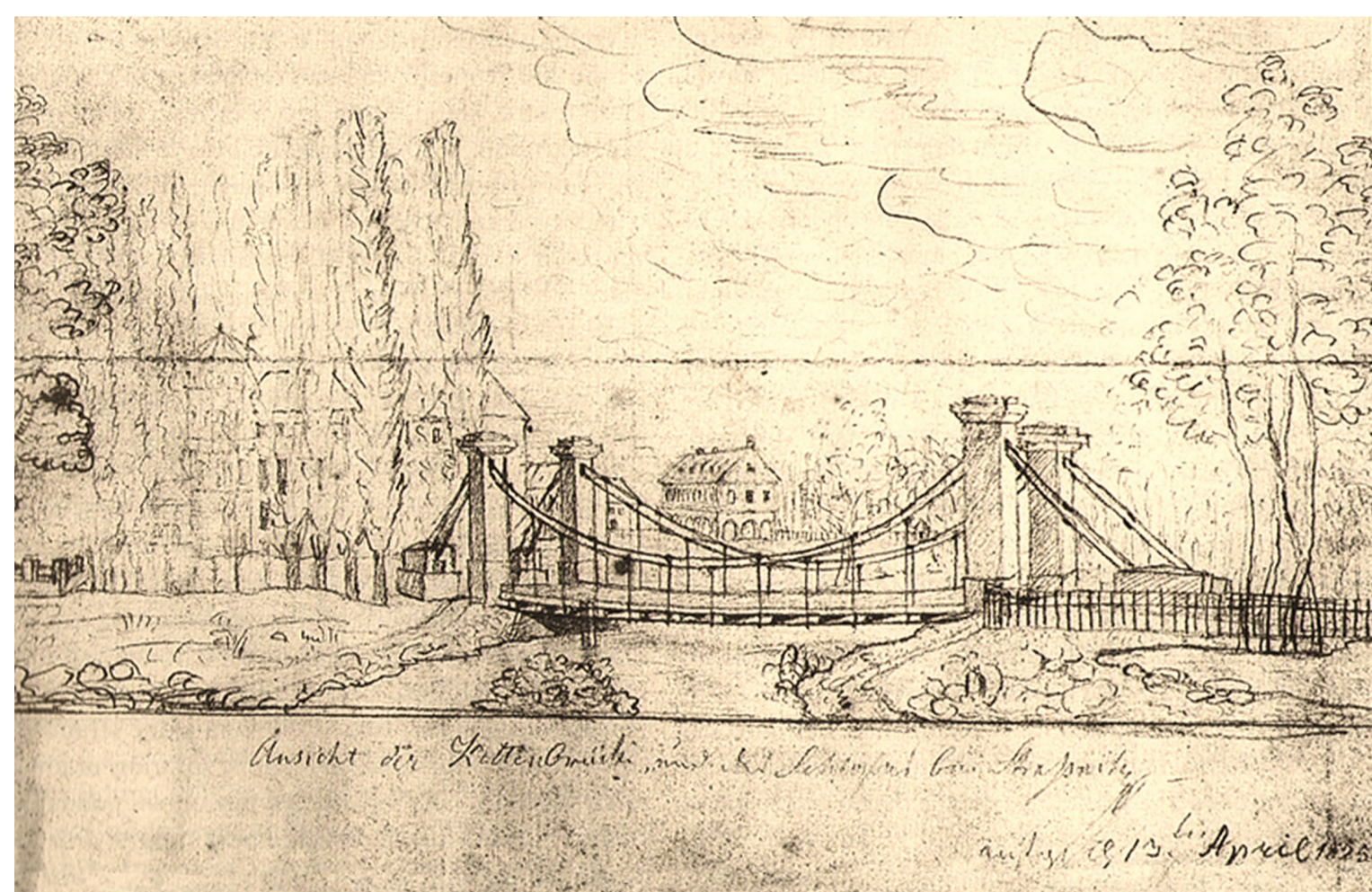
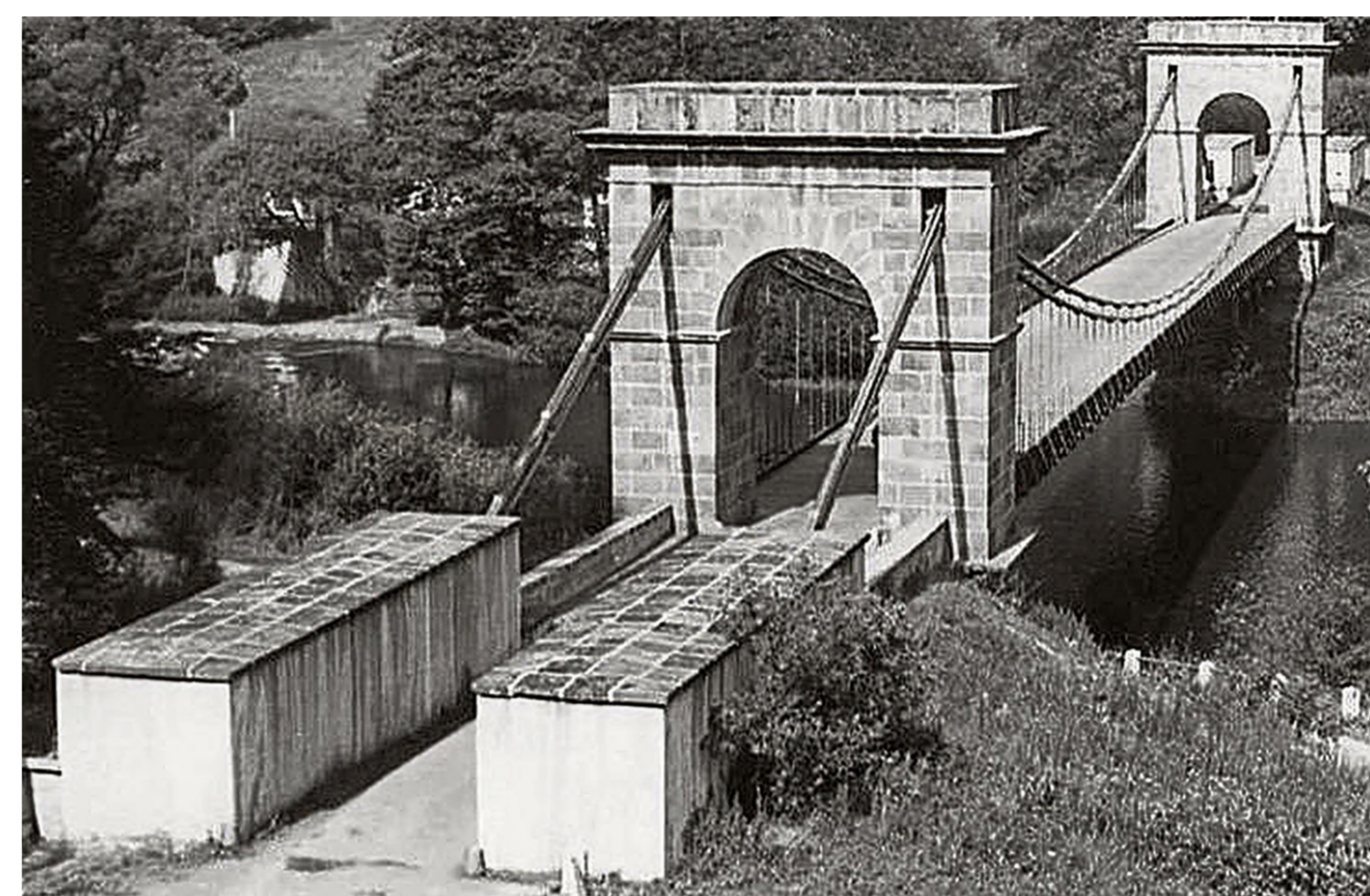


First metal bridges – suspension chain bridges

Metal bridges began to be built in the Czech lands (nowadays the Czech Republic; former Kingdom of Bohemia, Margraviate of Moravia, Duchy of Silesia) in the first half of the 19th century. The first metal chain bridge in continental Europe was designed in 1823 by Friedrich Schnirch (1791, Bohemia -1868, Austria), completed in June 1824 in Strážnice (Moravia). This and other six bridges designed by Schnirch did not survive up to these days. However, the suspension bridge in Podolsko (over the River Vltava) designed by Schnirch and Gassner in 1847-1848 was disassembled in 1965, and moved 20 kilometers to a new location in Stádlec (over the River Lužnice) in 1975. This bridge is protected as a national cultural monument (more details in *panel 12* of this exhibition).



Drawing of the first chain bridge in continental Europe constructed by Schnirch in 1824 (drawing from 1825, author unknown)



Suspension bridge in Podolsko designed by Schnirch and Gassner in 1847-1848 (photo from 1920s, author unknown)

Cast iron bridges

Further development of metal bridges was related to the development of the railway network. Several **cast-iron** short span bridges constructed in 1860s (demolished in about the mid of 1980s) were built in Moravia (railroad Brno-Přerov-Olomouc) in order to carry road traffic over the railway tracks.

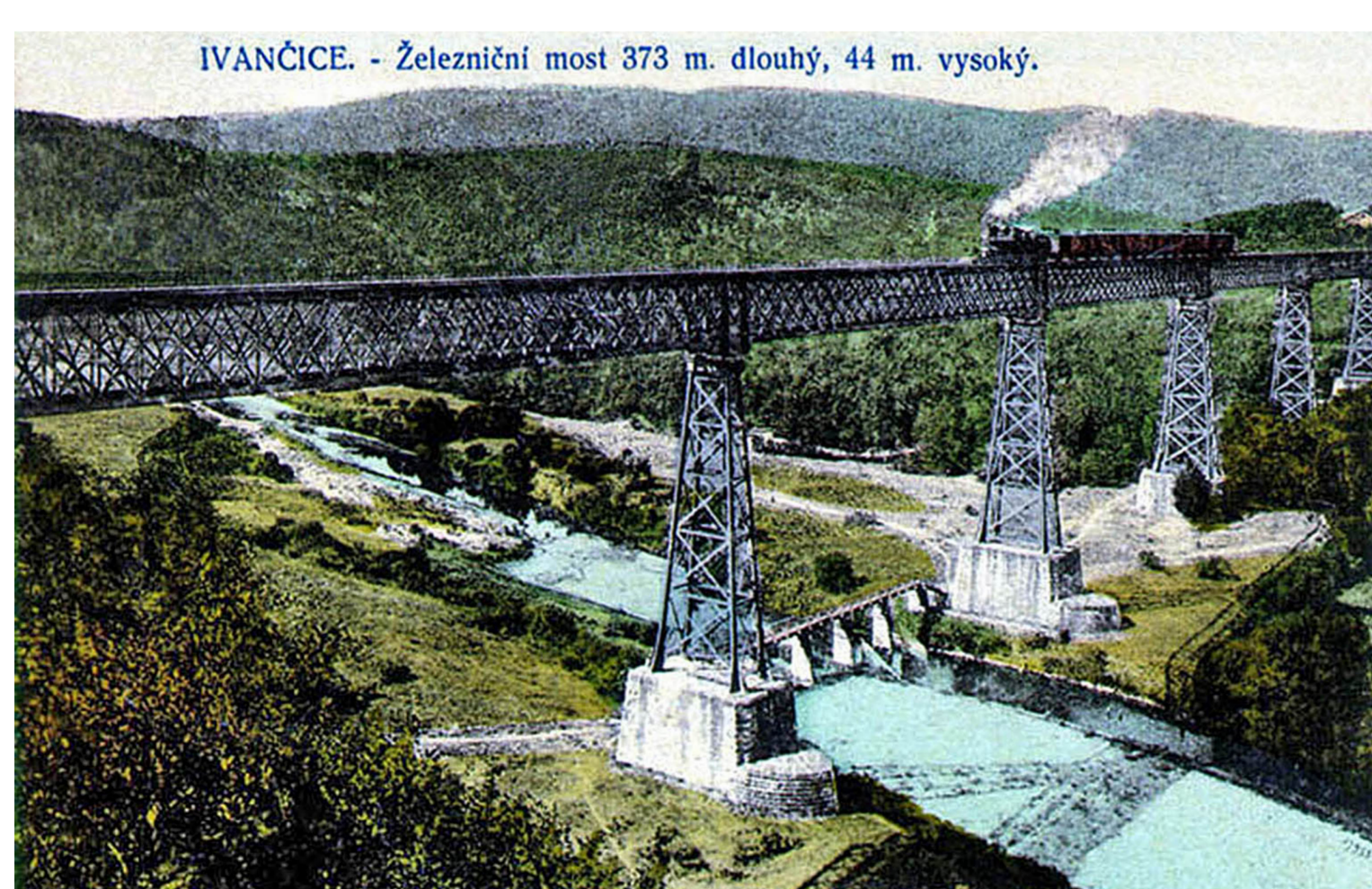


Cast iron bridge near Nemilany and Hoštěhrádky-Řešov



Wrought steel riveted bridges

Larger span bridges were constructed of **wrought steel** profiles joint by rivets. Riveting is the oldest method of joining steel elements, both to create the required cross-section and to assemble the whole bridge structure; riveting was used until the end of the 1950s. The oldest steel riveted bridges in Czechia date back to the second half of the 19th century, these are mainly truss railway bridges. The impressive example of a riveted wrought steel structure is the Ivančice viaduct dating from 1870, which was a part of the Ferdinand railway on the route Vienna – Brno over the valley of the River Jihlava. After more than 100 years of operation, a new parallel welded bridge was built in 1978. The original bridge was dismantled, leaving only one span as a cultural monument. Other important riveted railway bridges made of wrought iron include Prostřední Žleb, a bridge over the River Labe dating from 1874, which was the longest bridge (almost 240 m) of those times in Bohemia. In 1889 bridge over the Orlík reservoir near Červená nad Vltavou was built. Its middle span was the first one in the Austrian-Hungarian monarchy assembled without scaffolding. There were also number of riveted road bridges made of wrought steel, e.g. a truss bridge in Putim (1884), solid-web girder bridge in Jablonec nad Jizerou (1888), or a 1895 truss bridge in Žatec which replaced the previous suspension chain bridge designed by Schnirch in 1826.



Ivančice viaduct



Znojmo viaduct

Mild steel riveted bridges

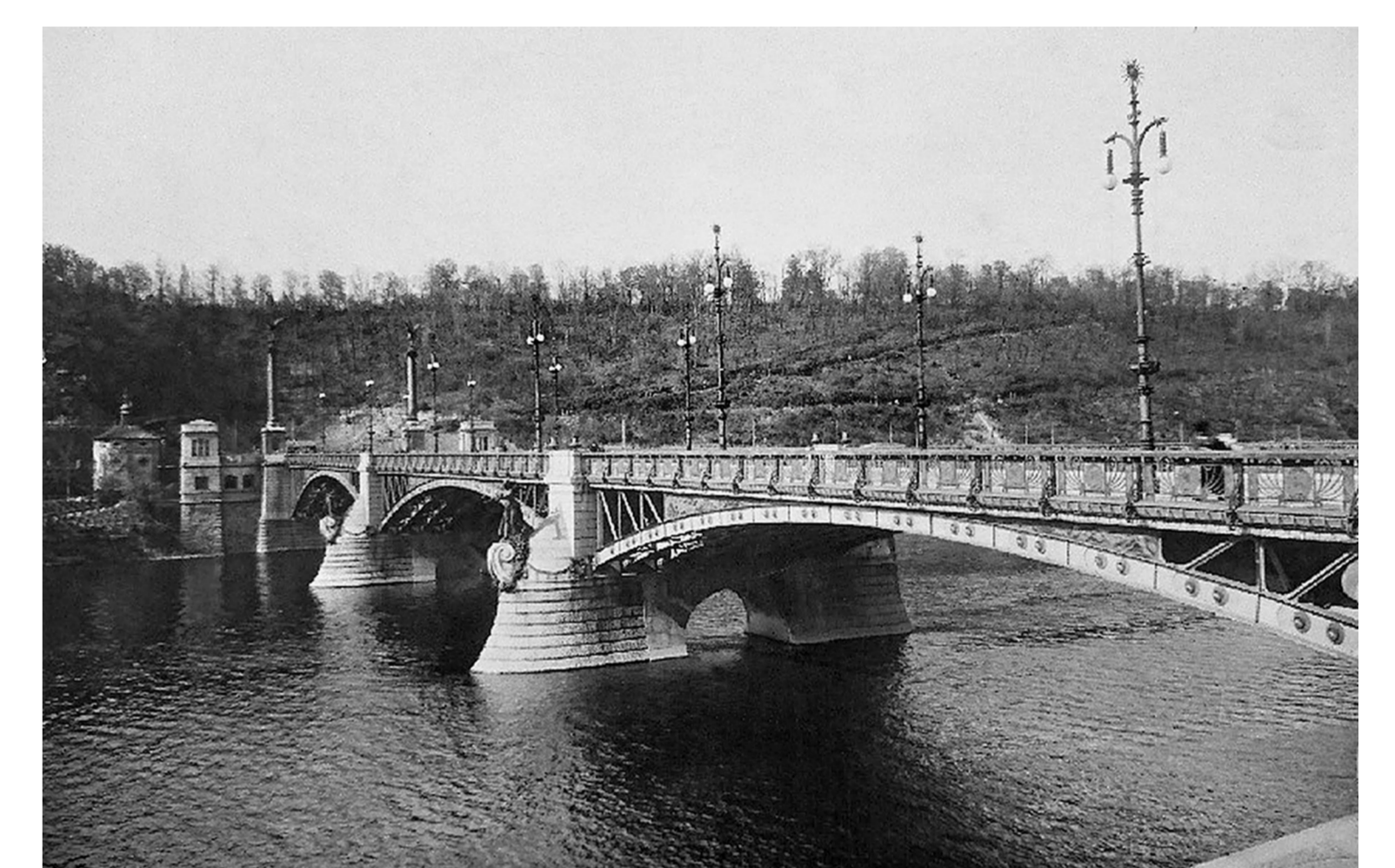
Since the beginning of the 20th century, wrought steel began to be replaced by **mild steel** (mild steel is a collective name for all steels made in the liquid state). A representative example of the early use of a mild steel structure is a 1901 double-track truss bridge with an upper parabolic chord below Vyšehrad in Prague. This bridge replaced previous single-track truss bridge with parallel chords, which connected the Prague railway stations on both banks of the Vltava River in 1871. In 1903 a truss bridge with a lower parabolic chord was built in Tábor as a part of the first electrified railroad track (between Tábor and Bechyně) in Central Europe (*panel 11*). Number of riveted road bridges made of mild steel were built since the beginning of the 20th century, an outstanding example is 1908 Čechův bridge (bridge of Svatopluk Čech) in Prague (*panel 13*) and a similar one span bridge Pražský most in Hradec Králové (1910). Just before the World War I, a spectacular 80m one-span truss bridge under Bohdalec in Prague and 92m three-span truss bridge in Ostrava were built.



Replacement of railroad bridge below Vyšehrad in Prague (1901)



Construction of Čechův most in Prague (1907-1908)



Truss bridge in Tábor (1903)
The first electrified railroad track in Central Europe



Truss bridge in Ostrava (1914)

Welded bridges

In 1933 the first welded arch bridge in the world was constructed in Pilsen (*panel 15*). The bridge at Žďákov over the Orlík Reservoir was built in 1957-1967 and at the time of its construction it was the largest steel simple solid-wall double-arch bridge in the world (*panel 16*).