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THE *BERLINKA*

A VISTULA-ODRA SHIP IN THE LANDSCAPE OF RIVERSIDE TOWNS

Having been weakened by wars and internecine strife in the second half of the 18th century, Poland was experiencing serious political and economic difficulties. So various reforms were undertaken in an attempt to lead the country out of the crisis. For example, publicists and members of the Polish Parliament (the Sejm) looked at river regulation, the construction of canals and river ships, and the organisation of shipping. In 1764, rivers came under the control of the Royal Treasury Commission, whose task was to guarantee their navigability; the Commission also prepared plans for regulating potentially navigable rivers and for canal construction¹. The designer of the first of these canals, which was to join the Vistula and Odra *via* the Rivers Brda and Noteć, was Franciszek Florian Czaki, a captain of artillery and geographer². With six locks, this canal was to be 3.5 m deep and 8.5 m wide. This new waterway was to serve merchants from the towns on the Odra (Oder) in their trade with Gdańsk (Danzig). But the project was never implemented.

In 1772, when economic reforms in Poland were beginning to produce an upturn in the country's fortunes, Russia, Prussia and Austria annexed some contiguous areas of Poland, with the aim of putting a stop to the country's resurgence. When taking these steps, Russia, not wishing to strengthen

¹ S. Gierszewski, *Wisła w dziejach Polski*, (1982), p. 138.

² *Ibidem*, p. 139.

Prussia, did not accept the latter's possible annexation of Gdańsk and Toruń (Thorn). In consequence, Prussia occupied the greater part of Pomerania, established state boundaries across the Vistula, and introduced customs barriers, effectively blocking access to Gdańsk, which remained in Poland. However, the initiator of the first partition of Poland, the Prussian King Frederick II, the Great, laid great emphasis on the need to control Gdańsk. As he said, "Whoever possesses the mouth of the Vistula and Gdańsk will be master of Poland to a greater extent than the king who rules her"³. But since he could not take over Gdańsk, his intention was to weaken both that city and Poland economically. To this end, he had cargoes shipped down the Vistula from Poland not to Gdańsk but to Elbląg (Elbing), Królewiec (Königsberg, now Kaliningrad) and Kłajpeda (Klaipeda, Memel). This embargo reduced the amount of cargo reaching the port of Gdańsk and ship movements within it declined. Moreover, in 1772–1775, the Prussians built the Bydgoszcz Canal, a new waterway linking the Odra with the Vistula via the Noteć, for the same reasons as had underpinned the earlier Polish project. This canal enabled ships to move from the Vistula to the Odra and thence to Szczecin (Stettin) and by the Finow Canal to Berlin. Thus, Franciszek Czaki's idea was implemented, but with the ships sailing in the opposite direction, from the Vistula to the Odra.

The ships traditionally used to transport goods on the Vistula and its tributaries were adapted solely to movements towards Gdańsk and Elbląg. The largest of these was the *szkuta*, which had a very broad (up to 8.5 m wide) spindle-shaped hull up to 38 m in length. These craft could carry up to 50 lasts of cargo (around 100 tons), mainly grain, which was transported in purpose-built containers in the central part of the hull⁴. A characteristic feature of the *szkuta* and other traditional Vistula ships was their spindle-like shape, as seen from above, and their flat bottom. The clinker-built, splayed sides were low. The stem post was fashioned from a beam and the stern was flat. The large rudder blade, permanently hinged from the transom, was operated by a long tiller from a platform in front of the shack-like superstructure. Downriver the ship moved without a sail, being carried by the current, whereas to move upriver, against the current, a square sail was hoisted, or else the crew towed the ship from the river bank with a rope

³ M. Wańkowicz, *Walczący Gryf*, (1963), p. 140.

⁴ A. W. Reszka, *Wiślane statki i techniki nawigacyjne od XVI do XX wieku*, (2012), p. 64.

attached to the mast about one-third of the way up. If the ship had to be rowed, up to ten oarsmen worked on either side in the fore part of the hull. Besides the *szkuta*, other smaller types of ship were built on Polish rivers. Not all of them were used for multiple voyages over a period of years; some, like the *komięga* and *galar*, were disposable, as we would say nowadays: they were built for just one trip, dismantled at their destination, where they were sold for timber⁵.

The inauguration in 1774 of the Bydgoszcz Canal, constructed in line with Prussian intentions, enabled ships from the Odra to reach the Vistula⁶. Much earlier, the proportions of their hulls and equipment had already been adapted to sailing the canals to Berlin. The sight of Odra ships at centres for the export of farm and woodland products on the Vistula spawned the idea of building similar vessels. On the Vistula they came to be known as *berlinkas* (German *Berlinerin*), since it was from that direction that they had arrived, and goods were mostly sent back the same way. By the end of the 18th century, the *berlinka*, being more economical and possessing excellent sailing characteristics, had superseded traditional Vistula rafting ships, especially the *szkuta* and *dubas*.

The appearance on the Vistula of more and more *berlinkas* undoubtedly accelerated canal construction in Poland. The first of these waterways was the Ogiński Canal, completed in 1783, linking the Rivers Niemen and Dnieper⁷. A year later, work on a second canal – the Royal Canal connecting the Bug with the Dnieper – was completed. In this way one could now sail from the Vistula not only to the Niemen but all the way down to (Cherson) the Black Sea⁸. Between 1824 and 1839 one more canal was built to connect the Vistula basin with the Niemen – today it is known as the Augustowski Canal⁹. According to needs, locks were constructed along these canals, their dimensions being similar to those on the canals around Berlin. The dimensions of the canals and locks determined the proportions of the ships built at that time.

⁵ Ibidem, p. 130.

⁶ T. Izajasz, D. Muszyńska-Leszczyńska, *Od Kanału Bydgoskiego do Kanału Finow – From the Bydgoszcz Canal to the Finow Canal*, (2017), p. 63.

⁷ Gierszewski, *Wisła*, pp. 138–139.

⁸ Ibidem, pp. 138–139.

⁹ Ibidem, p. 175.

The first versions of the *berlinka* – the Polish counterpart of the original Odra craft from the late 18th and early 19th centuries – differed in external appearance from the ships then plying the Odra. Besides other traditional rafting ships, this early *berlinka* design was recorded on the Vistula by the Austrian engineer Beneventus Losy von Losennau in the river port at Krzeszów near Sandomierz in 1796¹⁰. The craft known as a *berlinka* and, though displaying certain technical features borrowed from the Vistula *szkuta*, had a hull similar in shape to that of the Odra ships. The Austrian's drawing illustrates a *berlinka* with a narrow, clinker-built hull with splayed, parallel sides, resembling the designs used in traditional Vistula craft. Hence, we can regard the *berlinka* as the oldest version of a universal prototype river ship, which in subsequent years was gradually modified. However, the form of that craft's rig cannot be deduced unequivocally from von Losennau's drawing, although in his description of Vistula ships, he states that it was propelled by a square sail hoisted onto a spar. But the drawing of the ship's hull shows that the mast step was placed fairly close to the bows, so very likely a spritsail could also be hoisted on to it.

The technically advanced *berlinka*, known by this name only on navigable Polish rivers, especially the Vistula, was described by Hieronim Kostecki in 1817, with the aim of popularising their construction. His manuscript was acquired posthumously by the editors of the periodical *Izys Polska, or a diary of abilities, inventions, arts and crafts, devoted to our national industry and to the needs of rural and urban economies*, who published it in 1826¹¹. In his introduction to this work, the author explains the origin of the ship's appellation: "A *berlinka* is a water craft, known to us on the Rivers Narew, Noteć and Vistula because of its particular utility for navigation. It was initially built in Berlin, hence the name"¹².

The drawings of the *berlinka's* hull as presented by Kostecki, produced nineteen years after von Losennau's description of a Polish *berlinka*, now correspond to the Odra version of the ship, with characteristic pointed ends

¹⁰ K. Waligórska, *Konstrukcje statków pływających po Sanie i Wiśle w XVIII wieku*, in: *Kwartalnik Historii Kultury Materialnej*, 8, 2 (1960), pp. 229–241.

¹¹ H. Kostecki, *O budowie berlinek*, in: *Izys Polska, czyli Dziennik Umiejętności, Wynalazków, Kunsztów i Rękodzieł, Poświęcony Kraiowemu Przemysłowi, Tudzież Potrzebie Wiejskiego i Miejskiego Gospodarstwa*, 2, 2, 6 (1826), pp. 109–129.

¹² *Ibidem*, pp. 109–110.

to the hull; this version was known as a *szpicberlinka* (a pointed *berlinka*) on the Vistula. Another common version of the *berlinka* on the Vistula was the *kafówka*, that is, a *berlinka* with strongly upward sloping bows and stern. This was the typical 19th century Odra ship, the hull of which had carvel-built sides attached to frames almost perpendicularly to the bottom. The hull had to be strong, as light as possible and economical to build, so two types of timber were used for the sides: the first, bottom strake was of oak, the second of pine, the third again of oak, and the fourth and fifth of pine. In shape, this ship had characteristically flat, strongly upward sloping ends to the bows and stern (German *Kaffee*). The bows were higher, protruded a long way forwards, and the tip took the form of a slightly opened fan. The stern was lower and without the end being above deck level; this was because the space was needed to incorporate the downward-pointing pivot forming the short and only axis of the rudder. This distinctive, single axis maintained the balance between the rudder blade and tiller. Because canals were sailed, the rudder blade was shorter than those used on traditional Vistula ships¹³. The skipper's cabin lay aft, those of the *bosun* and sailor in the bows. The mast was set in a step at one-third of the hull's length measured from the bows. The hold was covered.

The larger *berlinkas* were also known as *wiślanka* or *kafówka* and the smaller ones as *kanalówka*, a canal-boat. On the Odra the same types of ship were known as *finówki* (German *Finow-Kaffeereisekahn*) because they were adopted to sail on the Finow Canal to Havel River and to Berlin) and also *Kaffenkahn*, *Oder-Spitzkahn*, *Oderkahn* or *Spitzkahn*¹⁴ (the Polish equivalents are *odrak*, *odrzak* and *szpicberlinka*). The *berlinka* was up to 35 m in length, was higher and narrower, and could carry twice the load of a *szkuta* of the same length. The popularity of the river ships known as *berlinkas* on the Vistula and its right-hand tributary, the Bug, is reflected in the rich technical documentation of this design stored at the Polish State Archives in Warsaw. The ship depicted on these drawings has the features of a *kafówka* and is technically advanced. They were produced around the mid-19th century in the Russian partition of Poland, which is why the labelling on them is in Polish and Russian¹⁵. These are probably the last

¹³ M. Sohn, *Kaffenkähne. Eine vergangene Binnenschiffsform*, (2013), pp. 10–13.

¹⁴ Reszka, *Wiślane statki i techniki nawigacyjne*, pp. 112–113.

¹⁵ *Ibidem*, p. 102.

designs of this kind of ship, the building of which was superseded at the end of the 19th century by steel and timber ships, known on the Vistula as *gabars* (from the French), though the name *berlinka* was also applied to them for a time.

In the second half of the 19th century, when ships of mixed iron and timber construction were being built, the sides of ships plying inland waters were perpendicular or almost so to the bottom (even in iron ships) with carvel planking. The basic means of propulsion, the spritsail was retained, and a second sail, a square one, could be hoisted on to a stay, so as to take full advantage of favourable winds. The spritsail improved the *berlinka's* maneuverability and safety, and the simplified rigging needed only a crew of three to handle (the skipper, *bosun* and sailor). In the 19th century the spritsail became a common means of propelling various kinds of craft sailing on Polish rivers.

The expansion of industry resulting from the harnessing of steam power, which took place in western Europe in the late 18th and early 19th centuries, had a great impact on inland navigation on Polish rivers. The first mechanically-propelled ships, designed specifically for river and canal transport, made their appearance¹⁶. The consequence of this was a more intense movement of goods in the Prussian than in the other two partitions and took place largely in two directions – westwards along the Bydgoszcz Canal to Berlin and northwards down the Vistula to Gdansk. Large quantities of round timber were rafted to Germany, and boards, pit props and telegraph poles were carried on *berlinkas*, often hauled by steamers¹⁷.

The rapid technical progress in the second half of the 19th century affected a great many aspects of everyday life. Advances were also being made in photography. Among the motifs often recorded up till that time by painters and graphic artists were riverside landscapes, sumptuous buildings with boulevards, and of course, rafts, boats and ships. In the second half of the 19th century, painters continued their efforts, but they were facing increasing competition from photographers, whose record shots were now being used not only in albums but also for the rapidly increasing numbers of picture postcards printed. These frequently depicted townscapes, often photographed from across a river, with *berlinkas* – the commonest type of

¹⁶ W. Arkuszewski, *Wiślane statki pasażerskie XIX i XX wieku*, (1973), pp. 48–60.

¹⁷ Reszka, *Wiślane statki i techniki nawigacyjne*, pp. 107–108.

ship on central European inland waters in the 19th century – moored to quaysides or under sail.

Translated by Peter Senn

BERLINKA

STATEK WIŚLANO-ODRZAŃSKI W KRAJOBRAZIE MIAST NADRZECZNYCH

STRESZCZENIE

Zbudowany przez Prusy w latach 1772–1775 Kanał Bydgoski stał się nową drogą wodną umożliwiającą żeglugę z Wisły do Odry oraz dotarcie między innymi do Szczecina i Berlina. Szerokości oraz głębokość tego kanału wymusiły zmiany w kształcie i rozmiarach statków. Szczególnym przeobrażeniem uległa szkuta, która w zmienionej formie uzyskała nazwę berlinki. W XIX wieku berlinki upodobniono do statków odrzańskich. W tej formie zostały uwiecznione na wielu obrazach i fotografiach z XIX i XX wieku, które często przedstawiają także widoki miast nadrzecznych.

LASTKAHN (*BERLINKA*)

DAS WEICHSEL-ODER-SCHIFF IN DER LANDSCHAFT DER FLUSSSTÄDTE

ZUSAMMENFASSUNG

Der von Preußen in den Jahren 1772–1775 erbaute Bromberger Kanal wurde zu einer neuen Wasserstraße, welche die Schifffahrt von der Weichsel bis zur Oder ermöglichte, damit waren auch unter anderem Stettin und Berlin zu erreichen. Die Breite und Tiefe dieses Kanals erzwangen Änderungen in Form und Größe von Schiffen. Der Lastkahn (*szkuta*) wurde besonders umgestaltet, in der modifizierten Form erhielt er den Namen *berlinka* (Berlinerin). Im 19. Jahrhundert wurden die *berlinkas* den Oderschiffen in ihrer Form angepasst. So sind sie in vielen Gemälden und Fotografien aus dem 19. und 20. Jahrhundert verewigt worden, die oft auch Ansichten von Flussstädten zeigen.

Übersetzt von Renata Skowrońska

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SUMMARY

Constructed in 1772–1775 by Prussia, the Bydgoszcz Canal became a new waterway making it possible to sail from the Vistula to the Oder and reach i.a. Szczecin and Berlin. The width and depth of this canal forced changes in the shape and

size of ships. It was the punt that was particularly modified; it even started to be known as *berlinka*. In the 19th century, the *berlinkas* were made similar to the Oder ships. As such, they have been immortalized in numerous pictures and photographs of the 19th and 20th centuries, which often also depict views of riverside cities.

Translated by Anna Maleszka

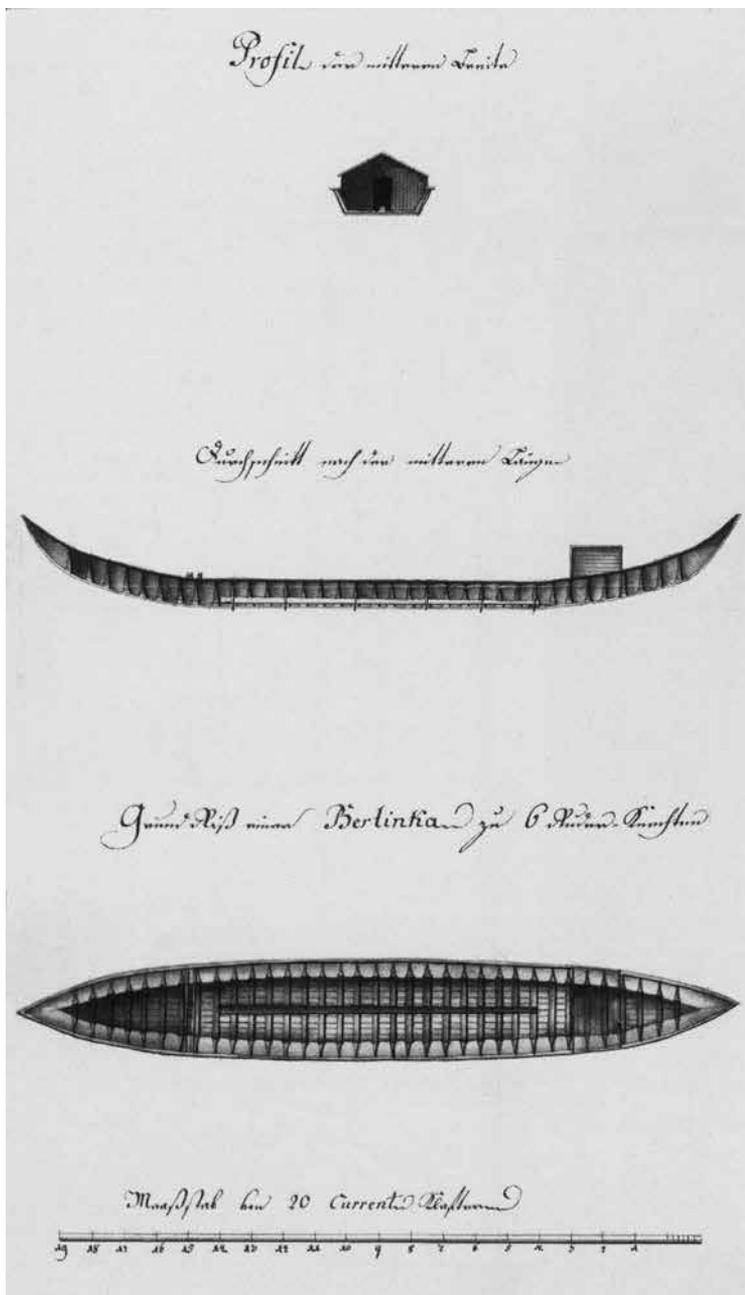
SŁOWA KLUCZOWE / SCHLAGWORTE / KEYWORDS

- XVIII–XIX wiek; statki rzeczne; Wisła; Odra; Noteć; Kanał Bydgoski
- XVIII–XIX Jahrhundert; Flussschiffe; Weichsel; Oder; Netze; Bromberger Kanal
- 18th–19th c; river ship; the Vistula; the Oder; the Noteć; Bydgoszcz Canal

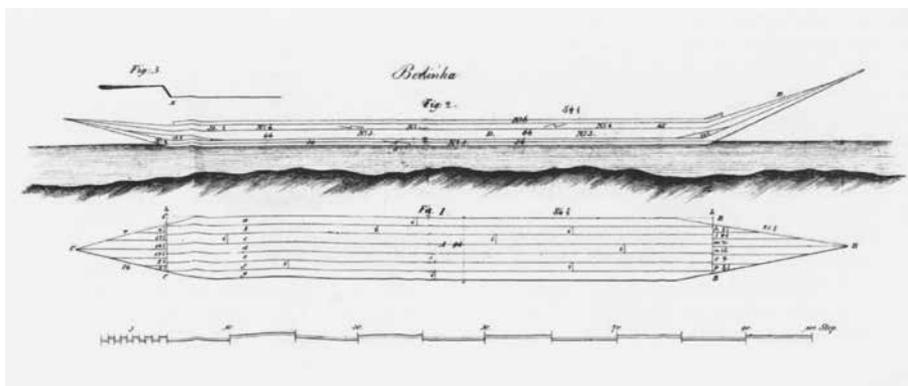
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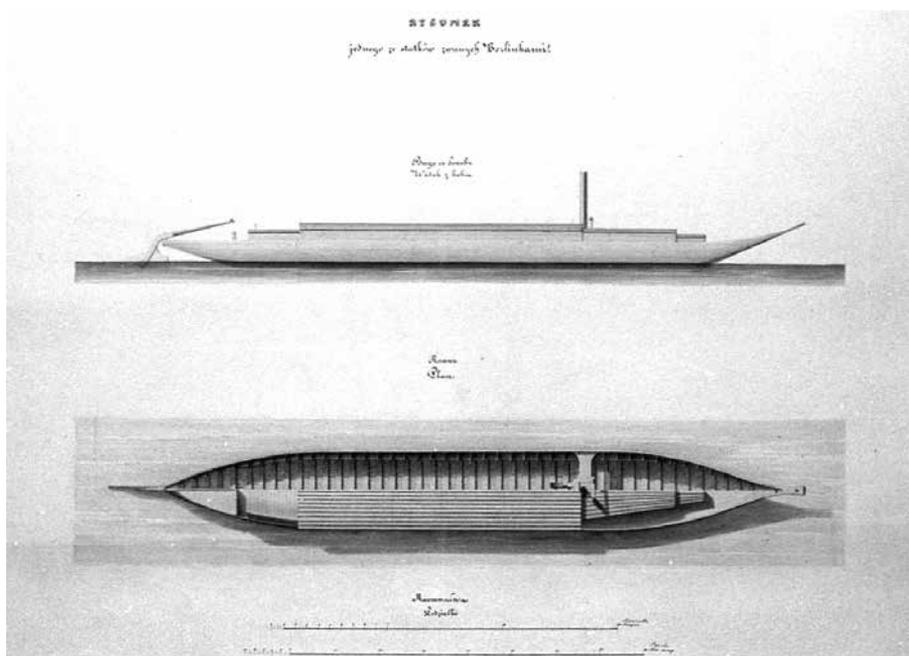
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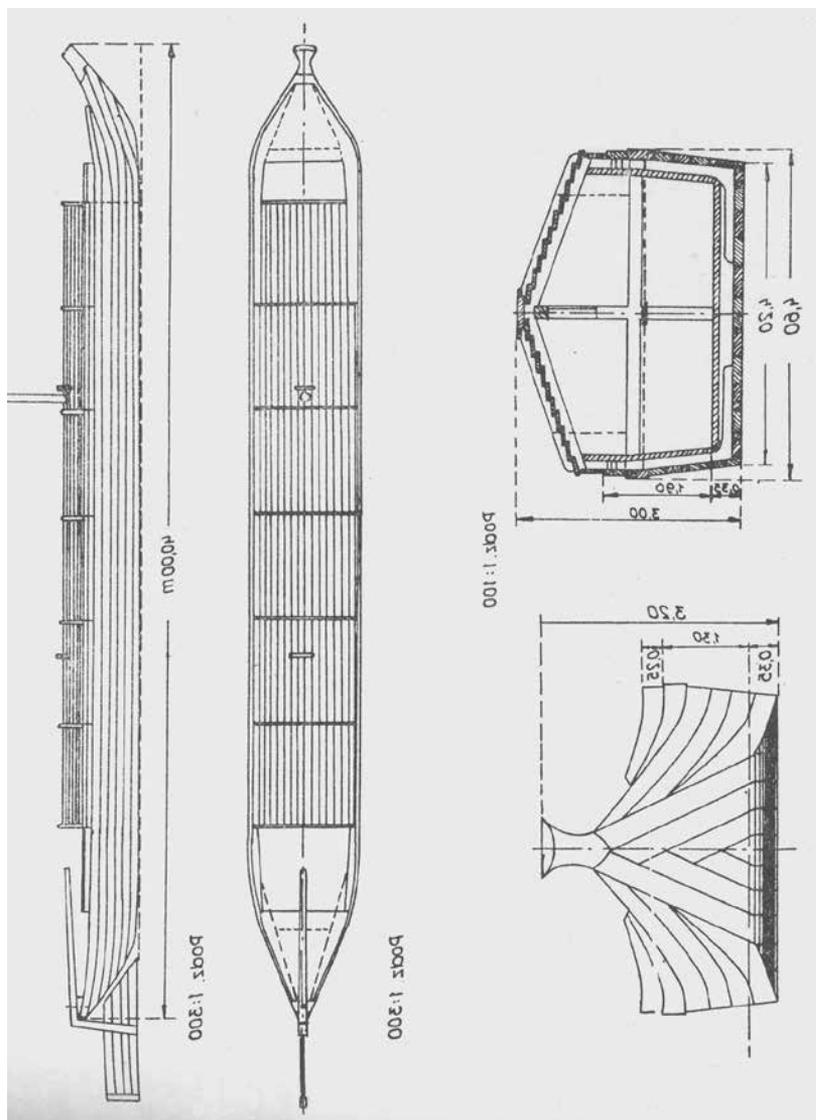
1. The early *berlinka* was recorded on the Vistula by the Austrian engineer Beneventus Losy von Losennau in the river port at Krzeszów near Sandomierz in 1796. Picture: Narodowe Muzeum Morskie w Gdańsku



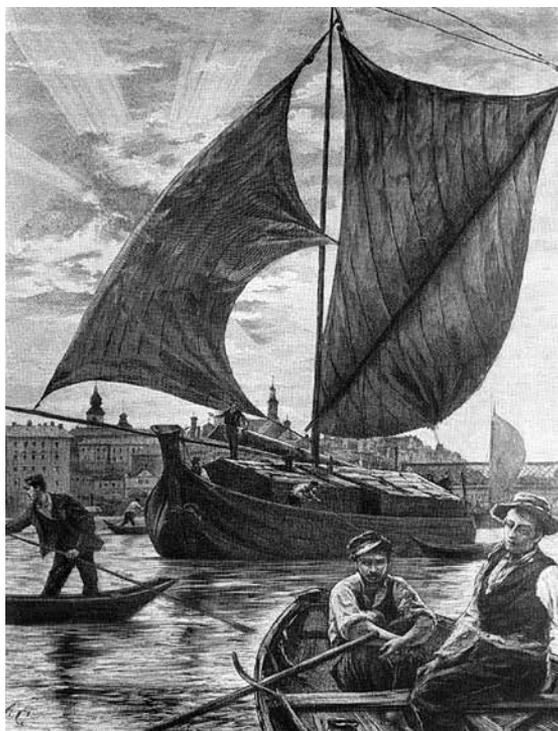
2. The technically advanced berlinka described by H. Kostecki, *O budowie berlinek*, in: *Izys Polska, czyli Dziennik Umiejętności, Wynalazków, Kunsztów i Rękodzieł, Poświęcony Kraiowemu Przemysłowi, Tudzież Potrzebie Wiejskiego i Miejskiego Gospodarstwa*, 2, 2, 6 (1826), pp. 109–129. Picture: Narodowe Muzeum Morskie w Gdańsku



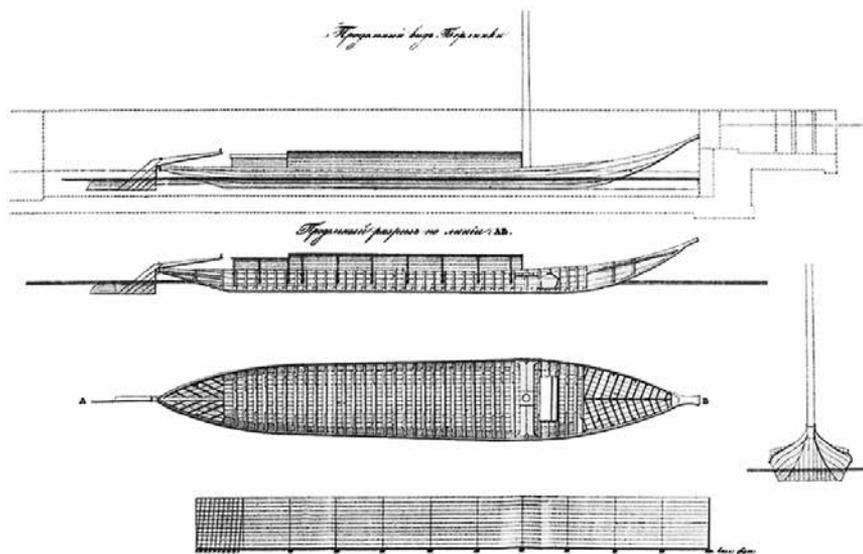
3. The popularity of the river ships known as *berlinkas* on the Vistula and its right-hand tributary, the Bug River, (while on the Oder River were called *Kaffenkahn*, *Finow-Kaffenreisekahn*, *Oder-Spitzkahn*, *Oderkahn* or *Spitzkahn*) is reflected in the technical documentation of this design stored at the Polish State Archives in Warsaw. They were constructed around the mid-19th century. Picture: Narodowe Muzeum Morskie w Gdańsku



4. Odrak (Oderkahn) drawing by O. Teubert, *Die Binnenschiffahrt. Ein Handbuch für alle Beteiligten*, 1 (1918), p. 273, il. 44, also by A. Mielcarek, *Statki odrzańskie w XIX i początkach XX wieku*, in: *Nautologia*, 1 (1986)



5. *Na Wiśle pod Warszawą* [On the Vistula near Warsaw], drawing by A. Gierymski and engraved by E. Gorazdowski, published in: *Kłosy*, 8 (20.04.1882), no. 877, p. 249: Berlinka (Kaffenkahn) under sails. Picture: Narodowe Muzeum Morskie w Gdańsku



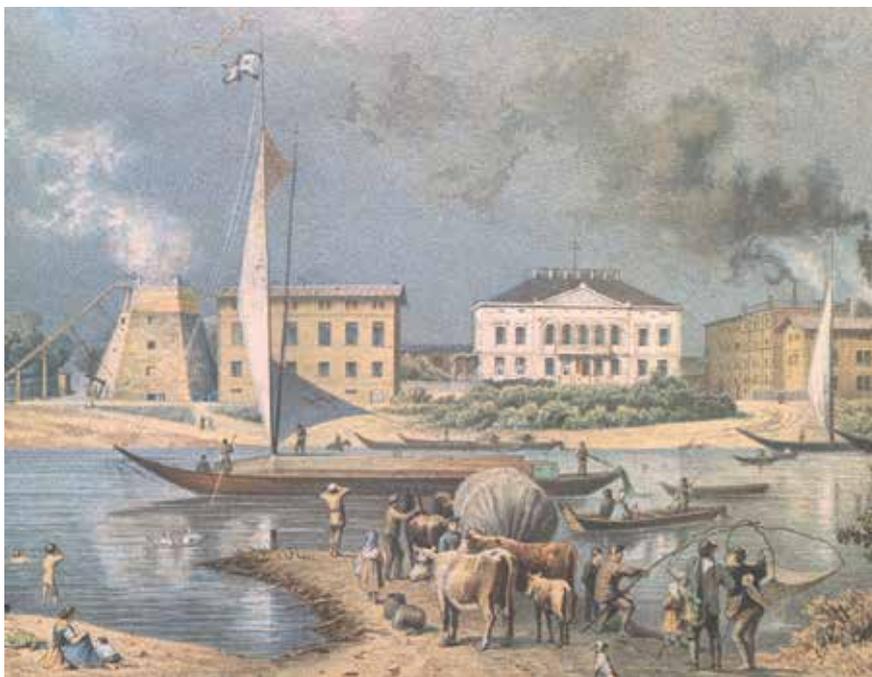
6. Drawing of a *berlinka* from the Niemen and Dźwina rivers by *Žypnal' putej soobšeniâ* [Журналъ путей сообщения], (1838). Picture: Narodowe Muzeum Morskie w Gdańsku



7. The harbour of Gdańsk, a *berlinka* (*Kaffenkahn*) without a mast by a discharging harf. *Długie Pobrzeże w Gdańsku*, painting by Johann Carl Schultz (ca. 1850). Picture: Muzeum Narodowe w Gdańsku



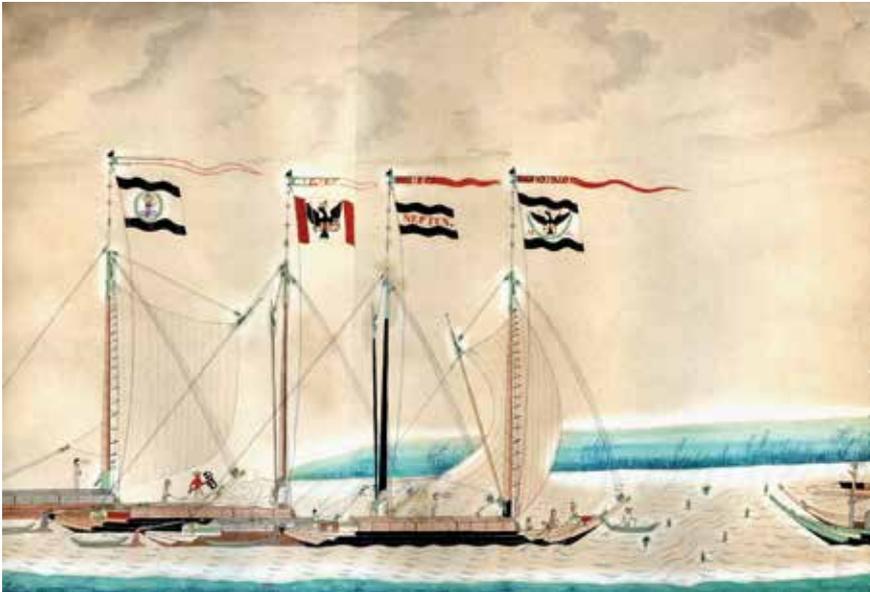
8. *Berlinka*, *Kaffenkahn* ships seen from their bows: part of the painting *Święto Trąbek* [*The Feast of Trumpets*] by Aleksander Gierymski (1884). Picture: Muzeum Narodowe w Warszawie



9. *Koppen (Provinz Schlesien, Regierungs=Bezirk Breslau, Kreis Brieg), The Spitzkahn (berlinka) on the Oder: a part of the painting by Theodor Blätterbauer (early 19th century). Picture: Narodowe Muzeum Morskie w Gdańsku*



10. *Widok Szczecina pomiędzy kościołem św. Jana i Mostem Długim [View of Szczecin between St. John's Church and the Long Bridge]. Kaffenkahn ships in the port on the Oder at Szczecin (Stettin), part of the painting by Ludwig E. Lütke (1839). Picture: Muzeum Narodowe w Szczecinie*



11. *Oderkahn* ships on the Oder Nowa Sól. Picture: Muzeum w Nowej Soli



12. *Żuraw Gdański* [*Crane at Gdańsk*]. *Berlinka* (*Kaffenkahn*) under the Crane at Gdańsk, painting by Paul L. Müller (early 20th century). Picture: Narodowe Muzeum Morskie w Gdańsku

