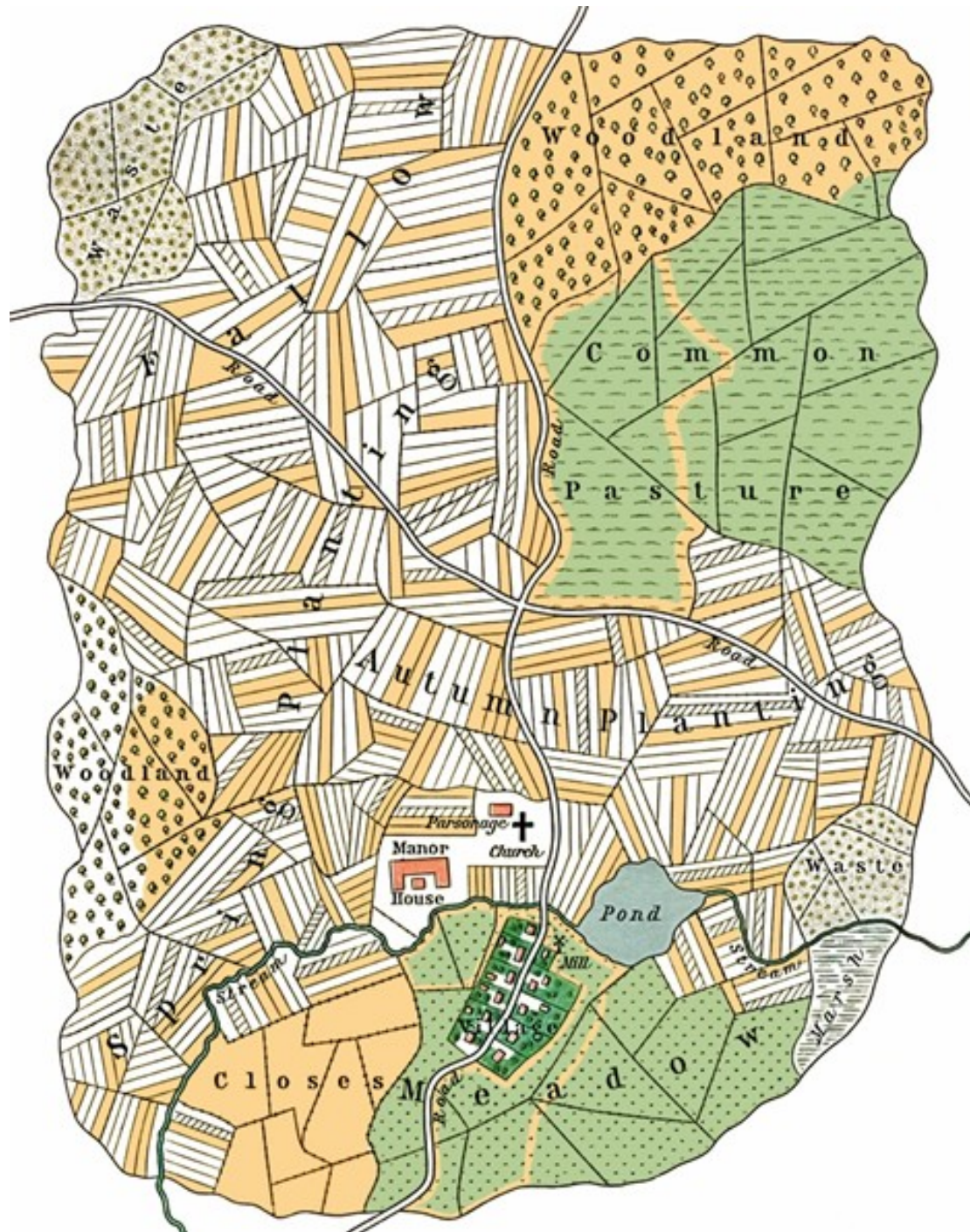


Europeanization of the International Economy and Industrial Revolution

Europe in World Economy 2015



Commercialization of Agriculture

- Why did **peasants** in **West** begin to work for the **market** while rest of Europe no sooner than in 18th and 19th? (vs. DCs)
- Decision market vs. subsistence:
 - **Small local market** - sharply declining demand curve:
 - **Lower price** can be **compensated** by **specialization** and **productivity growth** - after **certain point** commercialization is a **self-reinforcing** process;
 - **Subsistence** – **no scale, no learning, no technological change**;
 - **West: cities** and **employment outside agriculture** - bigger markets and technological change (**ToT** in favor of agriculture);
 - Institutional structure of society... (*Aldcroft*)
 - **Less developed market** have **higher transaction costs** (transport, tolls, middlemen, information) – **preference to subsistence** or provision locally;
 - **Transition costs** of transformation from **autarky** to **commercial farming** (switch back costly);
 - **New forms of dependence** – **middlemen** (supply capital in return for buying crops in advance);

Table 1.2 Rough estimates of the number of mouths fed by 100 people working in agriculture 1500/20–1800

	1500/20	1600	1700	1800
England/Wales	132	143	182	248
Belgium	173	160	192	233
Netherlands	177		219 ^a	277
France	138	145	158	170
Italy	133	143	122	129
Poland	100	101	101	105
Spain	114	130	122	129

Note: ^a1670.

Sources: England/Wales and France: Wrigley (1987,187); for other countries, see Van Zanden (1998a).

Table 1.1 Estimated crop yields and yield ratios for 12 countries in about 1800 (crop yields in hl per ha)

	Crop yields				Yield ratios			
	Wheat	Rye	Barley	Oats	Wheat	Rye	Barley	Oats
England	20.3		29.3	32.5	11.3		12.7	9.0
Ireland	19.9		31.2	32.9				
Netherlands	18.9	15.4	27.7	28.8	11.2	7.5	14.2	11.1
Belgium	19.6	20.8	25.3	25.1	11.5	12.2	14.1	13.2
France								
north	14.4	12.1	14.0	15.4	6.6	5.5	6.9	8.5
south	10.1	9.7	12.3	14.5	6.2	5.5	6.6	7.1
total	12.2	10.8	13.5	15.2	6.4	5.5	6.8	8.2
Italy	6.9	7.6	10.1	9.9	4.1	4.4	5.0	5.2
Spain	7.0	4.0	9.0	9.5	4.5	2.5	7.0	
Germany								
4 dept.	13.7	13.2	20.4	25.8	7.1	7.1	6.7	8.0
total	13.7	12.5	13.5	17.0				
Austria	12.8	12.9	19.2	19.3	4.0	4.0	4.6	5.2
Sweden					6.0	5.9	5.9	5.0
Russia					3.0	3.1	3.1	3.6

Source: Van Zanden (1998a).

International trade

- **Opportunities beyond limits of domestic market and agricultural productivity** – international **division of labor** (A. Smith: DL extent M);
- IT – **most dynamic element** of early modern European **economy**;
 - i.e. **Holland** – **shift** towards **livestock** and dairy, **fishing, urban expansion**;
 - Shift of **basic agriculture** into **Eastern Europe** (intensifying feudal methods of exploitation there);
- Initially little to do with **free markets** (FM) – **governments** trying to **force competing** nations **out** of markets;
 - **Mercantilism**: nations' **wealth** grows by achieving favorable **balance of trade**; **exclusion** of foreign **competitors** rather than attempt to gain **competitive strength**;
 - **Primary** economic **aim** of merchants and conquerors was to **create protected niche** in world market **without competition** from **other Europeans** (Estado da India, EIC, VOC);







Table 2–15. Carrying Capacity of Dutch and Other European Merchant Fleets, 1470–1824
(metric tons)

	1470	1570	1670	1780	1824
Netherlands	60 000	232 000	568 000	450 000	140 000
Germany	60 000	110 000	104 000	155 000	
Britain	n.a.	51 000	260 000	1 000 000	
France	n.a.	80 000	80 000	700 000	
Italy, Portugal, Spain	n.a.	n.a.	250 000	546 000	
Denmark, Norway and Sweden				555 000 ^a	
North America				450 000	

Table 1.4 Estimates of the size and regional distribution of the European merchant fleet 1500–1780

	Total fleet size (000 tons)	Capacity per 1000 inhabitants (tons)	Regional shares in European fleet capacity				
			Southern Europe	Netherlands	Great Britain	France	Hansa
1500	200–250	3.2–4.0	40	16	10–12	?	20
1600	600–700	7.7–9.0	25	33	10	12	15
1670	1000–1100	12.8–14.1	20	40	12	8–14	10
1780	3372	30.7	15	12	26	22	4

Sources: Romano (1962), Vogel (1915), Lane (1966, 5–20) Van Zanden (1987, 587), Wilson (1977, 129).

Table 2–18a. **Dutch Involvement in European Military Conflicts, 1560s–1815**

***Wars with Spain to establish
and guarantee Independence***

1560s–1609
1621–48

***Wars of commercial
interest with England***

1652–4
1665–7
1672–4
1780–3

***Wars over European
balance of power,
territory & religion***

1618–48: 30 Years War
1688–97: War of League of Augsburg
1701–13: War of Spanish Succession
1756–63: Seven Years War
1795–1815: Revolutionary & Napoleonic Wars

Table 2–20. **Commodity Composition of European Exports from Asia to Europe, 1513–1780**

Portugal (Estado da India — state trading, headquarters Goa)
(per cent by weight)

	1513–19	1608–10
Pepper	80.0	69.0
Moluccan Spices	9.0	0.03
Other Spices	9.4	10.9
Textiles	0.2	7.8
Indigo	0.0	7.7
Other	1.4	4.6

Dutch East India Company (VOC corporate monopoly, headquarters Batavia)
(per cent by value)

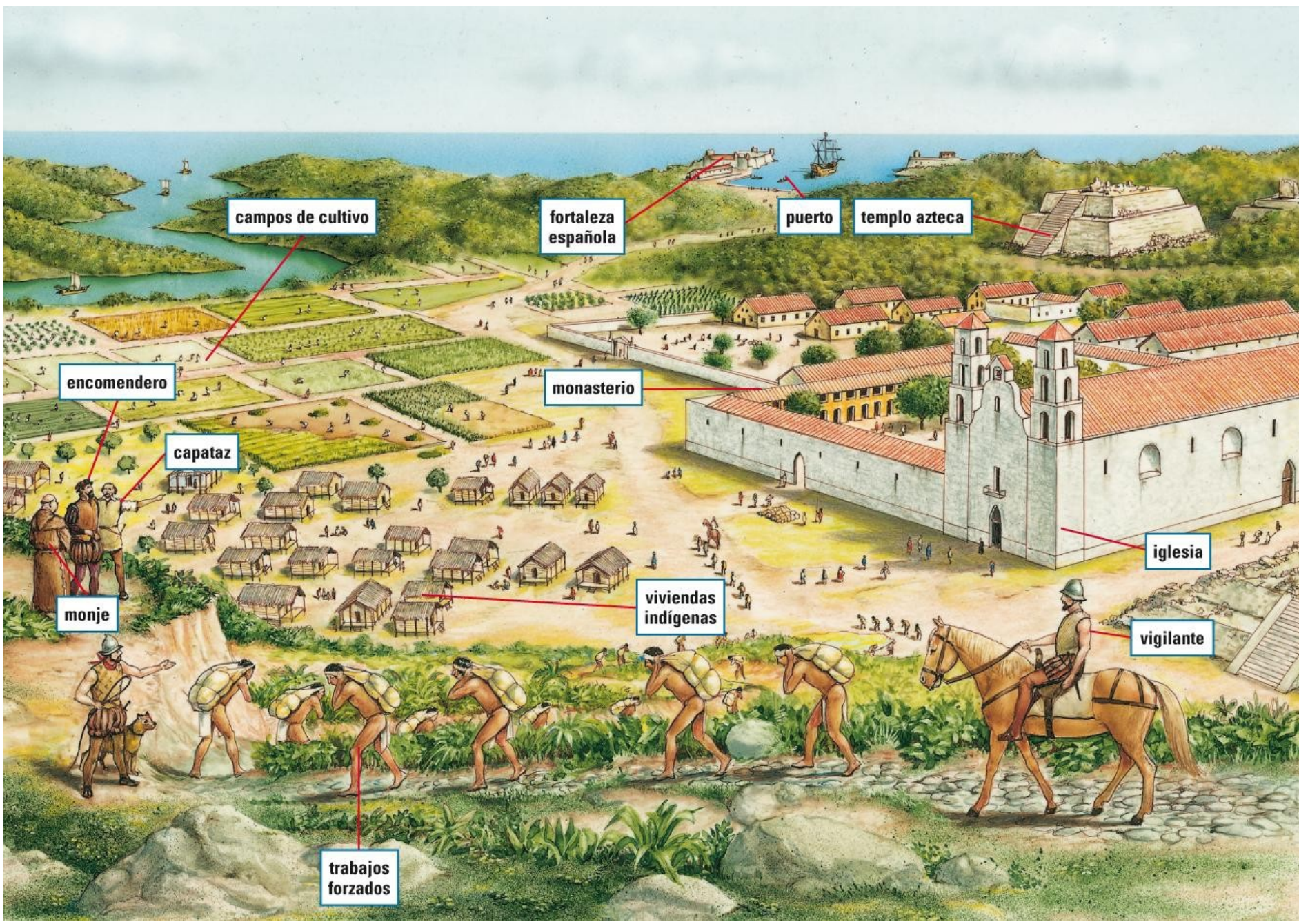
	1619–21	1778–80
Pepper	56.4	11.0
Other Spices	17.6	24.4
Textiles & Raw Silk	16.1	32.7
Coffee & Tea	0.0	22.9
Other	9.9	9.0

English East India Company (EIC corporate monopoly operating
mainly from Bombay, Calcutta and Madras)
(per cent by value)

	1668–70	1758–60
Pepper	25.3	4.4
Textiles	56.6	53.5
Raw Silk	0.6	12.3
Tea	0.03	25.3
Other	17.5	4.5

The Struggle for Colonial Dominion, 1700—1763.





campos de cultivo

fortaleza española

puerto

templo azteca

encomendero

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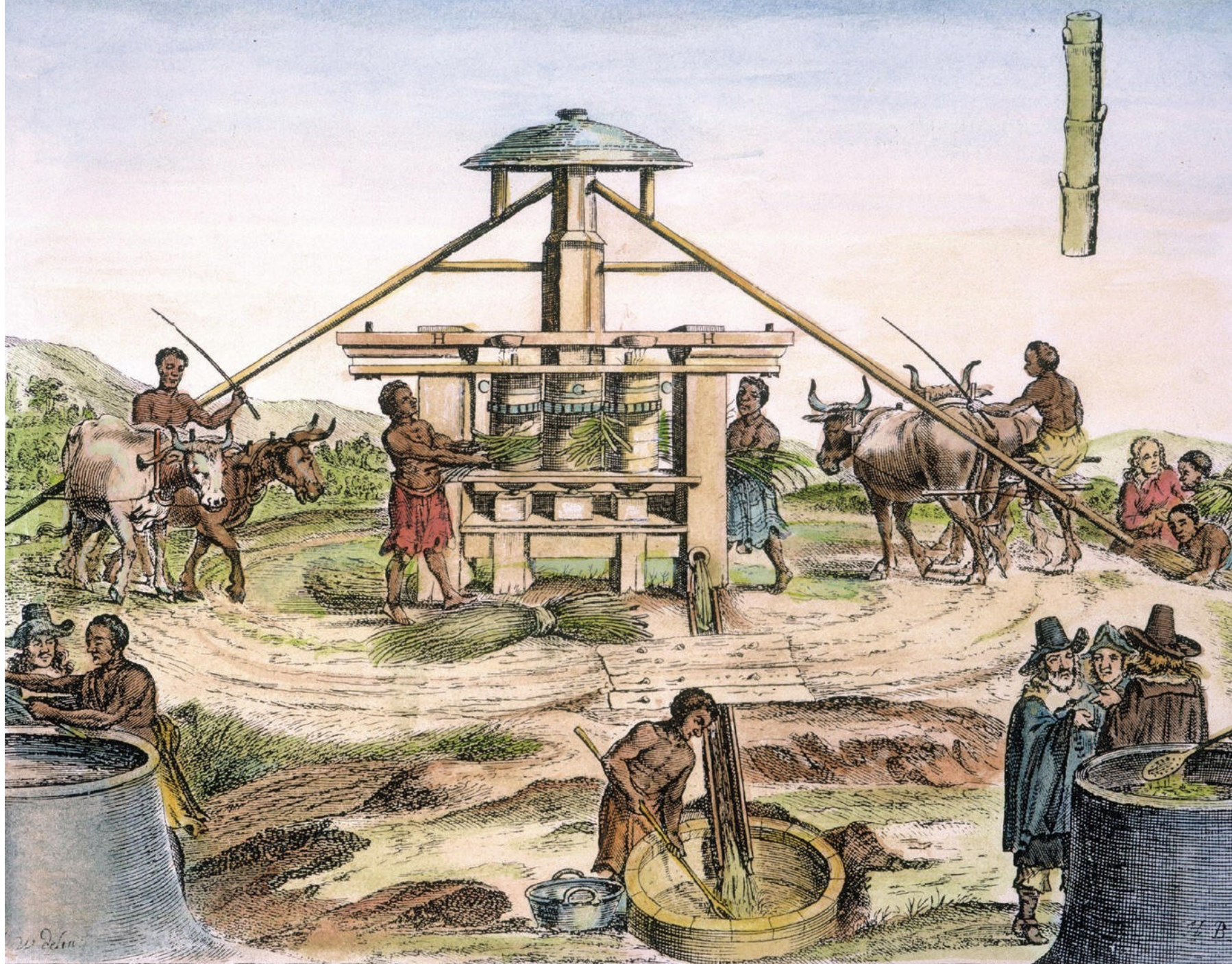
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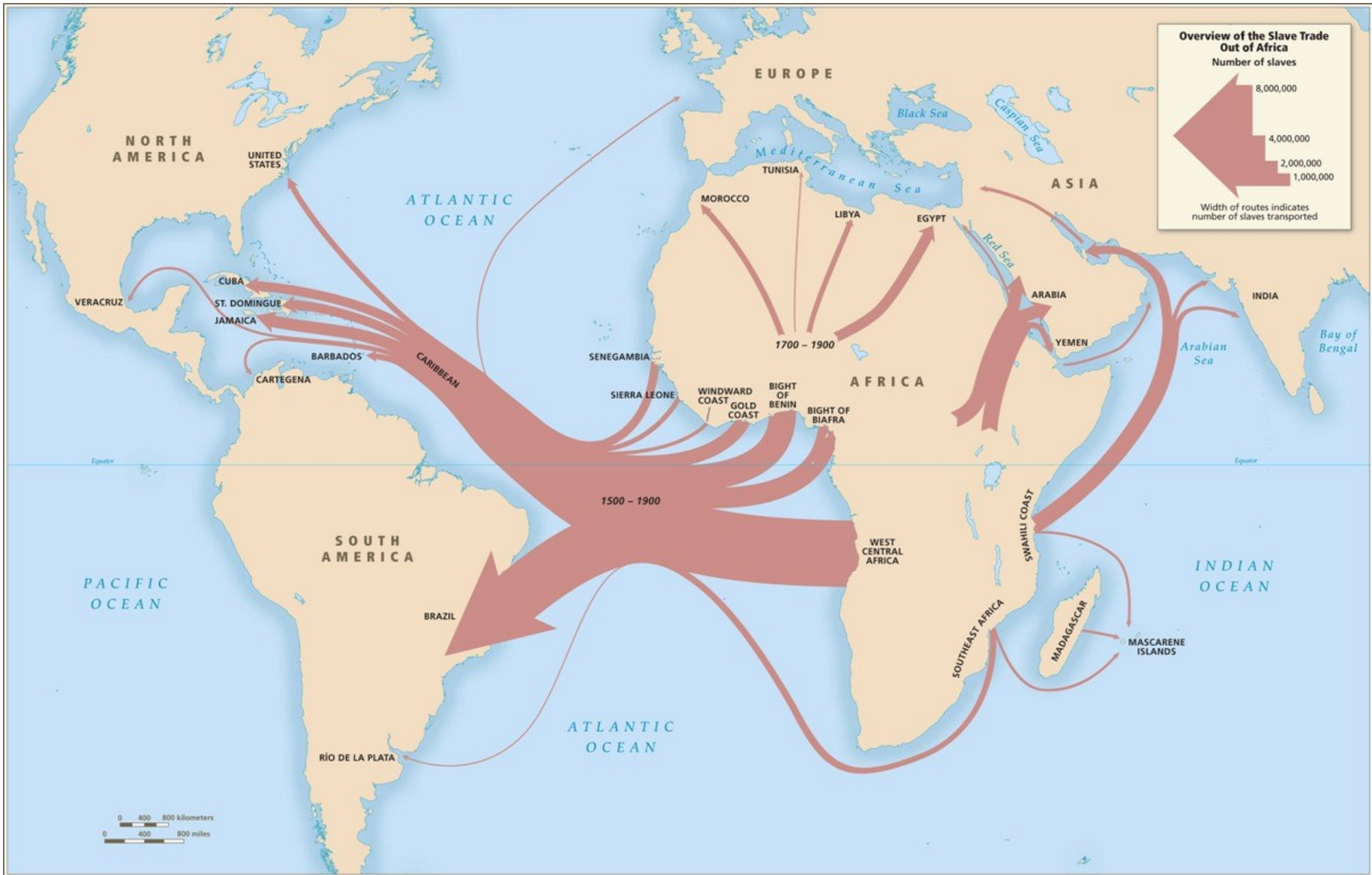
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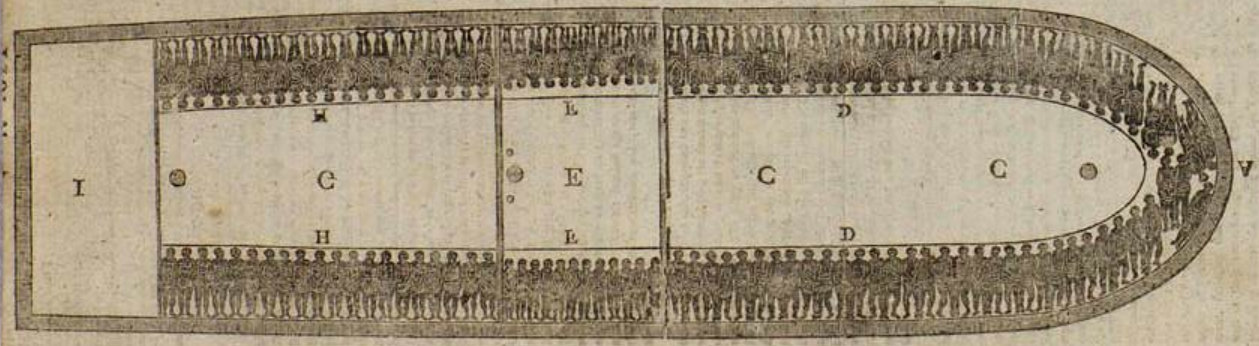
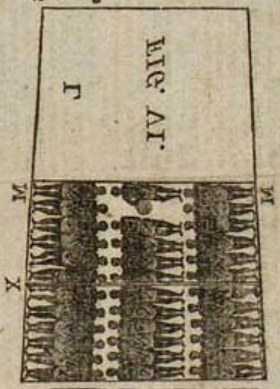
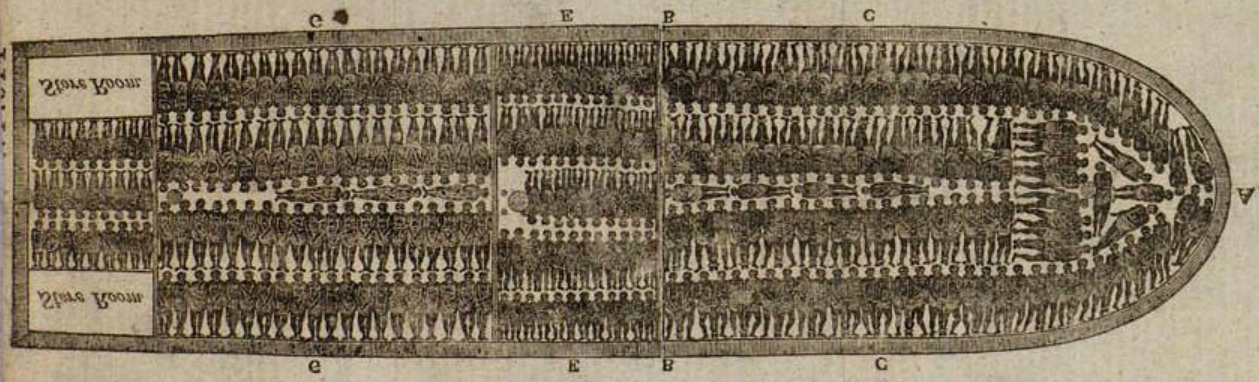
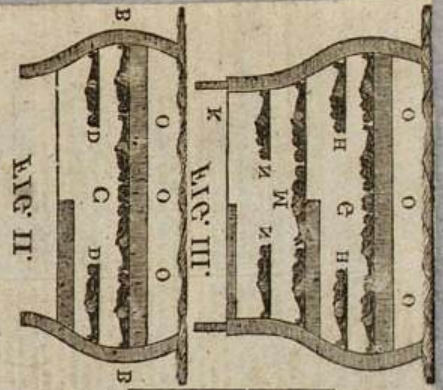
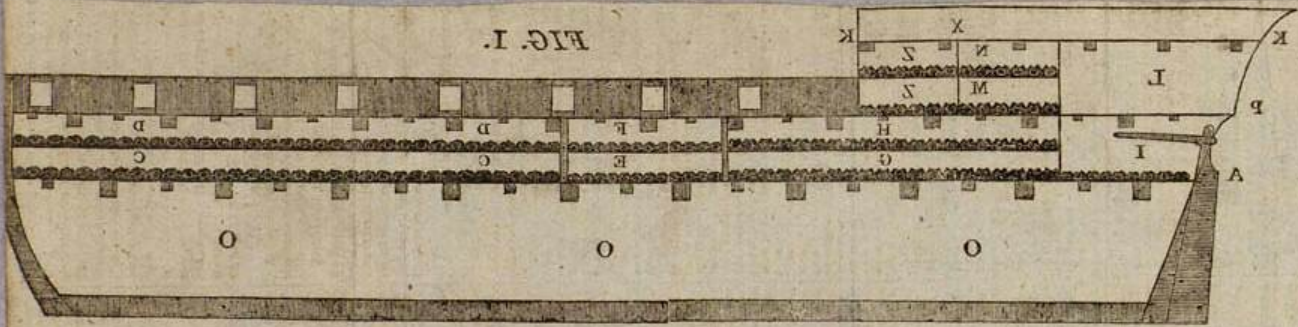
viviendas indígenas

vigilante

trabajos forzados







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Table 2–5. Atlantic Slave Shipments by Portugal and Its Competitors, 1701–1800
(000)

England	2 532	North America	194
Portugal	1 796	Denmark	74
France	1 180	Other	5
Netherlands	351	Total	6 132

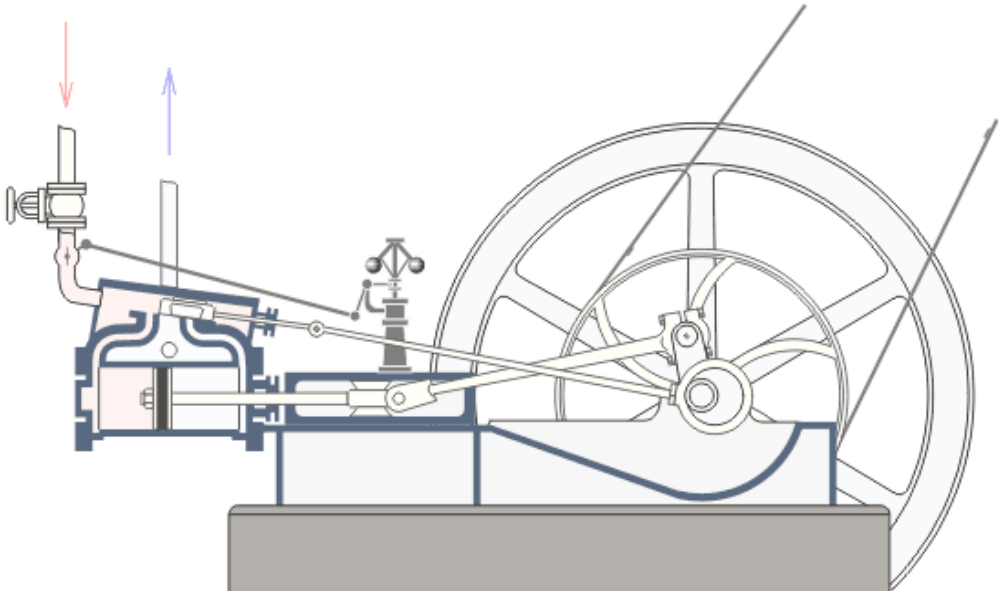
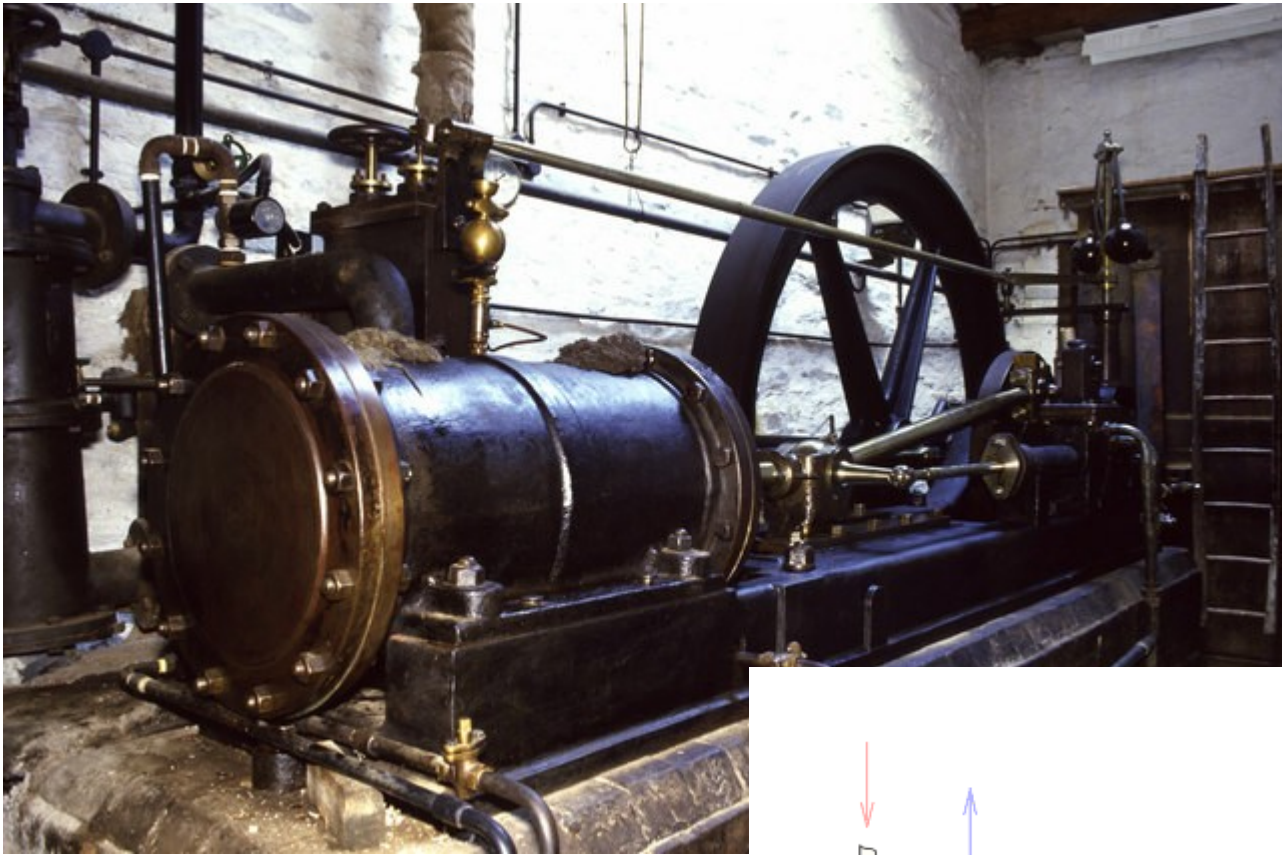
Source: Lovejoy (1982), p. 483.

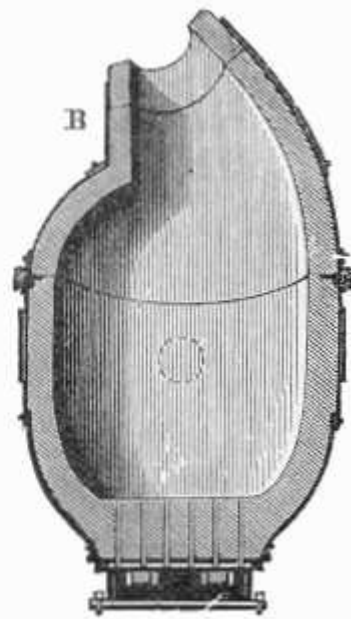
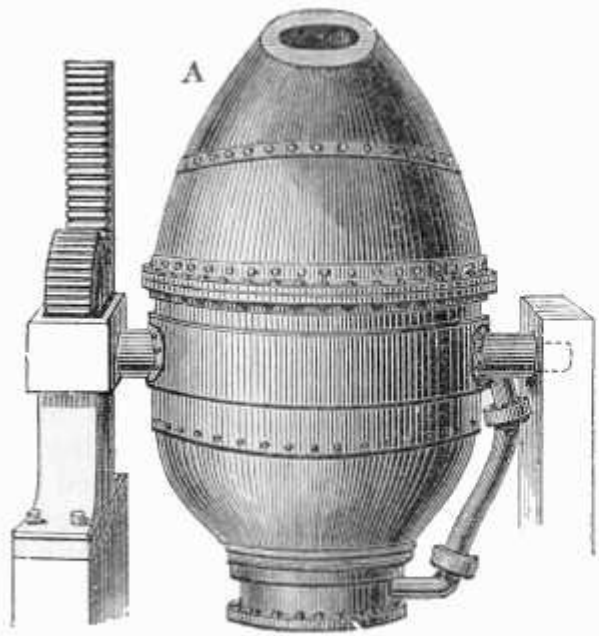
Industrial Revolution

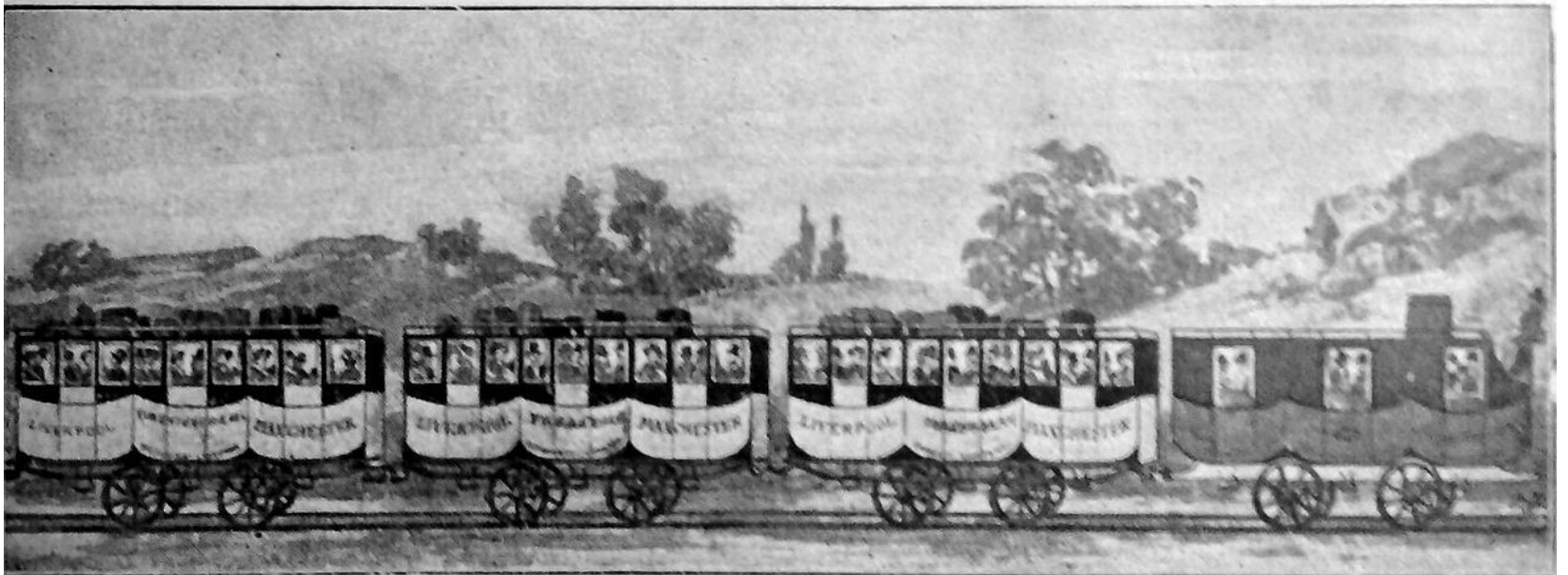
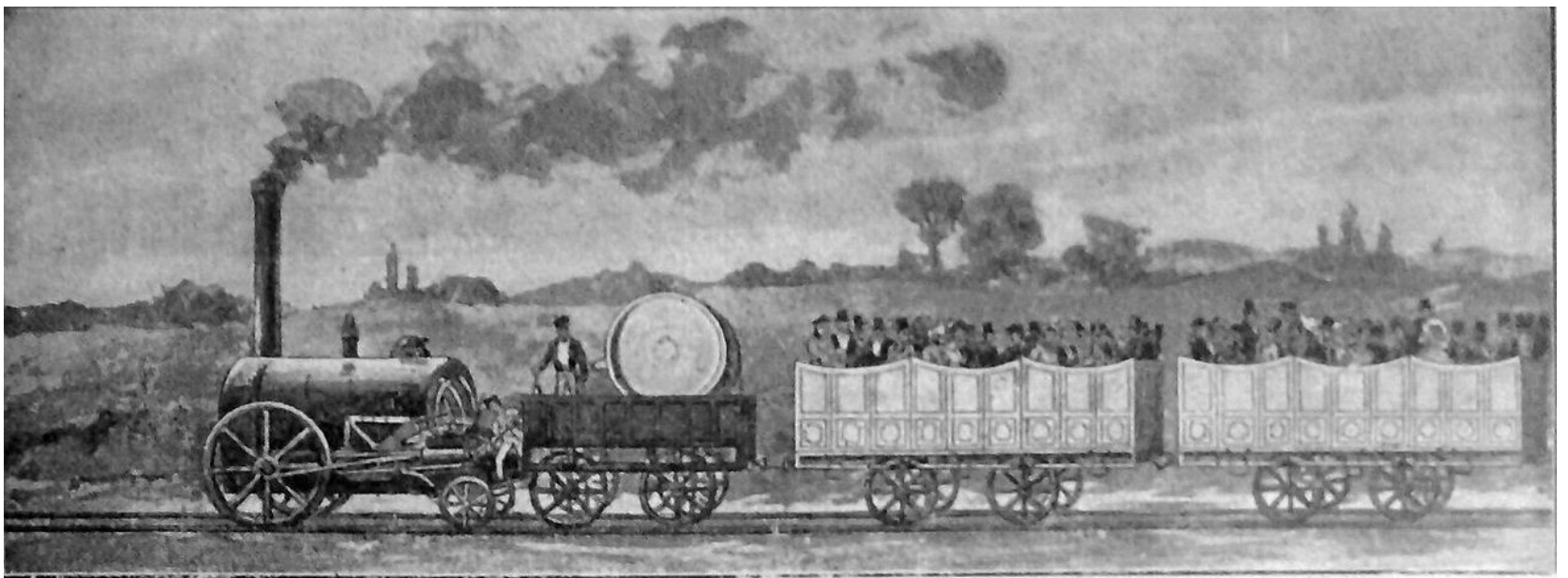
- **18th cent. series of inventions transformed the British cotton manufacture: new mode of production – the factory system;**
- **Principles: (*Landes*)**
 - The **substitution** of machines (rapid, regular, precise, tireless) **for human skill and effort** (converting **heat into work**);
 - Use of **new** and more abundant raw materials (substitution of **coal for wood and animal**);
- In **past** – **better living standards** had always been **followed** by a **rise in population**-> eventually **consumed** the **gains** (**Malthusian trap**) (*Clark*);
- **IR**: for the **first time** in history – both the economy and knowledge were growing fast enough to generate a continuing flow of improvements -> considerably **rising standard of living**;

Steam power

- **Vacuum pump** (*Savery* 1698);
- First **steam engine** *Newcomen* (1705);
- *Watt* (1768) engine with separated **condenser** (profitable **away** from the **mines**);
- 15 years to adapt for **rotary motions**;
- **High pressure** engines more compact and used to drive **ships** and land **vehicles** (another 25 years);
- *Parsons* (1884) replacing the piston with a **steam turbine**;
- *Darby* (1709) **coke smelt** of iron;
- **Cast iron** → pots and pans, pipes; **moving parts** require resilience and elasticity - **steel**;
- **Cheap steel** – *Bessemer* 1856;
 - transformed industry and transportation (arms, razors vs. **rails** and **ships**);
- **Powered machinery**
 - **Device to move a tool** – to do the work of the hand;
 - **Enhance speed** and **force** (printing press, drill, spinning wheel);
 - **Battery** of tools – multiply the work performed by a single motion;
- Next step – simplifying by dividing, **breaking up the task** into a succession of **repeatable processes**;









(Landes)

- **14th Italy** –water powered **silk spinning**– industry prospered for centuries;
- **England** built a large **water powered mill** employing hundreds workers;
 - comparable to the **cotton mills** of later era –
 - more than **enough** to accommodate England’s **demand** for silk yarn – costly material, small clientele;
 - **No industrial revolution** of silk;
- **Wool** much more important in Europe - **role of cotton** accident;

- System of **rural manufactures** (dispersion of activity - **costs** of distribution and collection);
 - **Idea of large workshops** where spinners and weavers under **supervision**;
- Manufacturers had to **pay to persuade people out of cottages** and into mills –
 - So long as the **equipment** in the **mill** was the **same** as in the cottage, mill **production cost more**;
- It took **power machinery** to **make the factory competitive**
 - In spite higher wages mills still seemed a prison;
 - Where to **get labor force**? **Children**, often conscripted from the poorhouses and **woman**, especially unmarried;
- **Wool fibers troublesome** - **cotton docile**, investor turned attention;

