



# *INVENTORY AND SURVEY OF HISTORICAL BUILDINGS*

## *HISTORICAL BOOKS AS A SOURCE OF KNOWLEDGE*



Erasmus+

# SURVEY OF HISTORICAL BUILDINGS

*KNOWLAGE  
REVIEW*

LABORATORY TESTS

INVENTORY

*IN SITU* TESTS

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*KNOWLAGE  
REVIEW*

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# *Historical building structures - knowledge review*

## **The very beginnings:**

### **Vitruvius' *De Architectura libri decem (De Architectura)***

The first (probably) a copy of this book went to the Polish in 1465, was owned by a canon regular of Trzemeszno John Sprinkler. Thus called Codex Cornicensis sive Trzemesnensis, otherwise Vitruvius de Cropidlo. In the XVI-XVII centuries work was already widely known in Poland, distributed in printed form at the Latin original. Latin in those days for the educated Poles did not present any difficulties.

Vitruvius was also undoubtedly a source of knowledge about architectural orders not only for architects and artists, but even for the guild masters. This is evidenced by the statutes of the Cracow guild bricklayers and stonemasons 1591 and 1618 years. In the older exam requirement is included to draw "Port of Doriki" and other things taken from this book.

Used in schools and as a manual build at the beginning of the Latin and then in French translation and finally the first Polish translation in 1840.

# *Historical building structures - knowledge review*

## **The beginning:**

Poland and other countries of medieval Europe throughout the Middle Ages did not develop literature in the field of construction or generally understood technique and technology.

We are prepared **prayer books, fiction, legal and historical ones**. This does not mean total absence of any development of technology in the Middle Ages, they were, however, technologies and techniques passed down orally from generation to generation. He ennobled because such knowledge was not holding her willingness to share it, or whether it perpetuated.

The special position in this range is the Brotherhood of the Free Masons. They had extensive practical knowledge, used in the construction of Gothic cathedrals.

Free masons, they were skilled laborers working on the treatment of "free stones" or stones with expensive species and high aesthetic value. They formed a quasi-union, with its code, the system degrees of initiation, promotion path and access to knowledge. They worked in separate rooms called "lodges". Technical knowledge was transmitted both within the same box as well as between lodges.

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## **From 1450:**

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## Technical poems 1553:

As an example, something like a technical manual can we used Regni Poloniae work Salinarium Vielicensium descripto Sdsms Schroeder from 1553. Let me translate into Polish to illustrate the problem:

*..Many winding walkways and underground adits  
Leads to the goal, the miracle is indeed great.  
Perhaps the only faithful Achates accompanied him,  
Could a healthy his head in a maze save!  
When quickly so we are wandering the salt of the caves,  
Our curiosity grows, we go farther,  
To arrive chambers, and so it is called Sarmatian,  
Since the magnitude equal to the great theaters.  
The chambers of these pillars, supposedly at the temples,  
A salt pillars to protect them from collapse.  
But the expedition and wood in many places we see,  
And that is hundreds of years old, it makes only salt ....*

As you can see far different from today's textbooks in technical sciences.

# Historical building structures - knowledge review

## Technical poems 1553:

The first texts where construction work can be found were mainly about: agriculture, fortifications, and ponds, the known ones are listed below :

- Krescentyna Peter „*Book of the farm and the propagation been provided with numerous benefits everyone is needed*”; Krakow 1549
- As the oldest Polish concerning the construction work is recognized Latin print: "*Ordinationes de carpentariis, muratoribus et lapicidis*" or "provisions of carpenters, masons and stone masons" from the year 1554. It contained unfortunately only a set of guild regulations.
- Olbrycht Strumieński: „*About the case, pouring, measurement and restocking ponds, as well as crosscuts, for weighing and running water, a book of all the hosts needed*" Krakow 1573
- Anselm Gostomski; "Farms" of 1588. In this work are given personal experience regarding arranging "the farm" author - landlord. Here we can find the first instructions for proper locating the building: „...*As for the apartment, let him have his own house and ready and hungry deployed, power, built on proper way, in a healthy square, view and neatly placed. In the buildings (rooms) of different measures, according to the state, prosperous - myself, wife and children up to time made: quiet winter, summer cool, always keep tidy. For this let her was to submit a friend (lounge), hide the hardware, flat servants. In the middle of the yard healthy water spring: kitchen at home; bath with water; stable on the page; kennel least in half-mile...*”



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**1659:**

**„Very short teaching of building Mansions, Palaces, Castles according Heaven 's and in a Polish way "about the authorship of unconfirmed.**

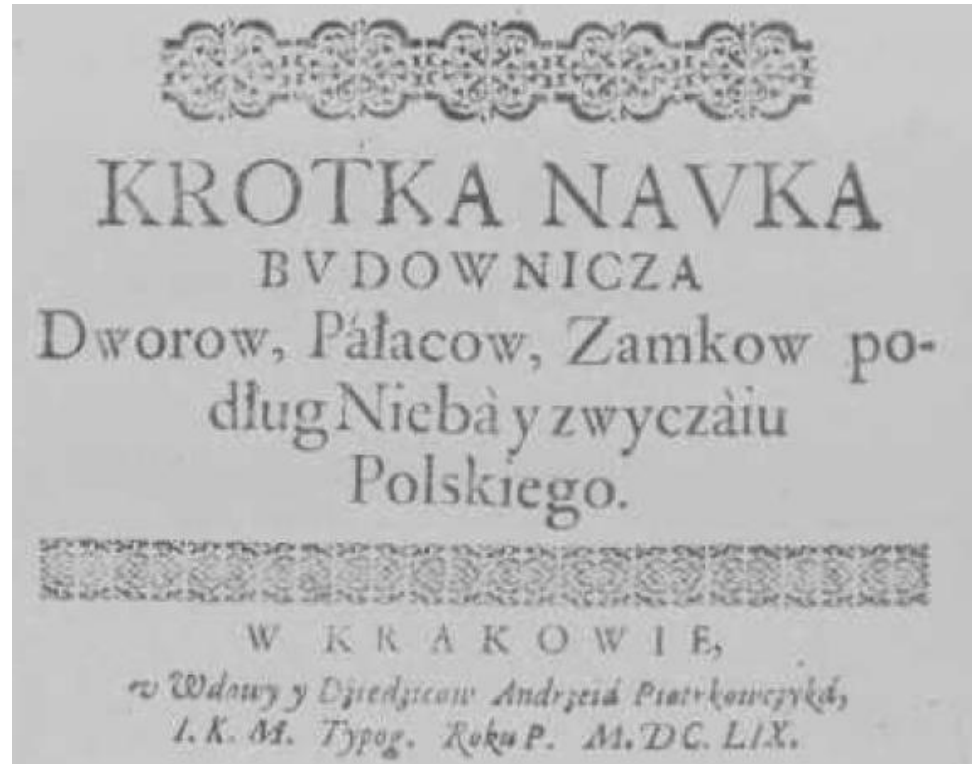
It is the first Polish position treats only about the art of building. It provides guidance on the development of buildings, ways to climb its individual parts.

It was written very simply, guidance as to the methods of erecting buildings are few and defined in very general terms. The difficulty in collecting this work also consists of the fact that theoretically written in Polish has plenty of foreign inclusions.

Tips are given in the form of rules that had to behave with proper design and execution of buildings.

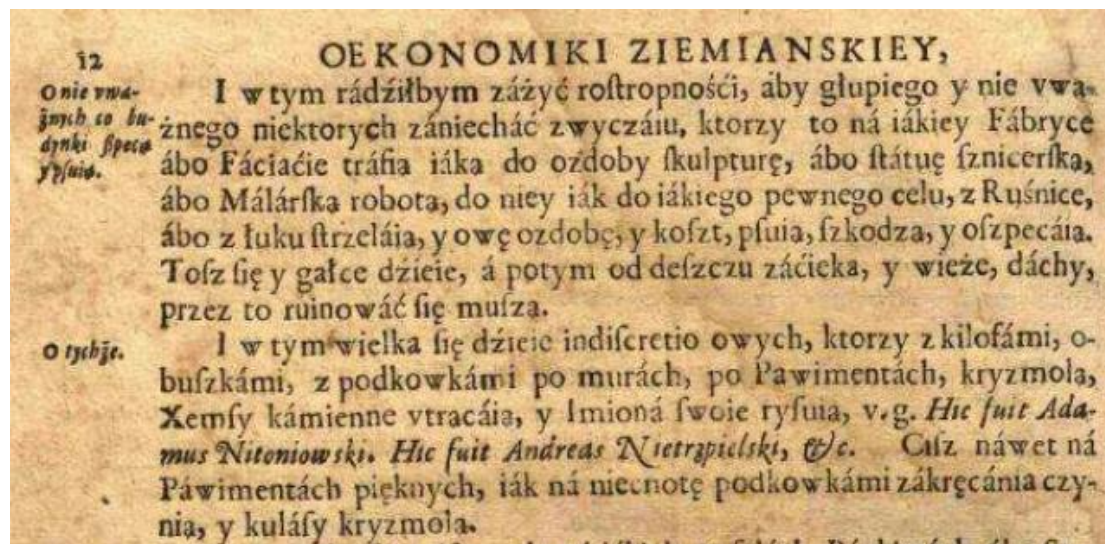
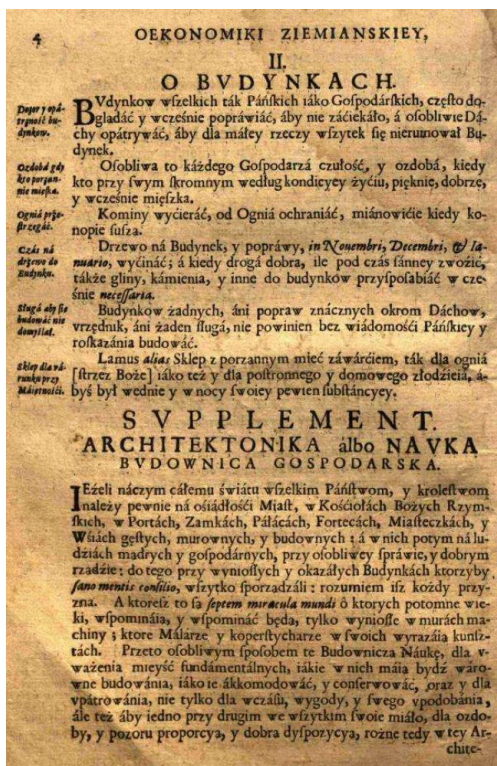
Some of his pieces, but you can be treated as a customs guidance as to the proper construction of buildings: „.... *about bricklaying then saying / it with these things weigh each individual need. The foundation / walls / holes needed in the walls / stairs / Chimneys .. At last the roof. I'm starting from the foundation rightly .... Because error in it committed / very harmful could be and hardly repaired*”

# Historical building structures - knowledge review





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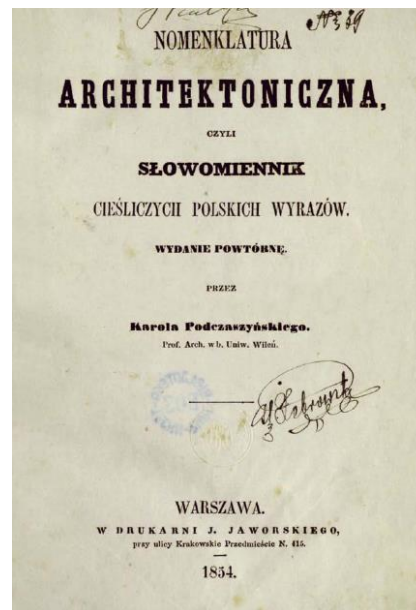
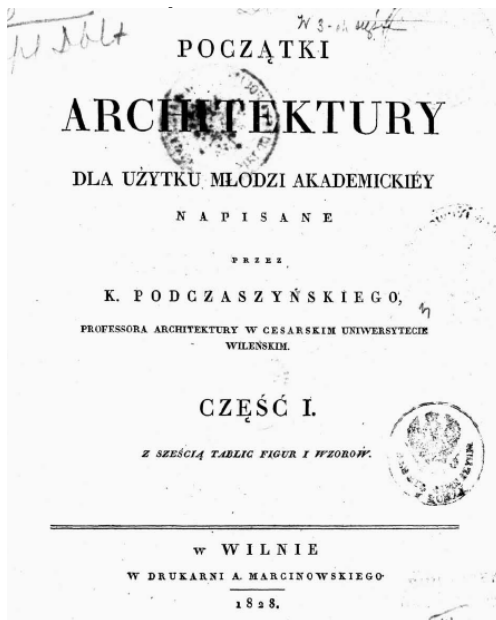


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**1828:**

**„Początki architektury. Dla użytku młodzi akademickiej”**

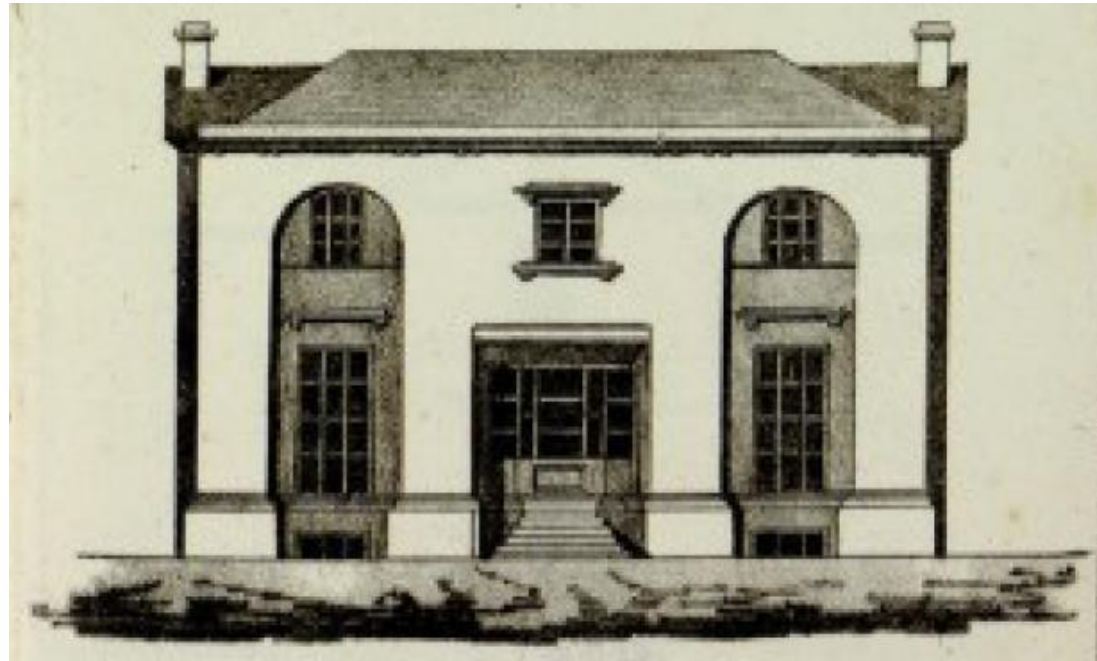
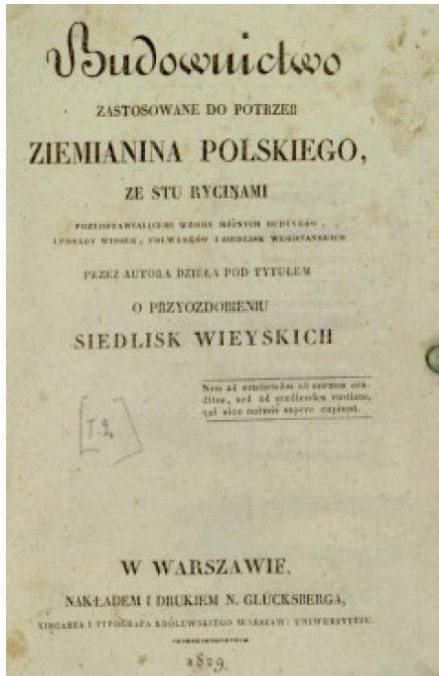
Two-volume work of architect Charles Podczaszyński. It was given in Vilnius in 1829. It is a textbook for students and builders. Discusses the principles climb, design and calculation of



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1829:

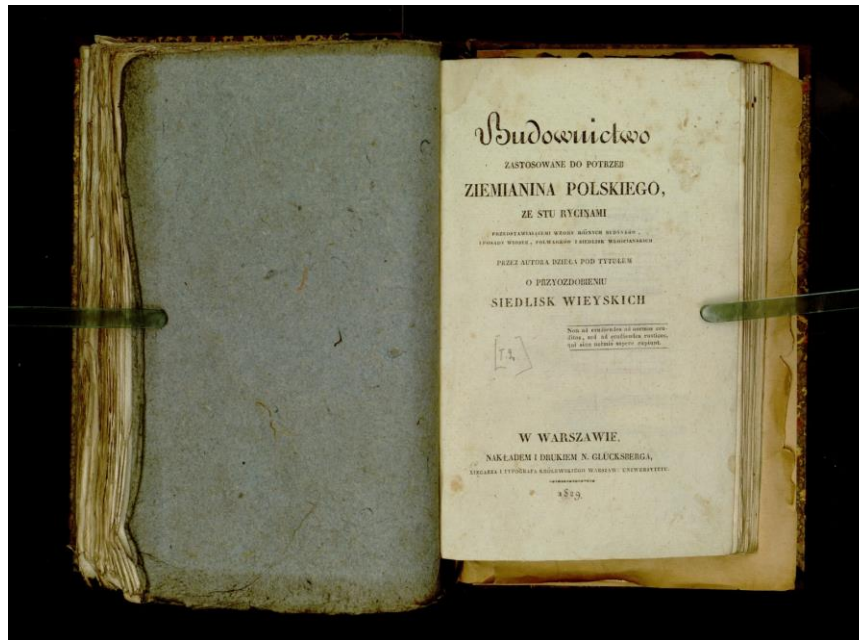
„Gizycki Ksawery - Budownictwo Ziemianina Polskiego” – The Polish landlord building rules



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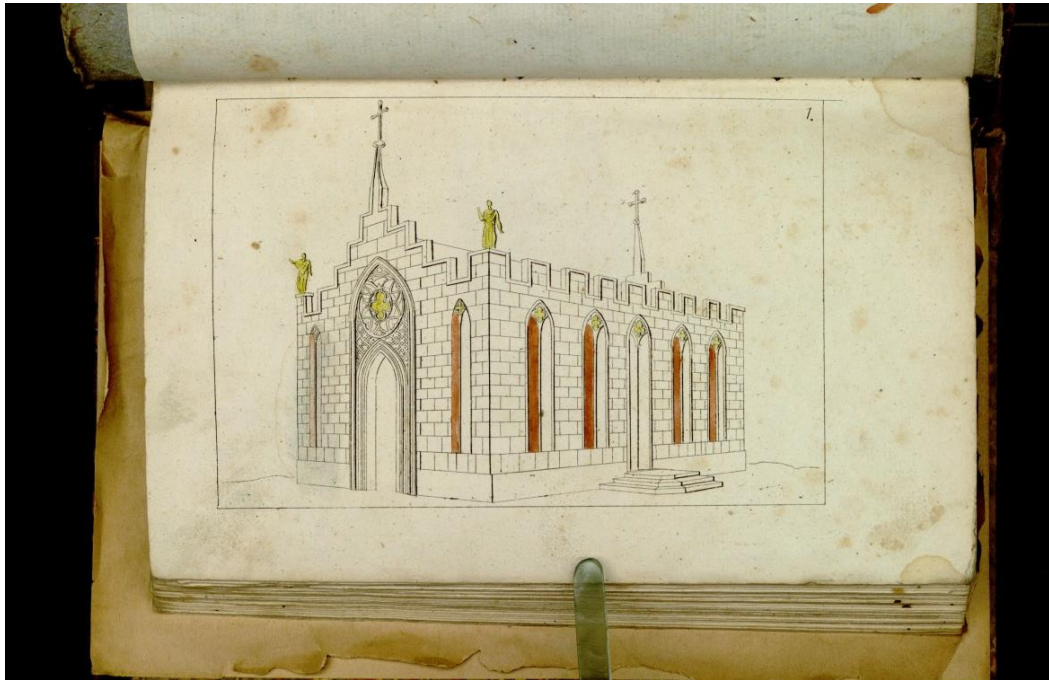
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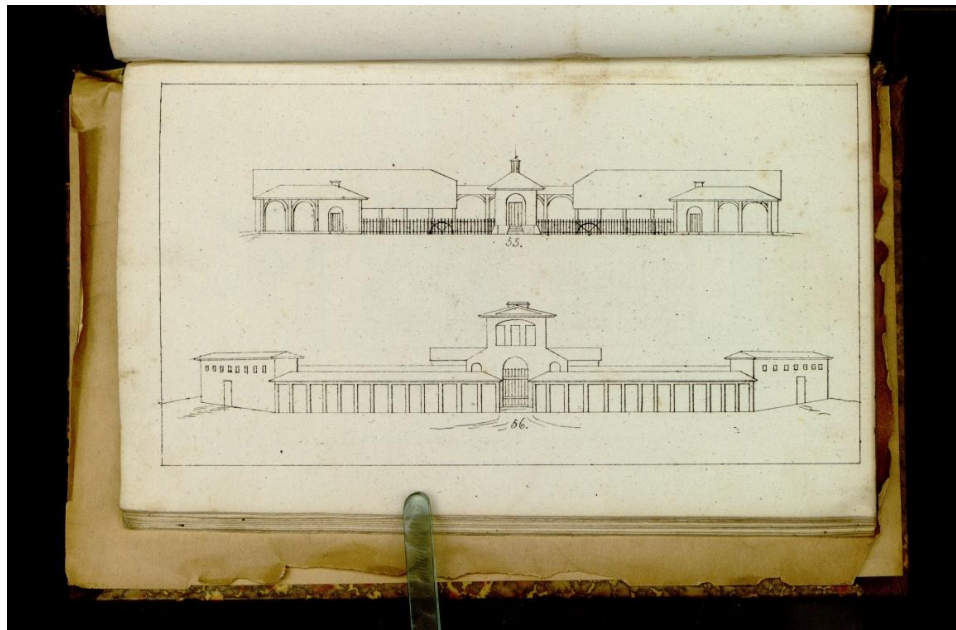




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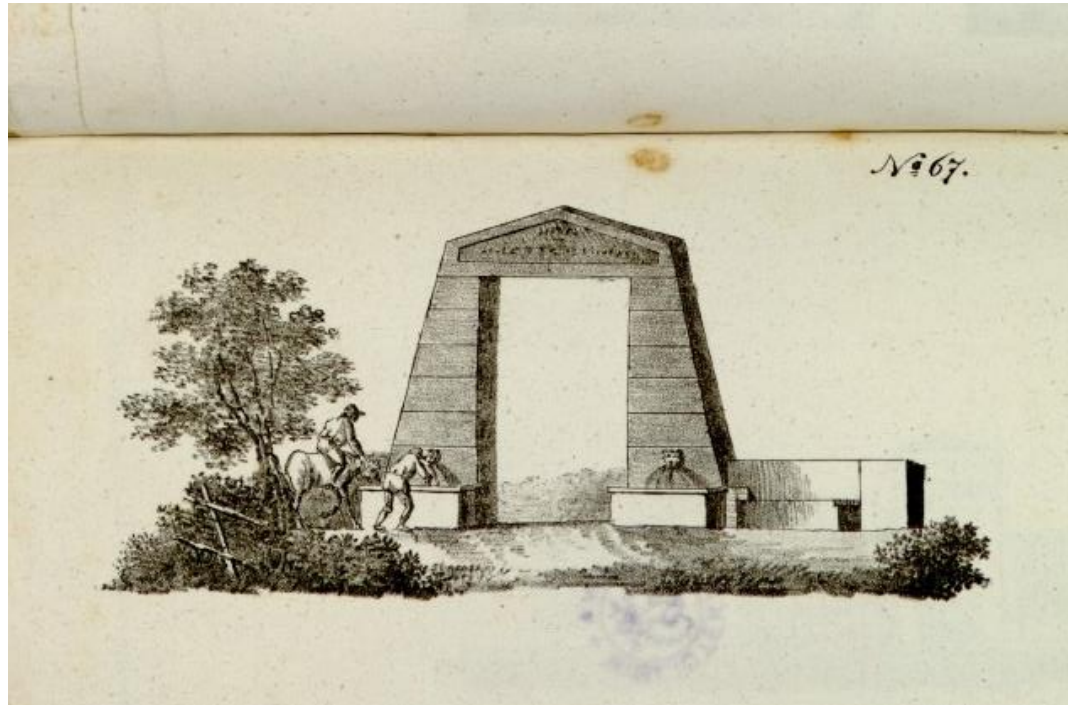
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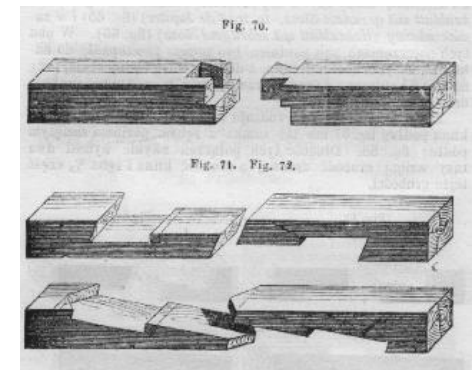
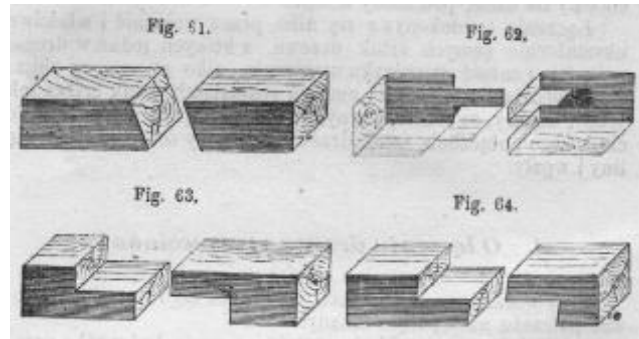
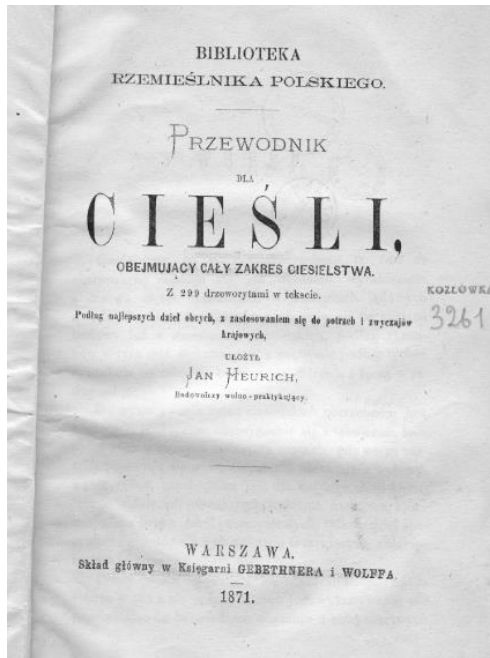
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1871:

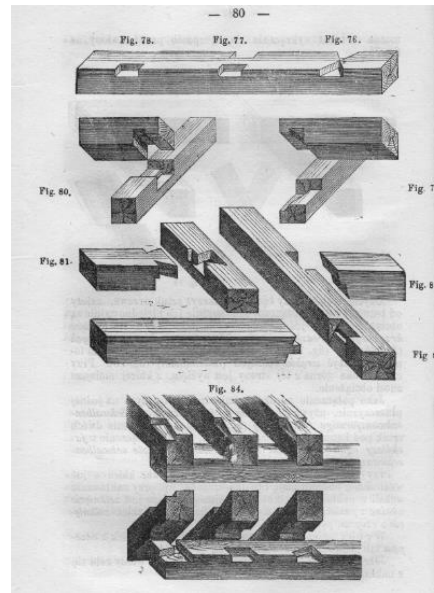
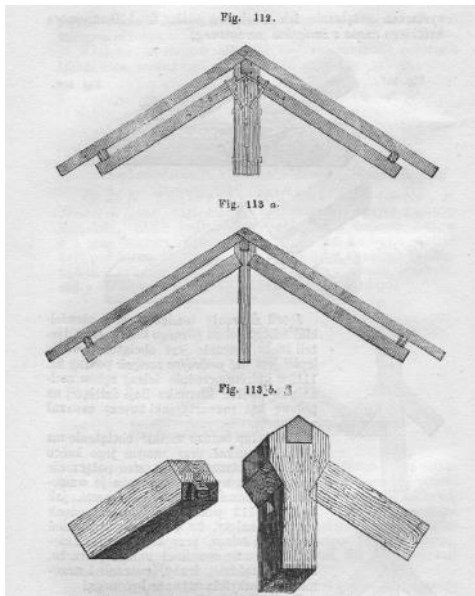
„Jan Heurich - The carpenters manual”



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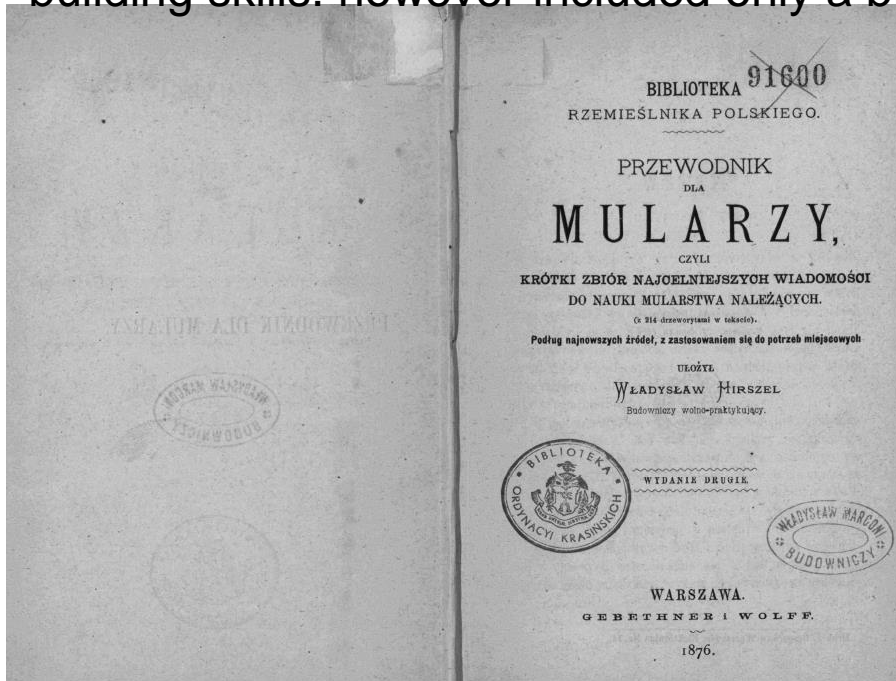
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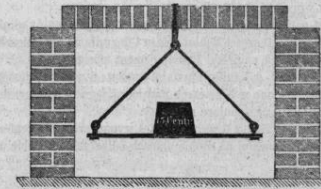
1876:

„Władysław Hirszel- The masons manual” The first textbook of the building skills. however included only a bricklaying trade.



Taką sama belka wymurowana na zaprawę złożoną z 1 części cementu i 3 części piasku, okazała częściowe pęknięcie pod ciężarem 47 centnarów i dopiero po kilku uderzeniach młotem kowalskim, zupełnie się przełamała. Przy użyciu do spojenia cegieł mieszaniny, składającej się z 5 części piasku i 1 części cementu, tychże co wyżej wymiarów belka zniósła przed złamaniem, obciążenie w środku 31 centnarów; gdy tymczasem takąż samą belką, w podobny sposób podparta i obciążoną, lecz wymurowaną na zaprawę z Roman-cementu pomieszanego w równych ilościach z piaskiem, złamała się już pod obciążeniem 29 centnarów.

Fig. 3.



Z 16 cegieł potężnych podług figury 3-ciej zaprawą z Portland-cementu, zmieszanego w równych ilościach z piaskiem, utworzona belka i w końcach podparta, złamała się pod ciężarem zawieszonym w środku, który wynosił 15 centnarów. Wielką siłą spójności Portland-cementu wykazały następujące doświadczenia:

Dwie sztuki z najlepszego portlandzkiego kamienia (którego moc wyrównywała prawie mocy piaskowca krzemienistego), na 2 stopy długości, 9 cali szerokie i tyleż grube, zostały z sobą spojone patentowanym Portland-cementem; po upływie dni 28, dolny kamień, sposobem na figurze 4-jej wskazanym, obciążono 38 centnarami, w skutek czego, kamień górny rozzerwał się powyżej stugi spojenia, zaprawa zaś pozostała nienaruszoną. Dwa kamienie z tegoż samego materiału i takich samych jak wyżej wymiarów,

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**1876:**

## **Przewodnik dla Mularzy - Guide for Masons**

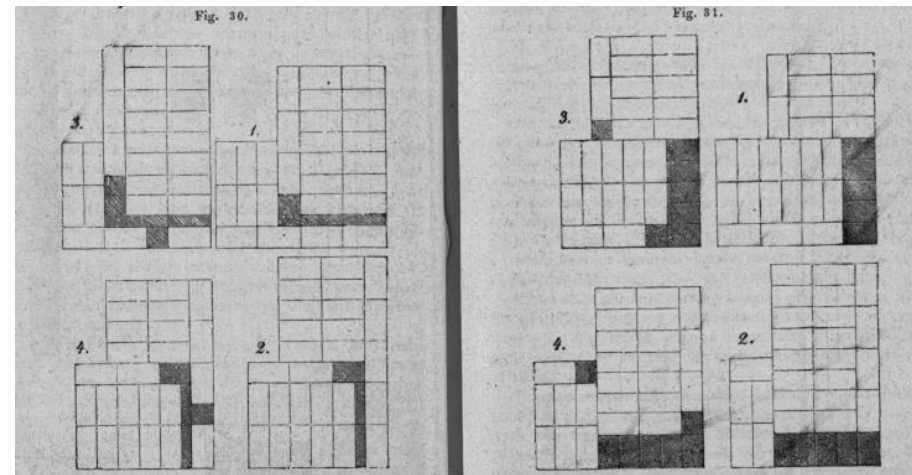
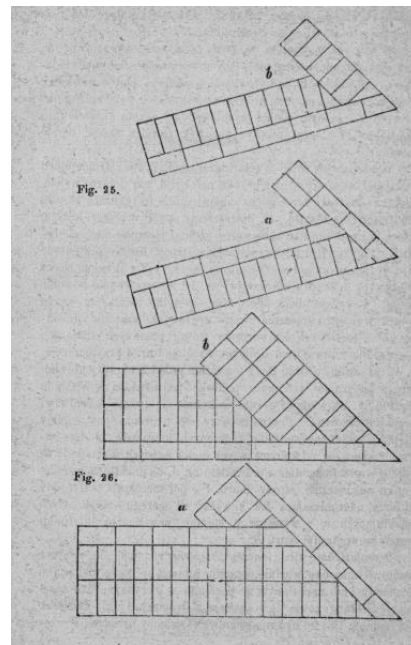
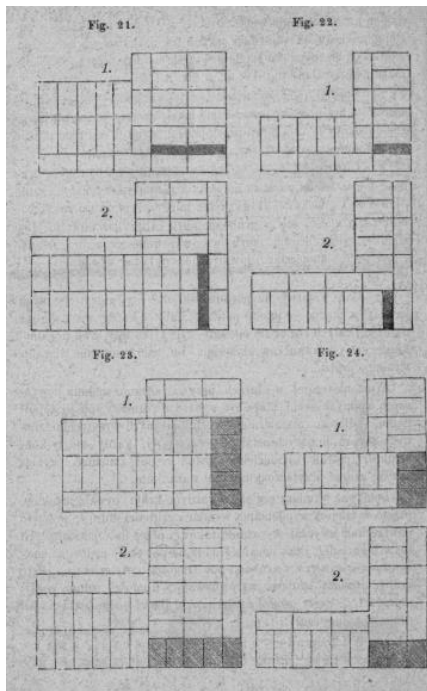
The next item is the Science of masonry by Władysław Hirszi. This is the first construction manual that corresponds to today's standards for this type of publications.

The development includes issues concerning the foundation, erect walls and vaults, plastering and basic information on the measurement time and cost of erecting the individual elements of the building. Author lot of space devoted for material and workmanship issue masonry, plastering and technologies and configurations of the mixtures.

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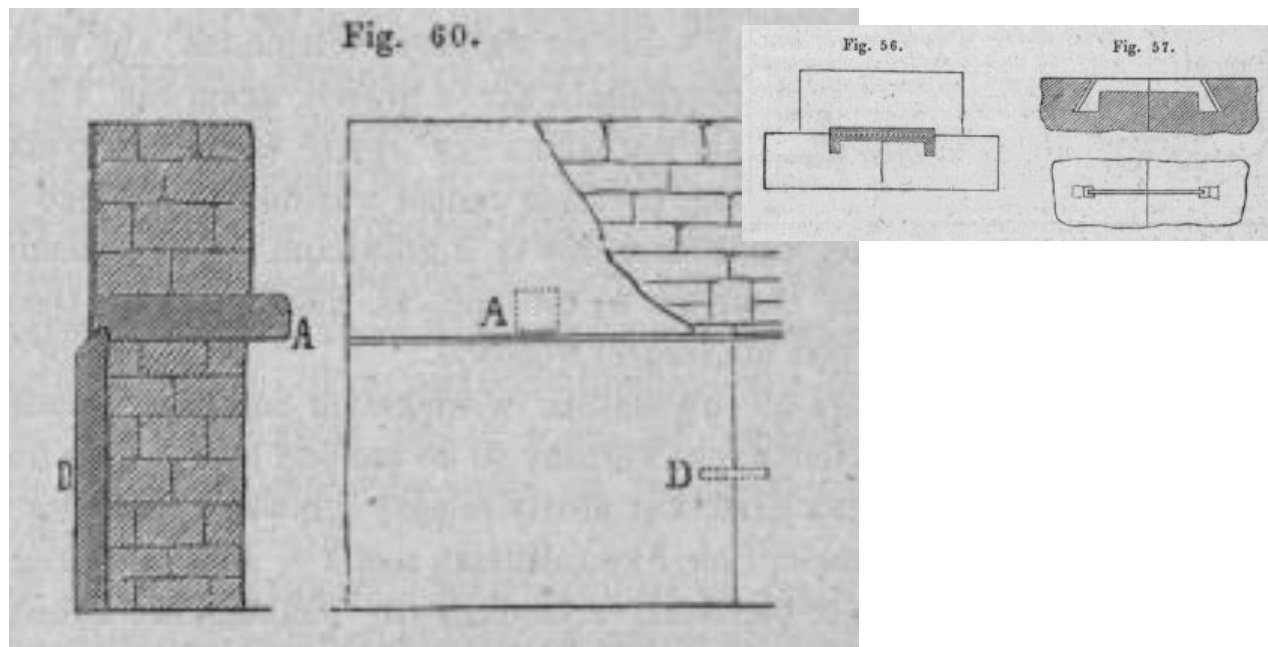
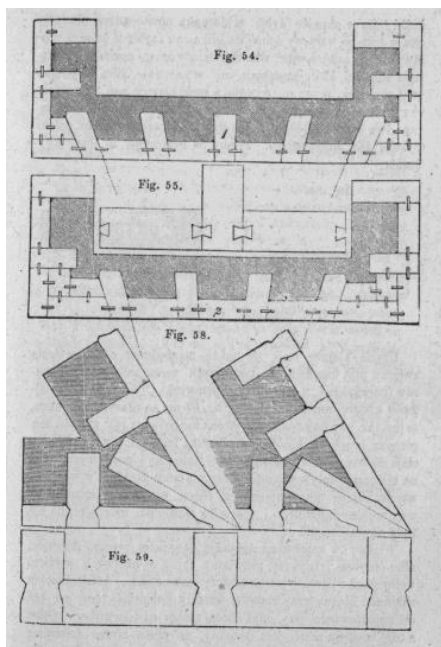
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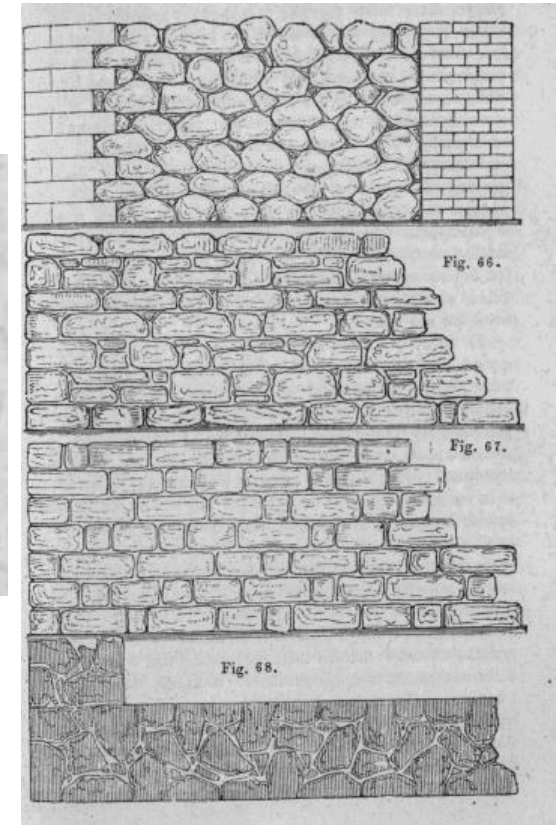
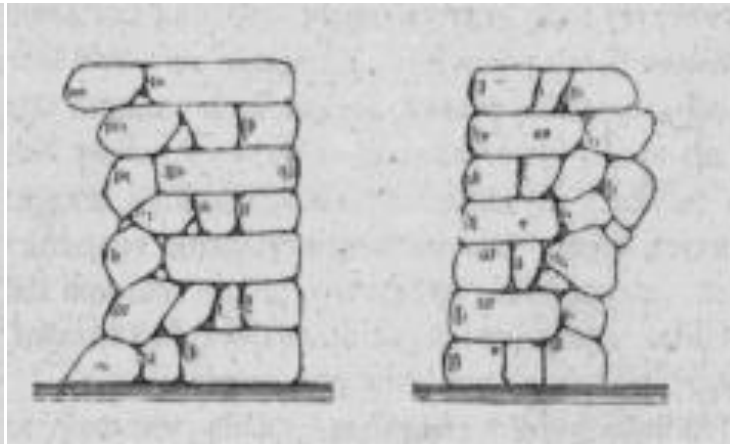
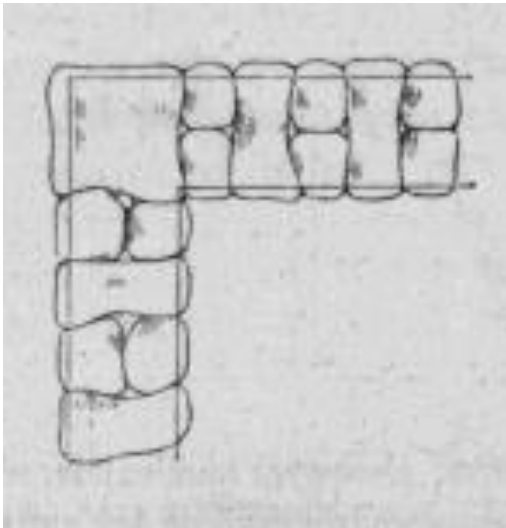




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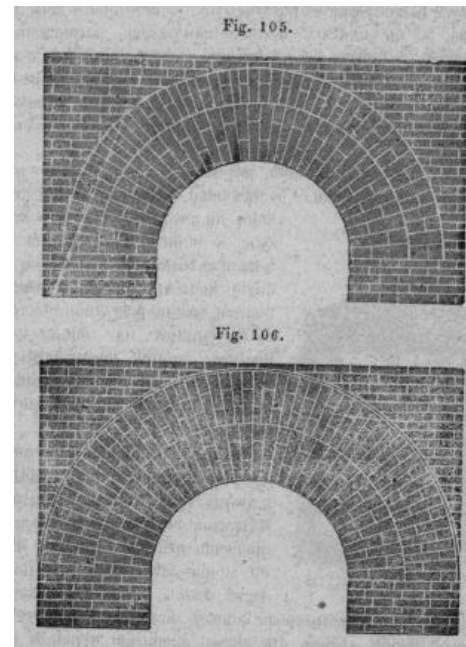
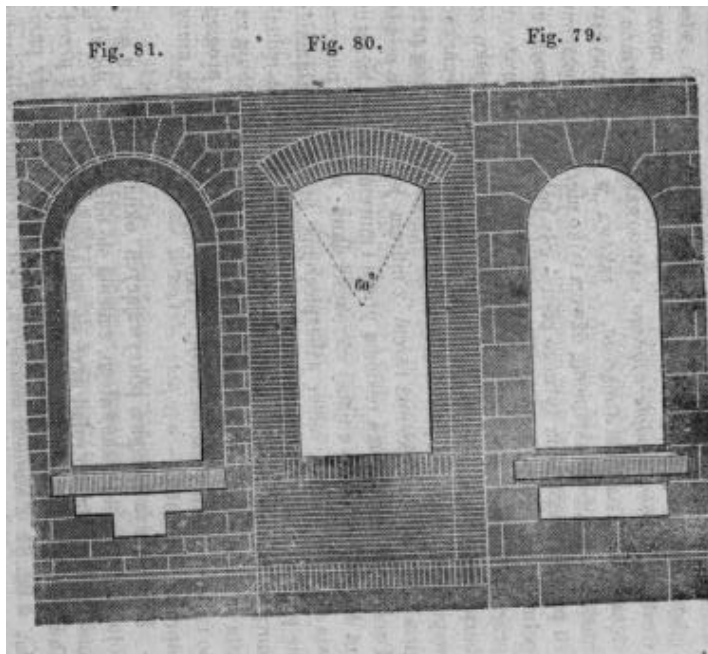
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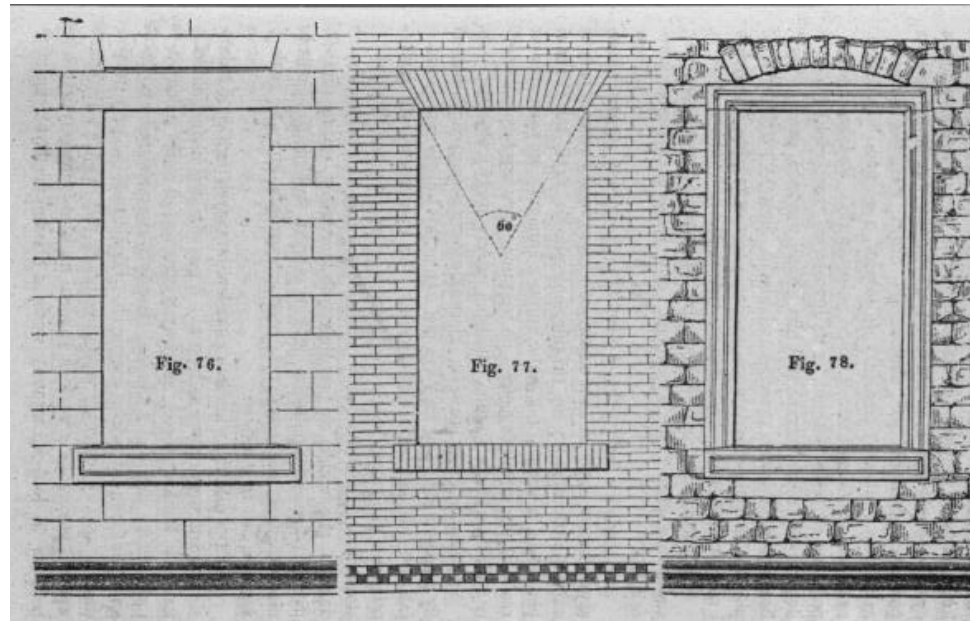
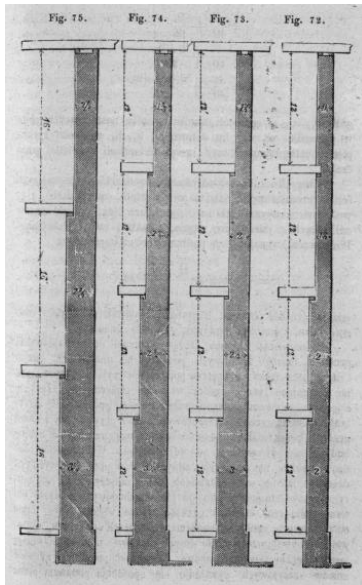
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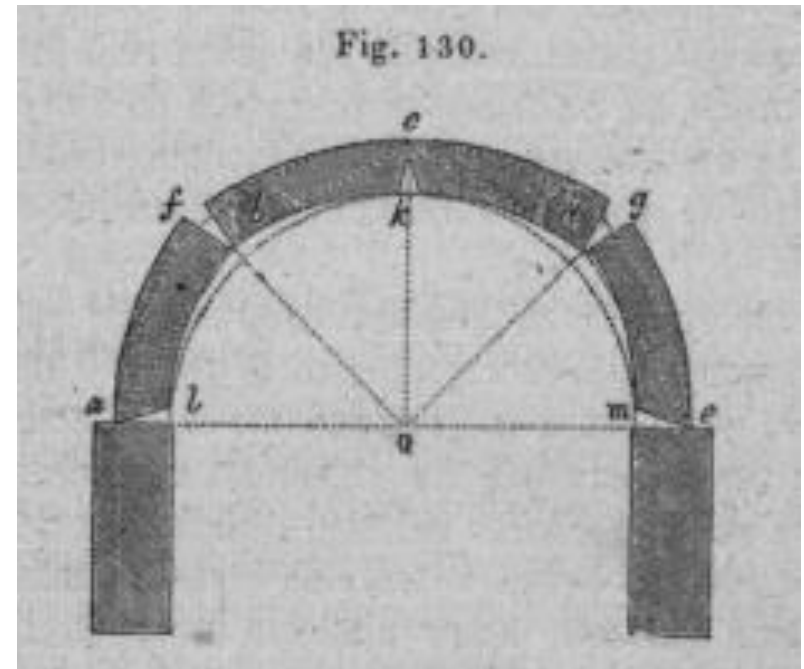
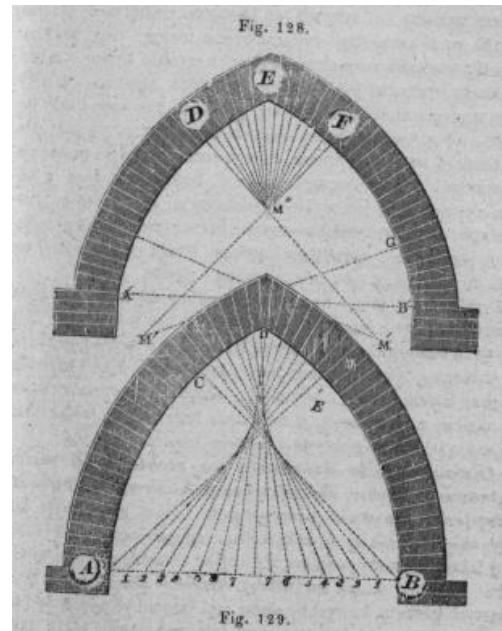
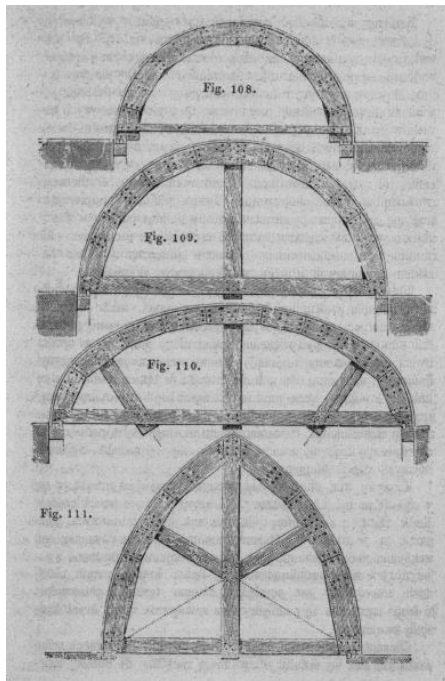
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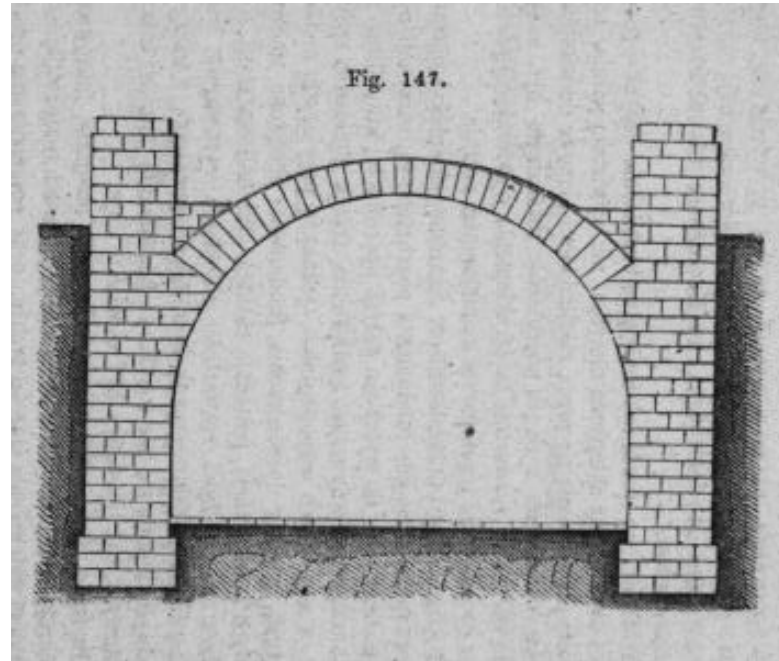
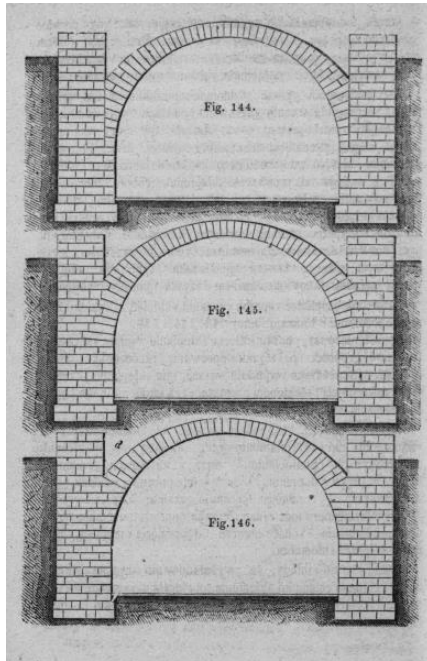
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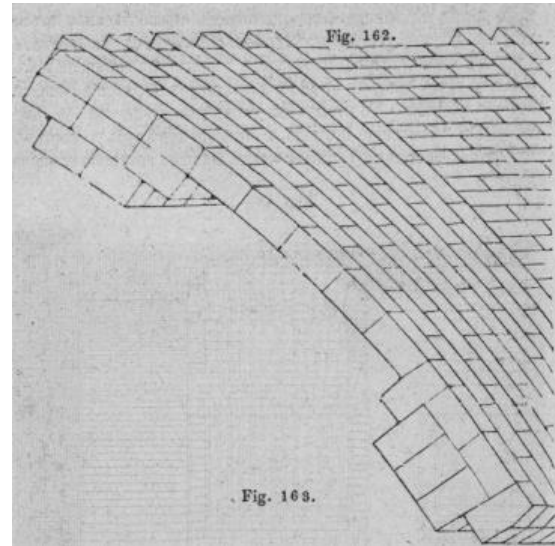
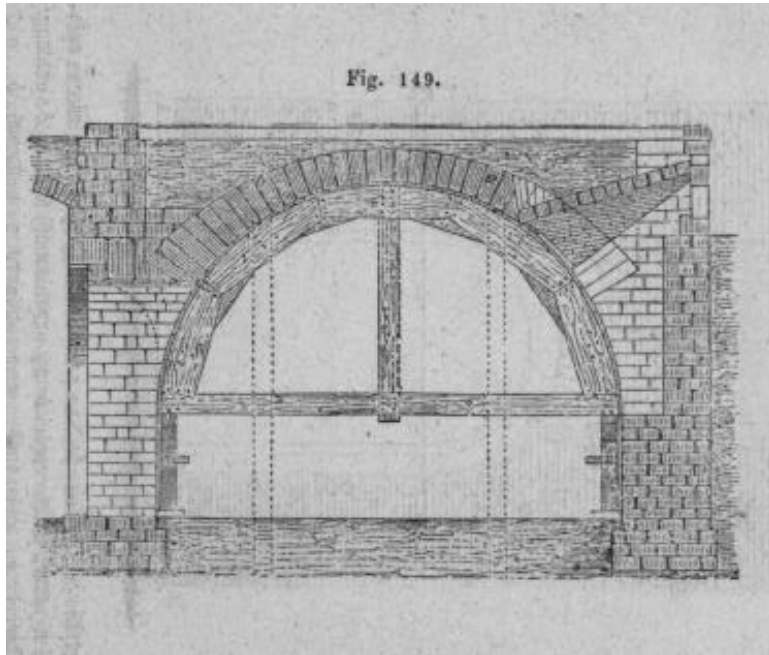
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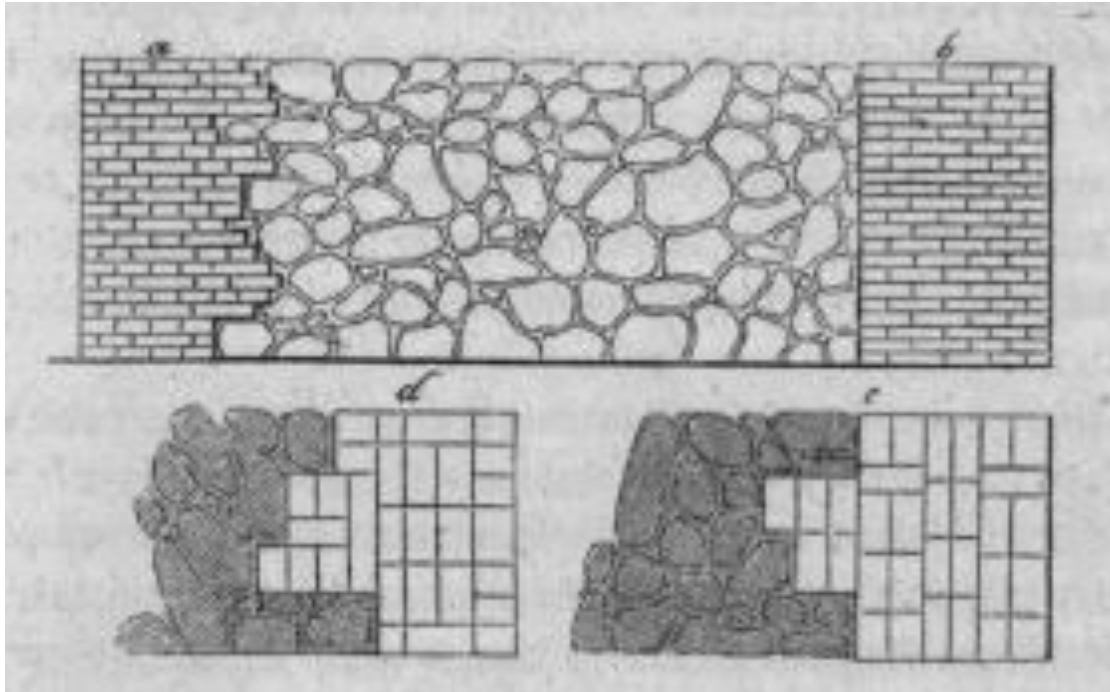
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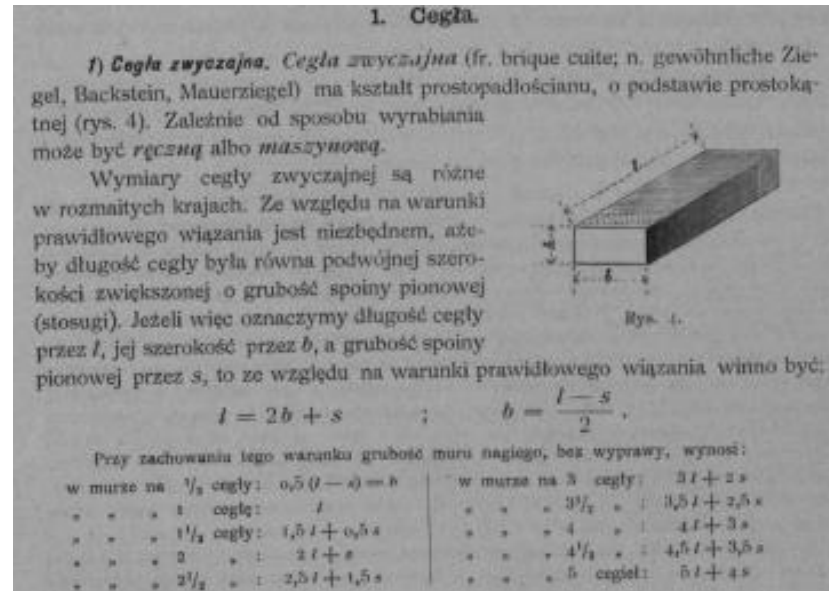
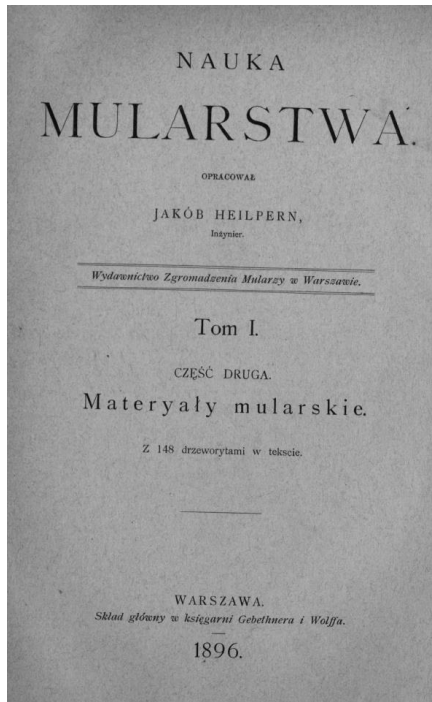


# Historical building structures - knowledge review

1896:

„Nauka mularstwa”

First two of planned four books of super-mannul for the Polish builders.

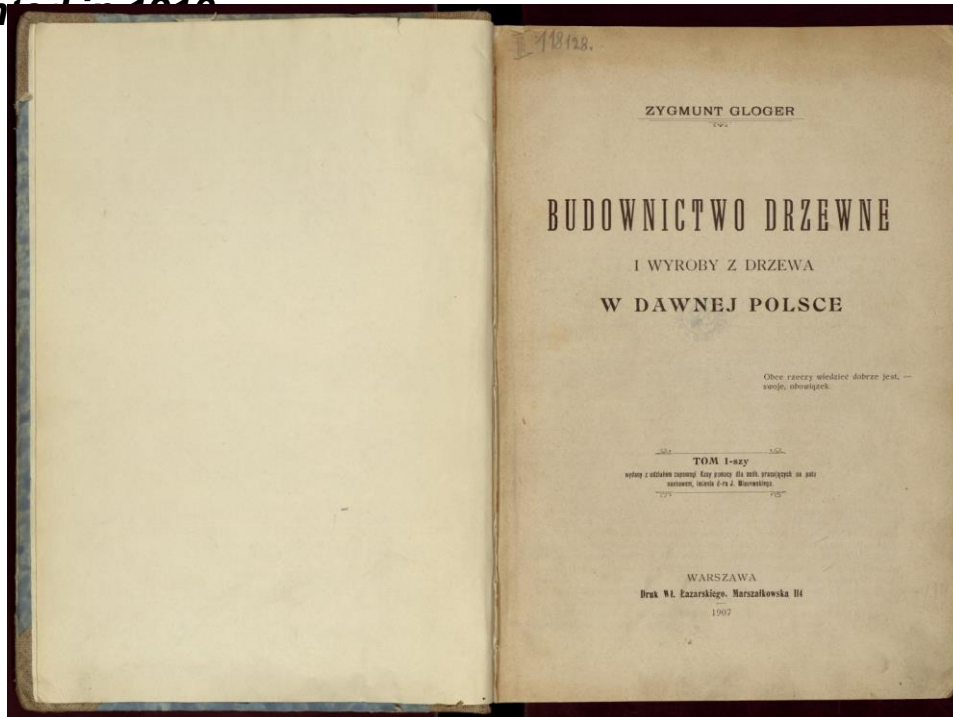




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1910:

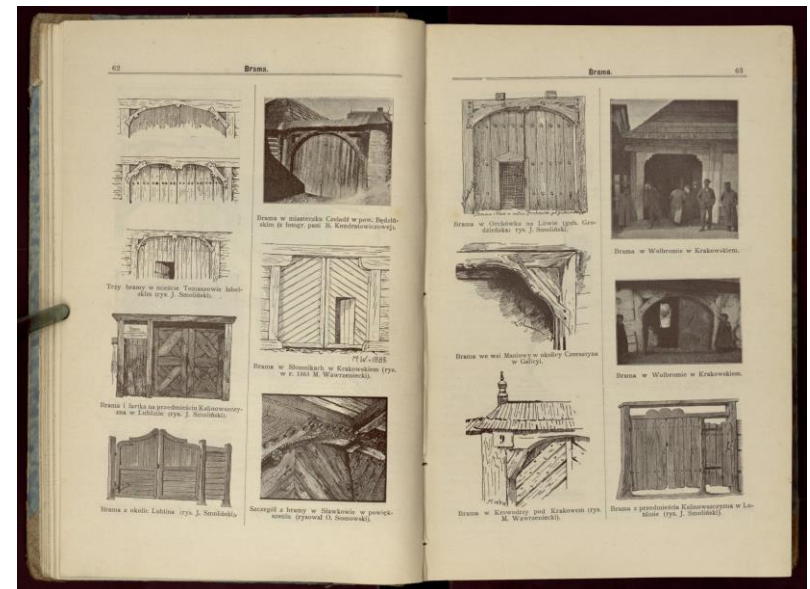
Zygmunt Gloger „Wooden buildings and things made by wood in ancient Poland” book printed in 1910



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1910:

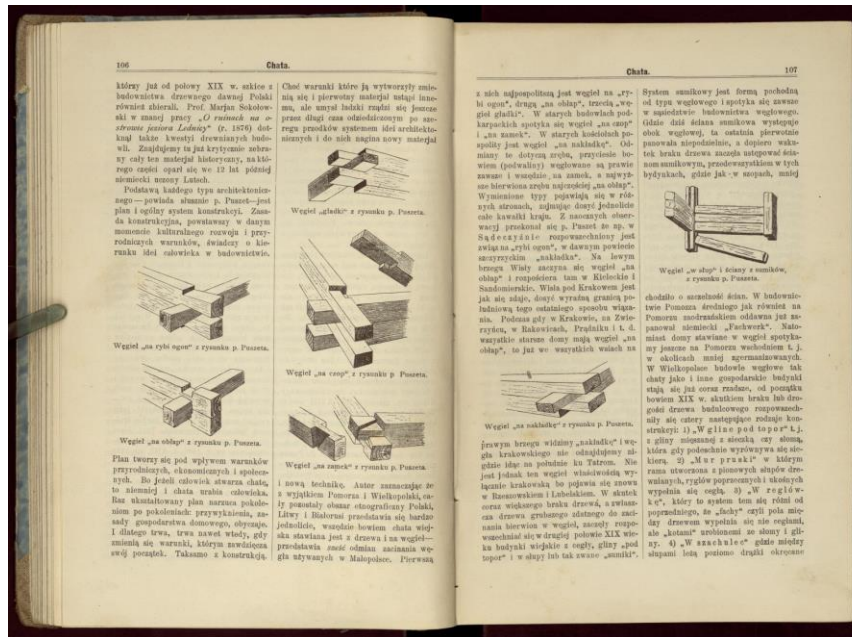
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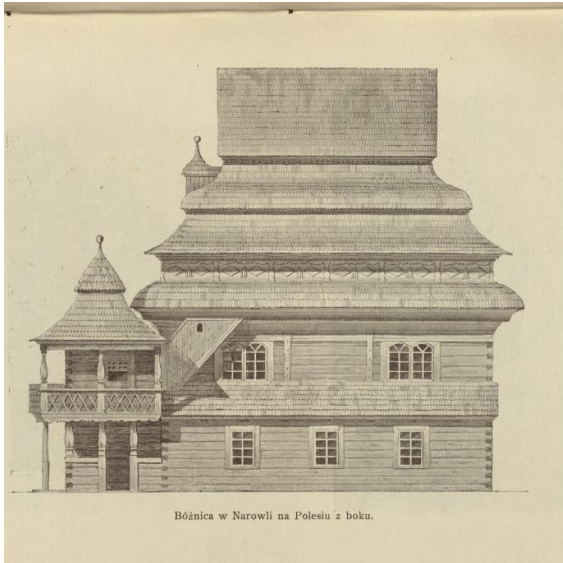
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# ***BIBLIOGRAPHY***

All books come from private collections.

Preparation of the lecture: MSc. Eng. Bartosz Szostak



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