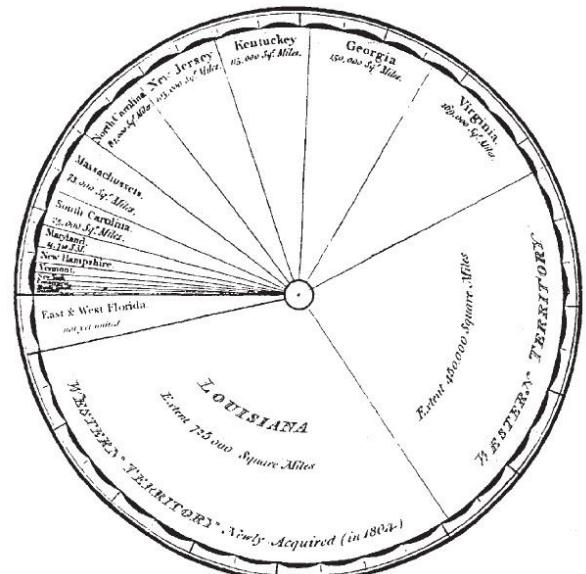
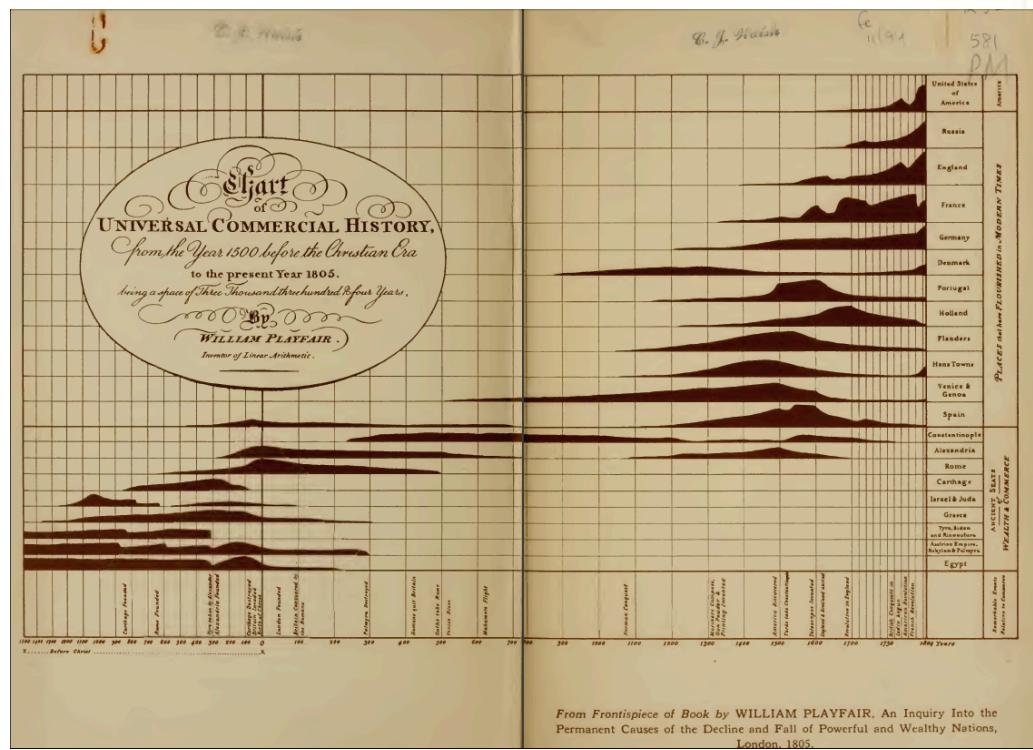
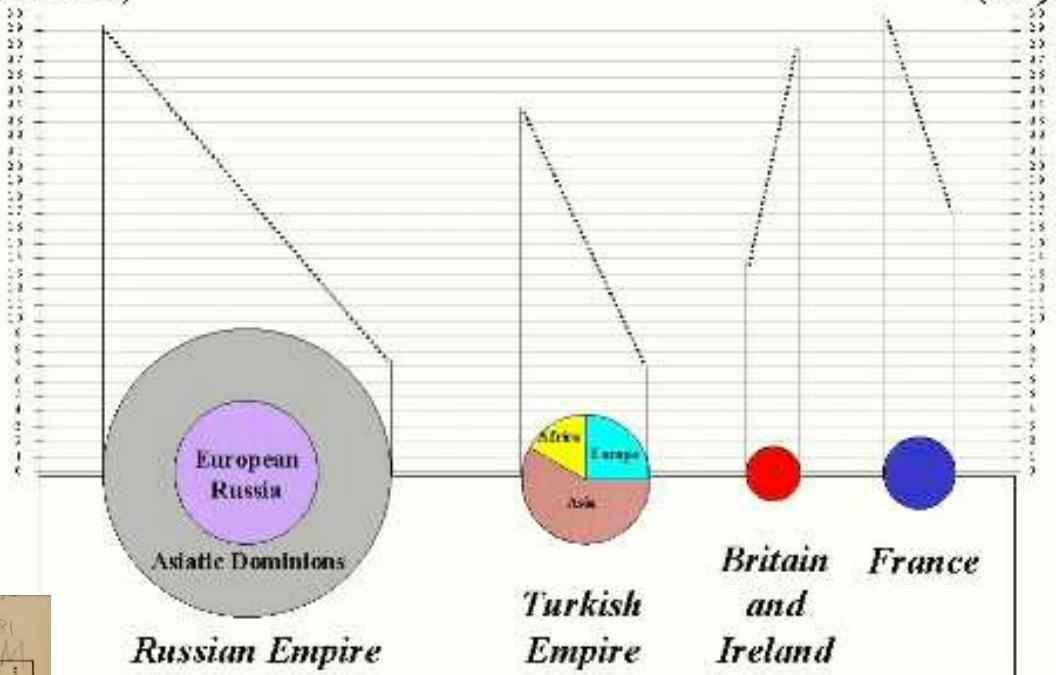


1800

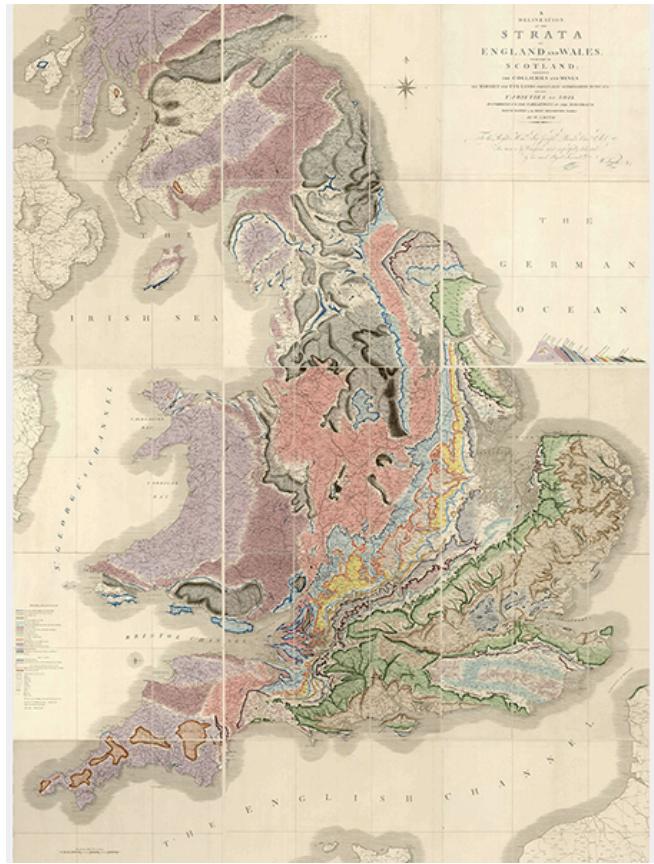
- "age of enthusiasm" in graphics and thematic cartography
- explosive growth in statistical graphics and thematic mapping
- bar & pie charts, histograms, line graphs, time-series, contour plots
- from single maps to comprehensive atlases,
- depicting data on a wide variety of topics (economic, social, moral, medical, physical, etc.)
- a wide range of novel forms of symbolism



Population
(millions)



pie & circle charts & time series
(w. playfair, 1801)



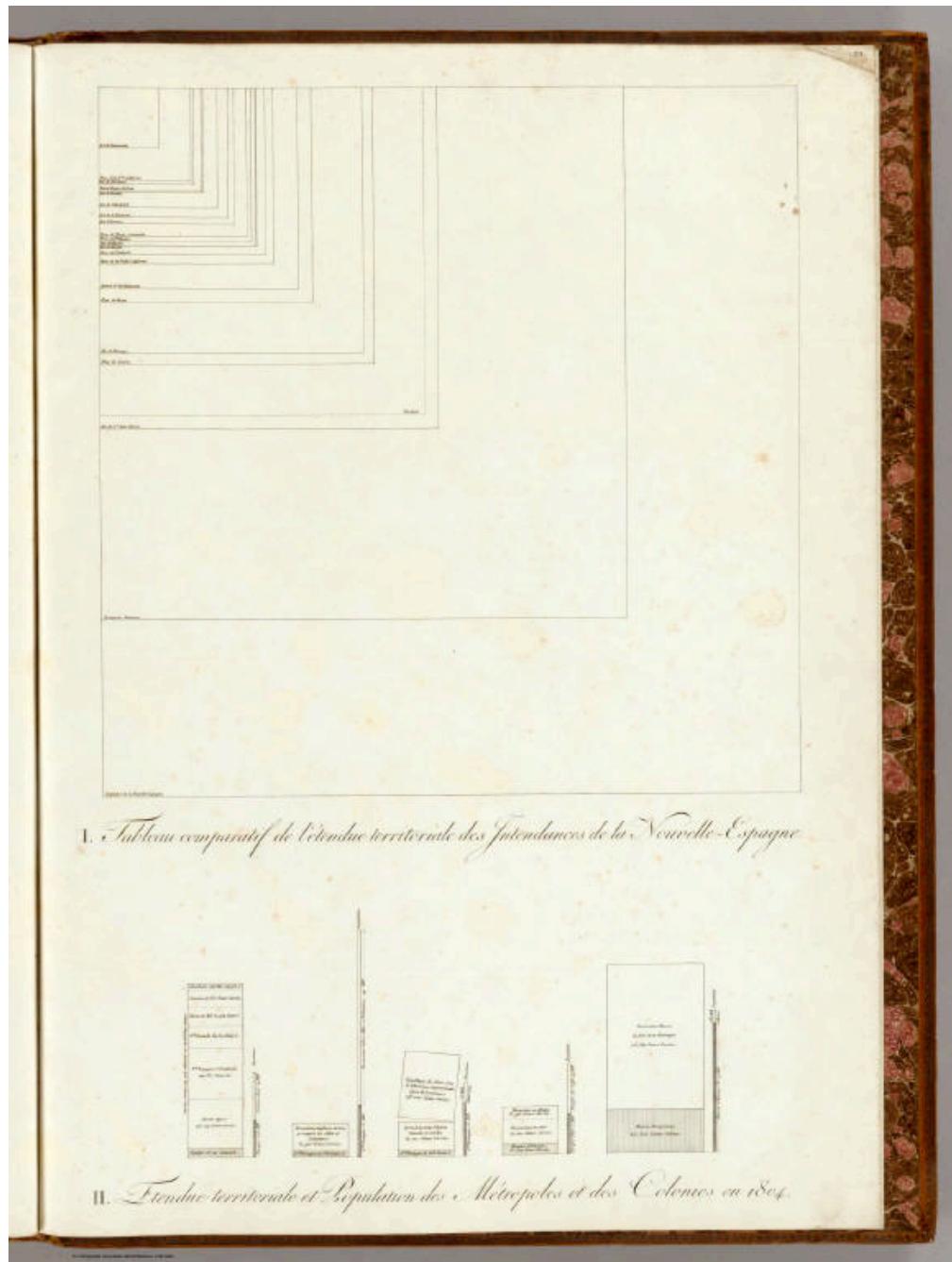
first uk geological map (w. smith, 1805)



"the map that changed the world" [winchester,2001]

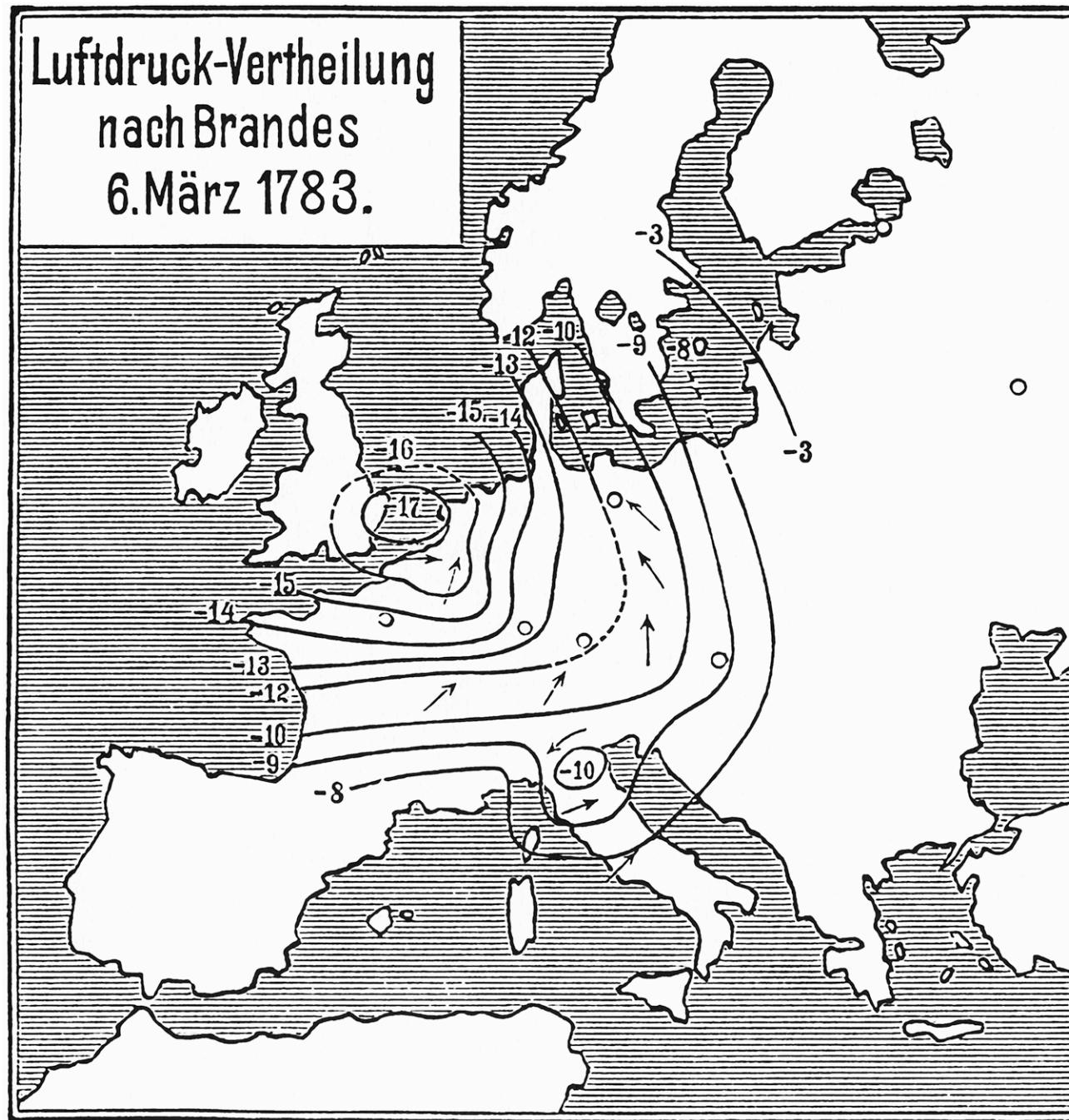


subdivided bar graph (a. von humboldt, 1811)



subdivided bar graphs & superimposed squares,
showing the relative size of *mexican* territories
and populations in the colonies

first weather map (h.w. brandes, 1816)



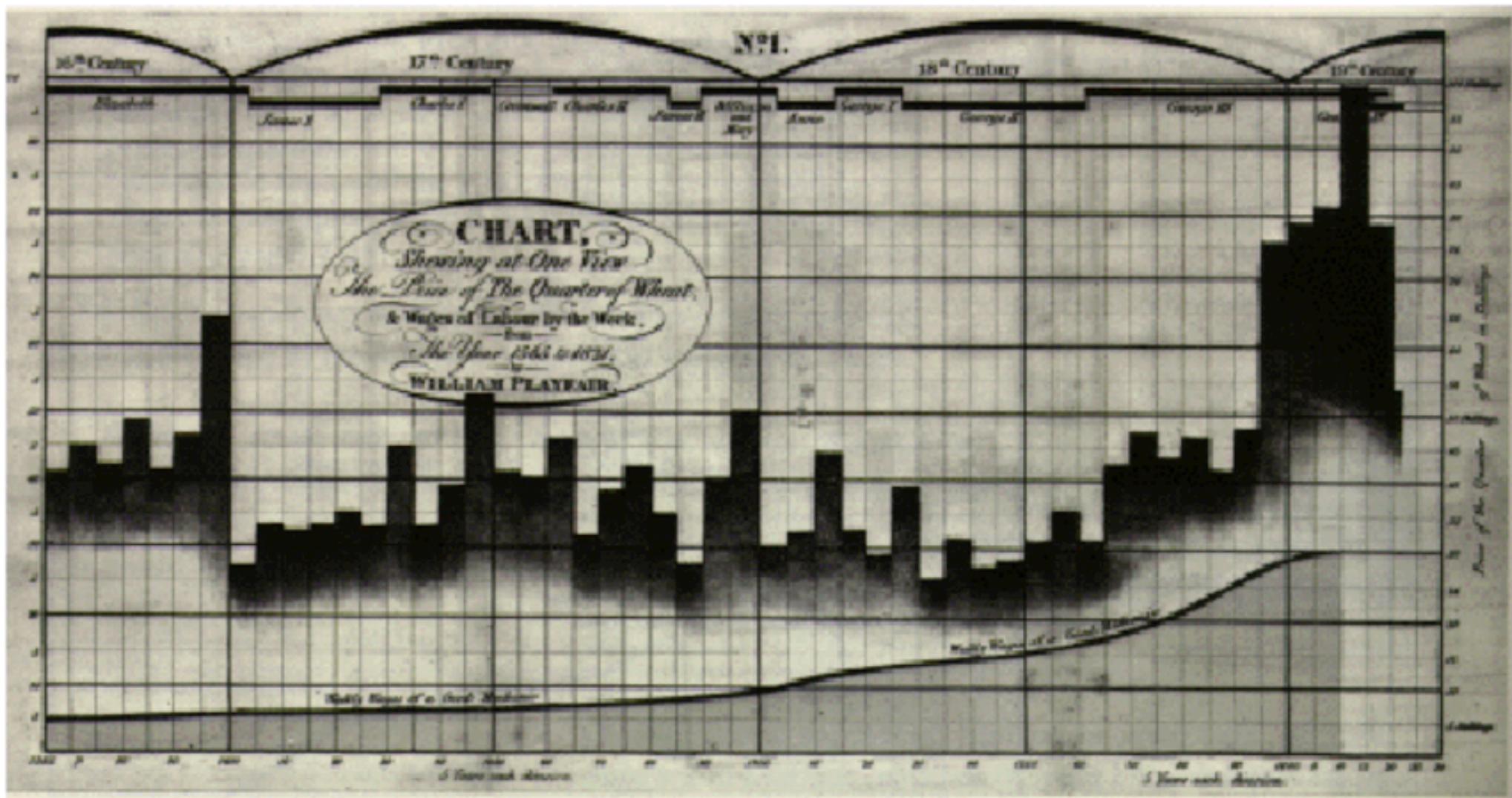
first graph of isotherms (a. von humboldt, 1817)



berghaus' 1849 atlas

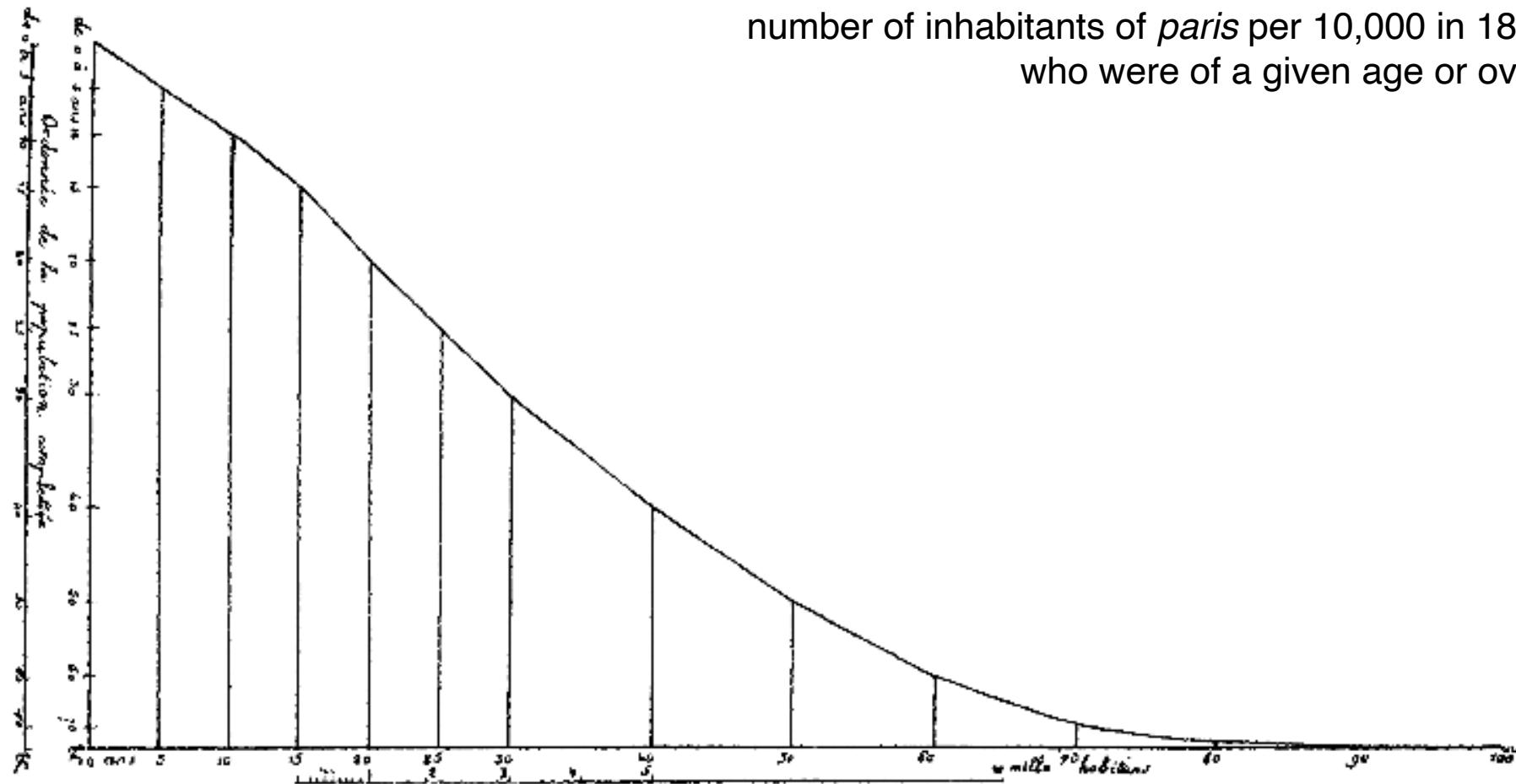
mean temperature around the world by latitude and longitude.

multiple time series (w. playfair, 1821)

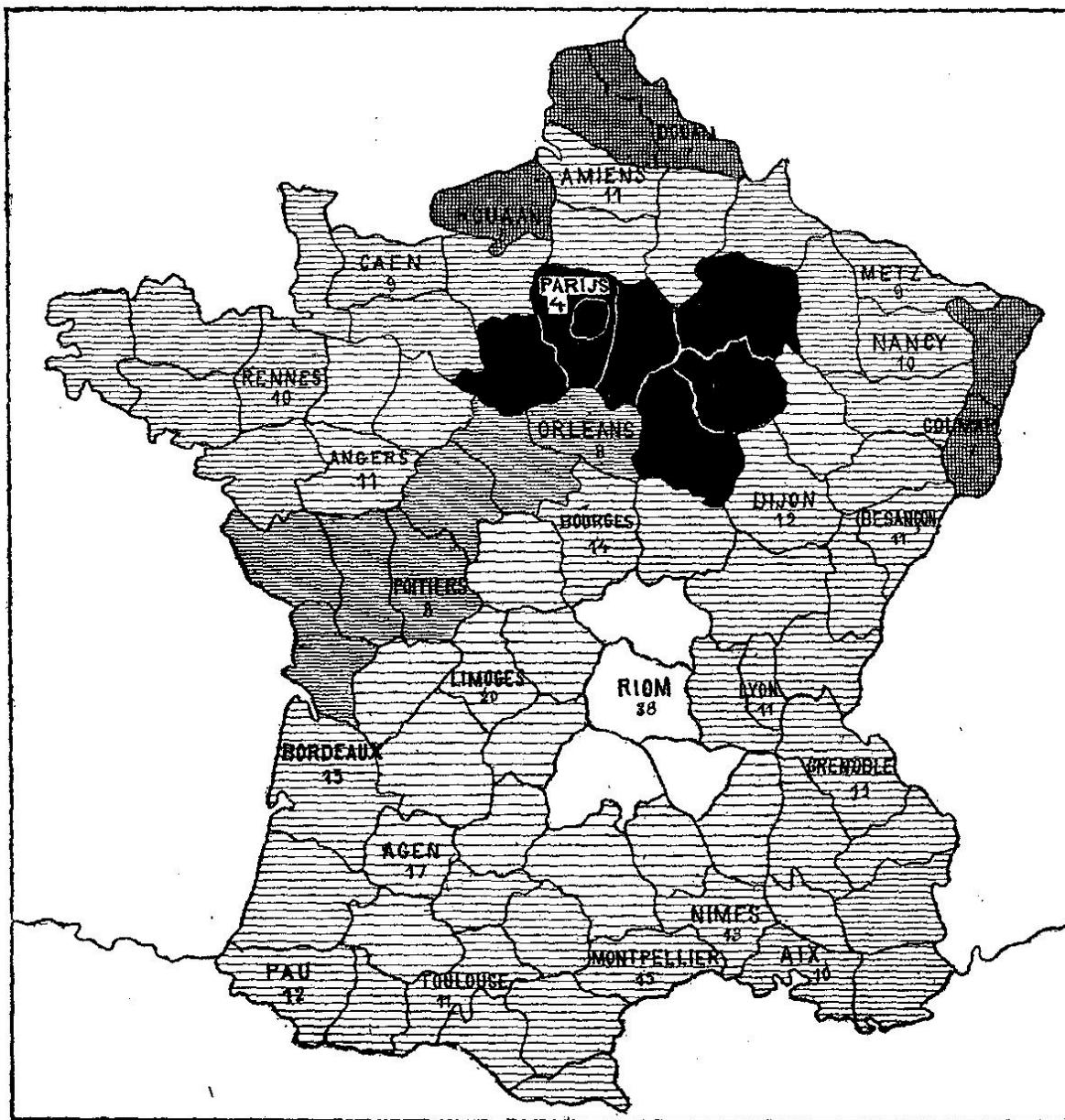


time series graph of prices, wages, and ruling monarch over a 250 year period

first cumulative frequency curve (j.b.j. fourier, 1821)

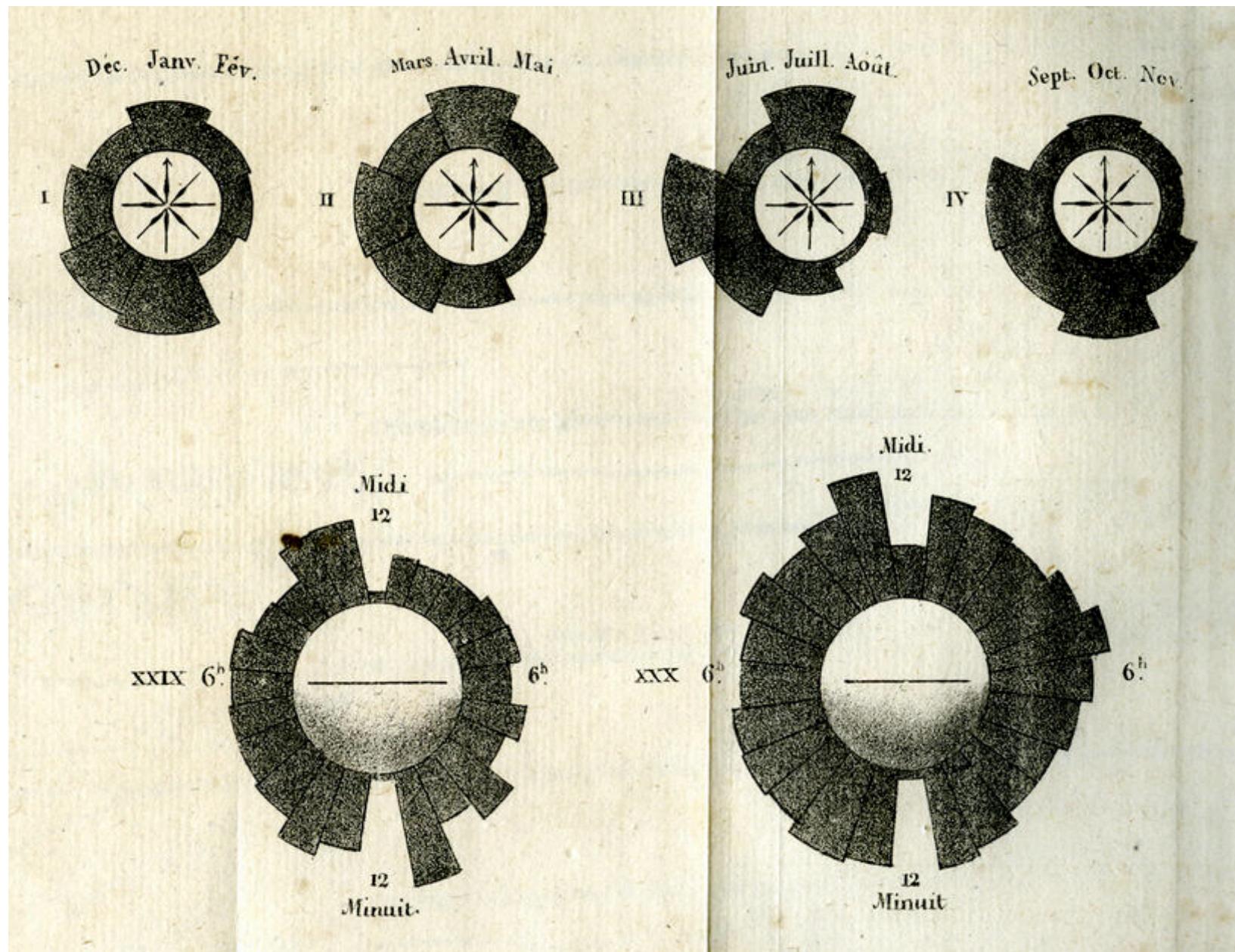


first chloroplet map (p.c. dupin, 1826)



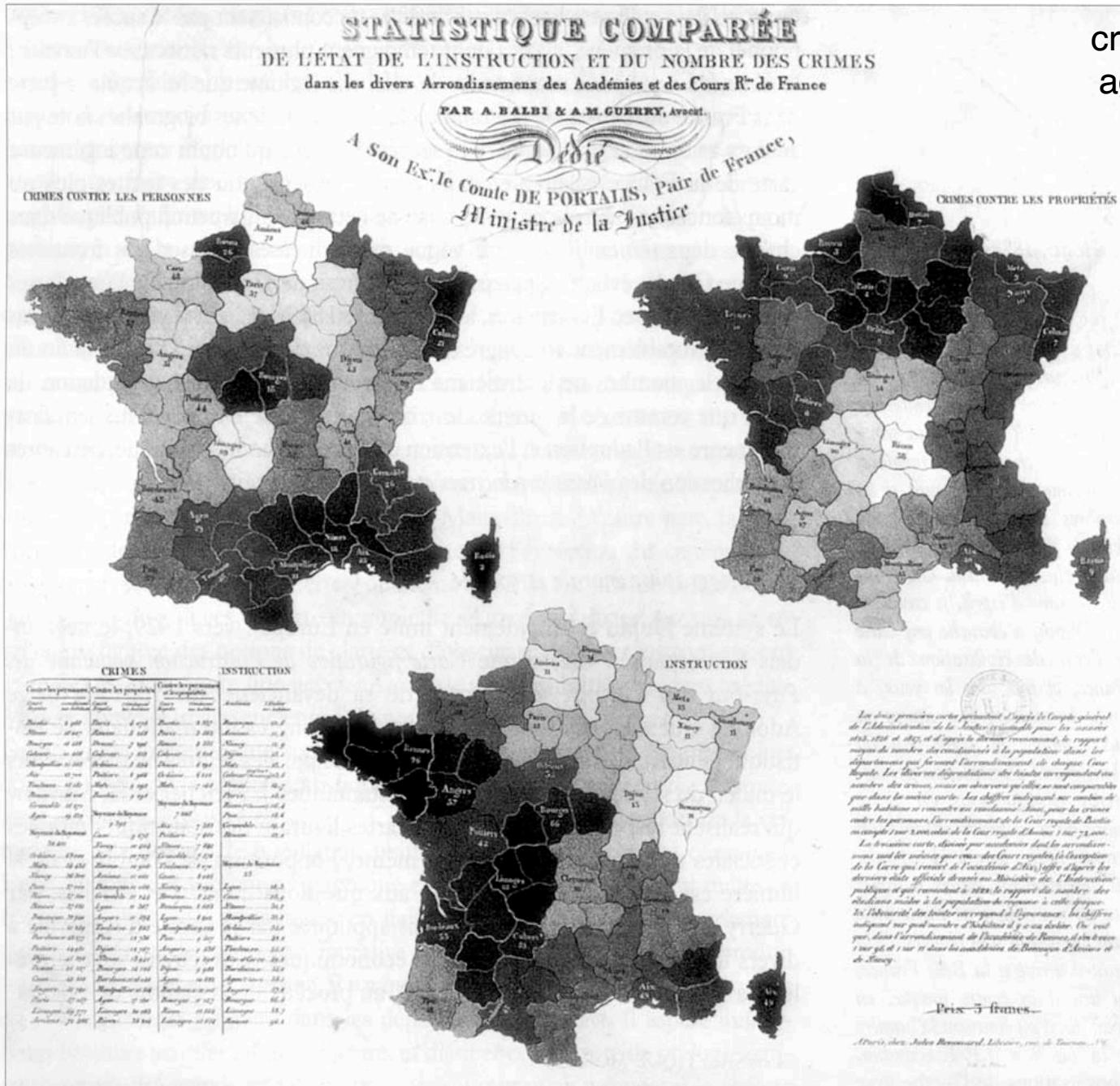
- shadings from black to white
- distribution and intensity of illiteracy in *france*
- first modern statistical map

first polar area chart (a.m. guerry, 1829)

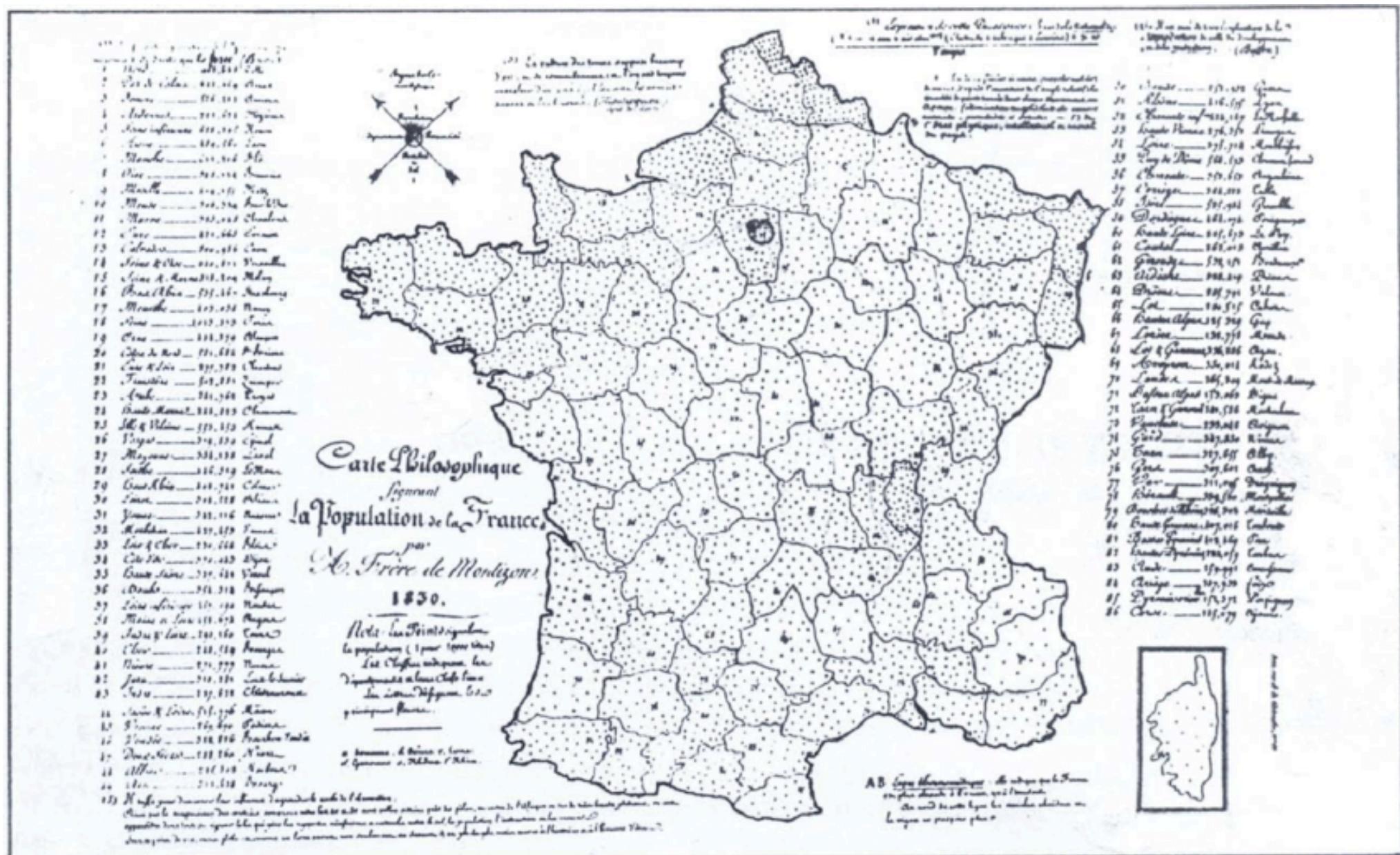


daily phenomena: direction of the wind in 8 sectors, births and deaths by hour of the day.

first comparative chloroplet maps (a.m. guerry & a. balbi, 1829)

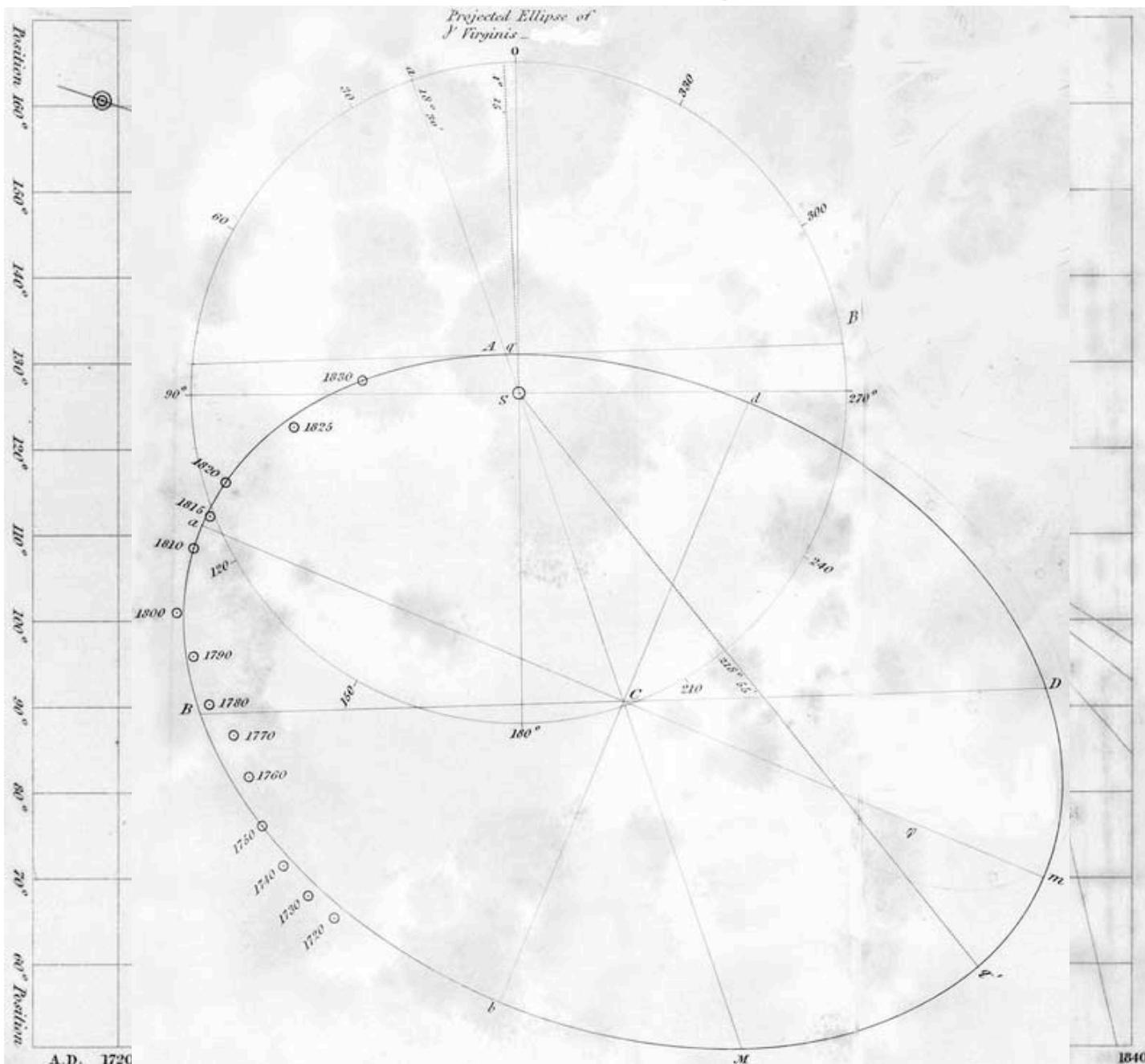


first dot map (a.j.f. de montizon, 1830)



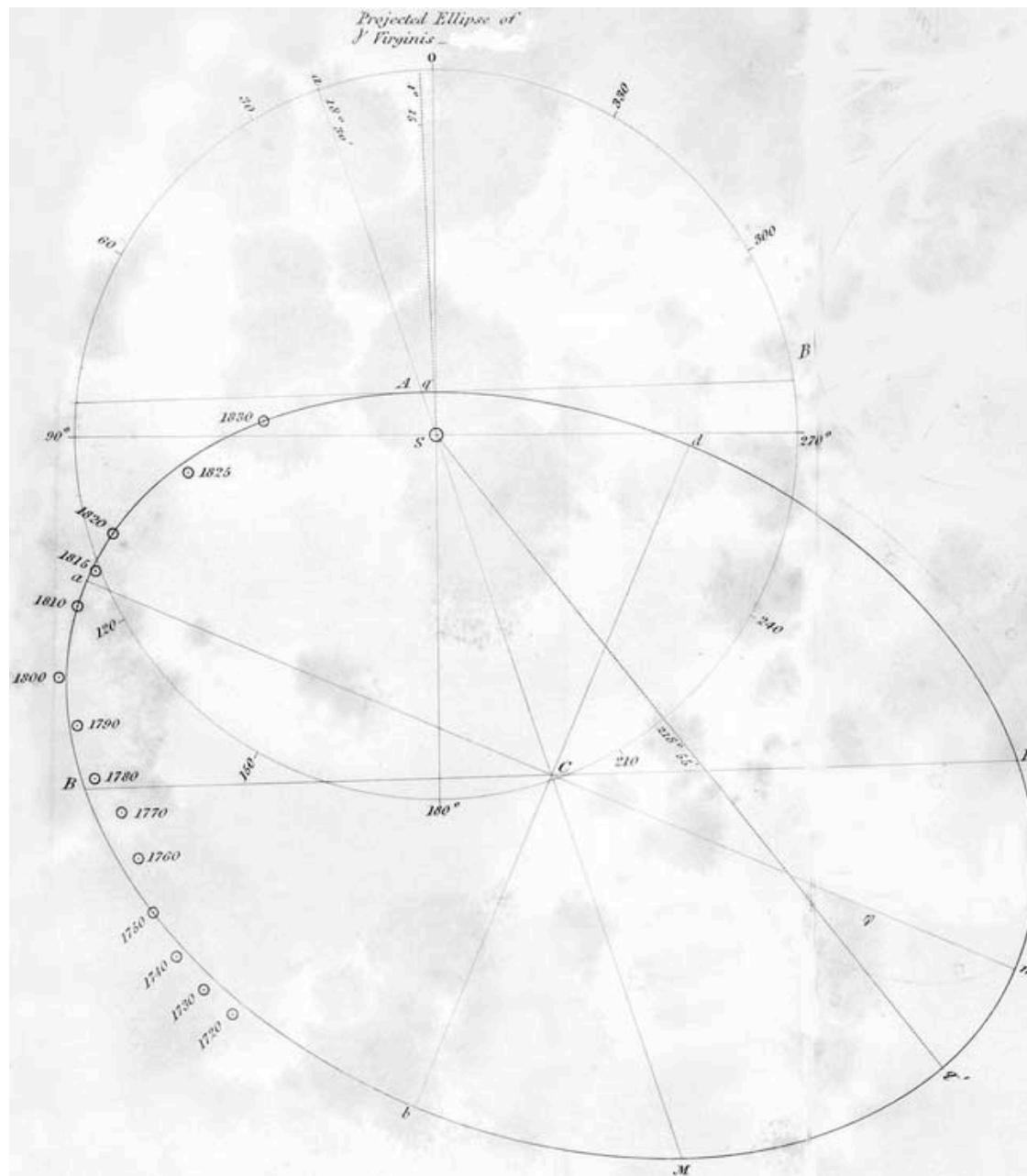
population by department, 1 dot = 10000 people

first fitting curve (j.f.w. herschel, 1832)

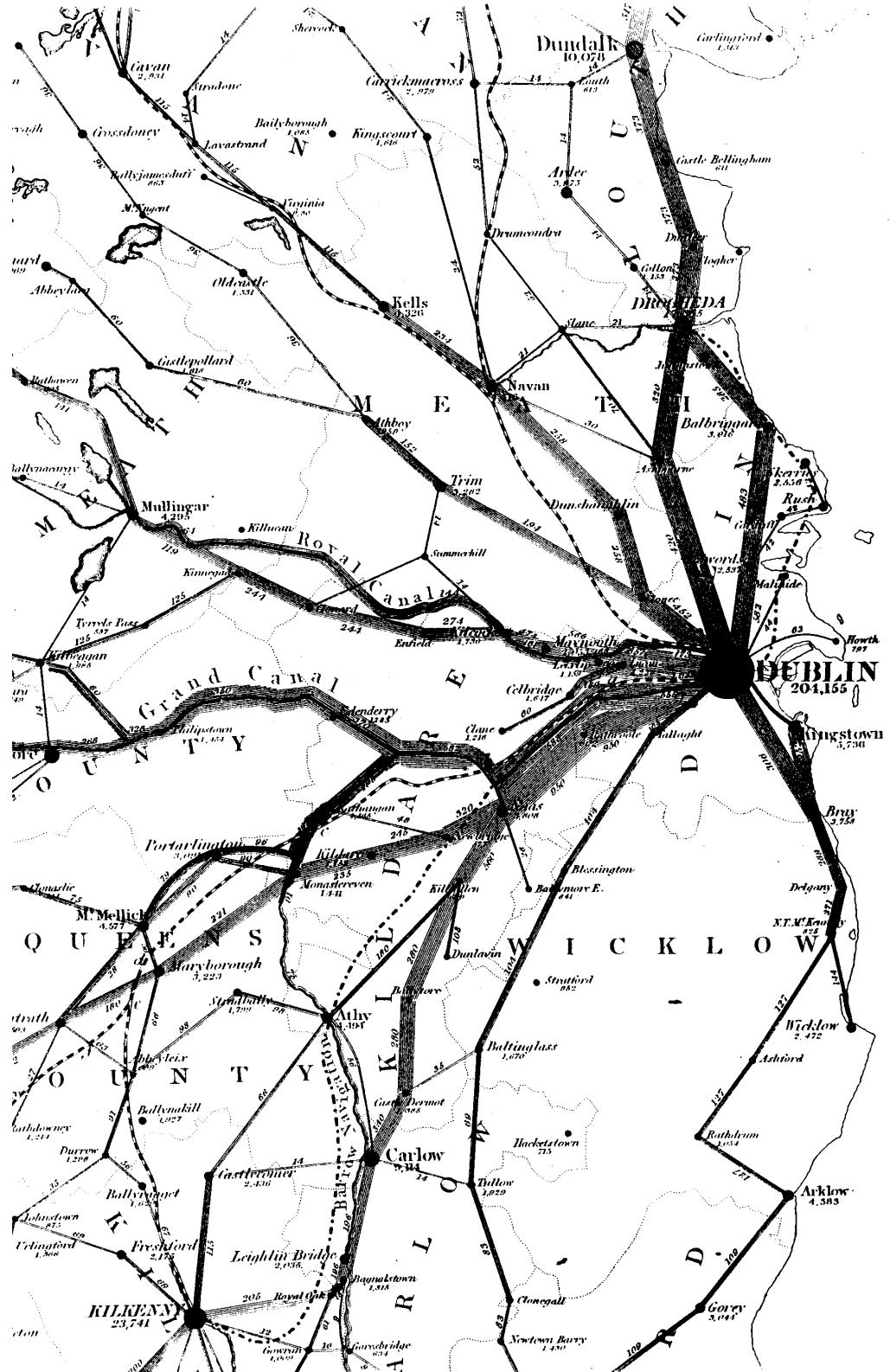


position vs time of *gamma virginis*

first fitting curve (j.f.w. herschel, 1832)



derived double orbit of *gamma virginis*

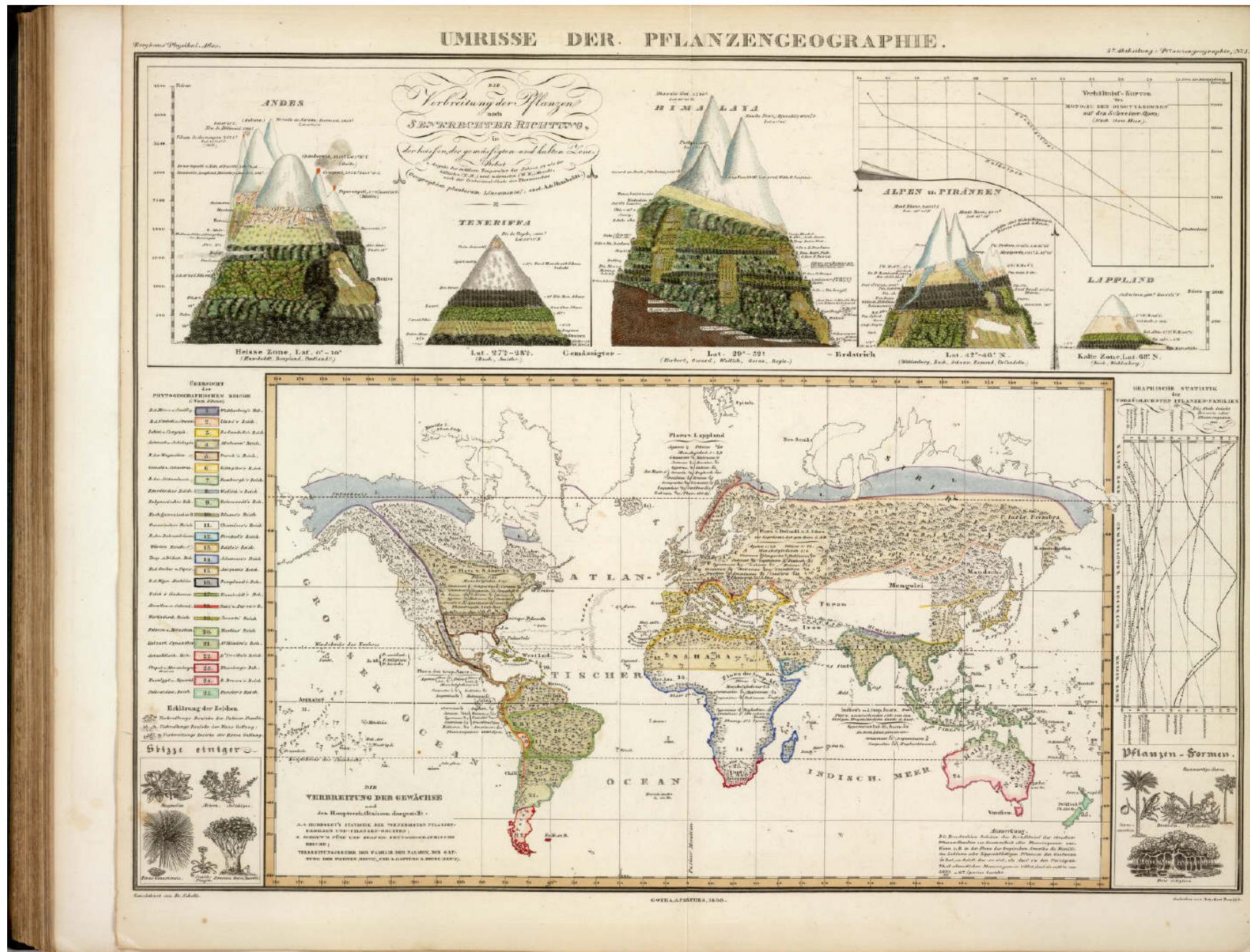


first flow map (h.d. harness, 1837)

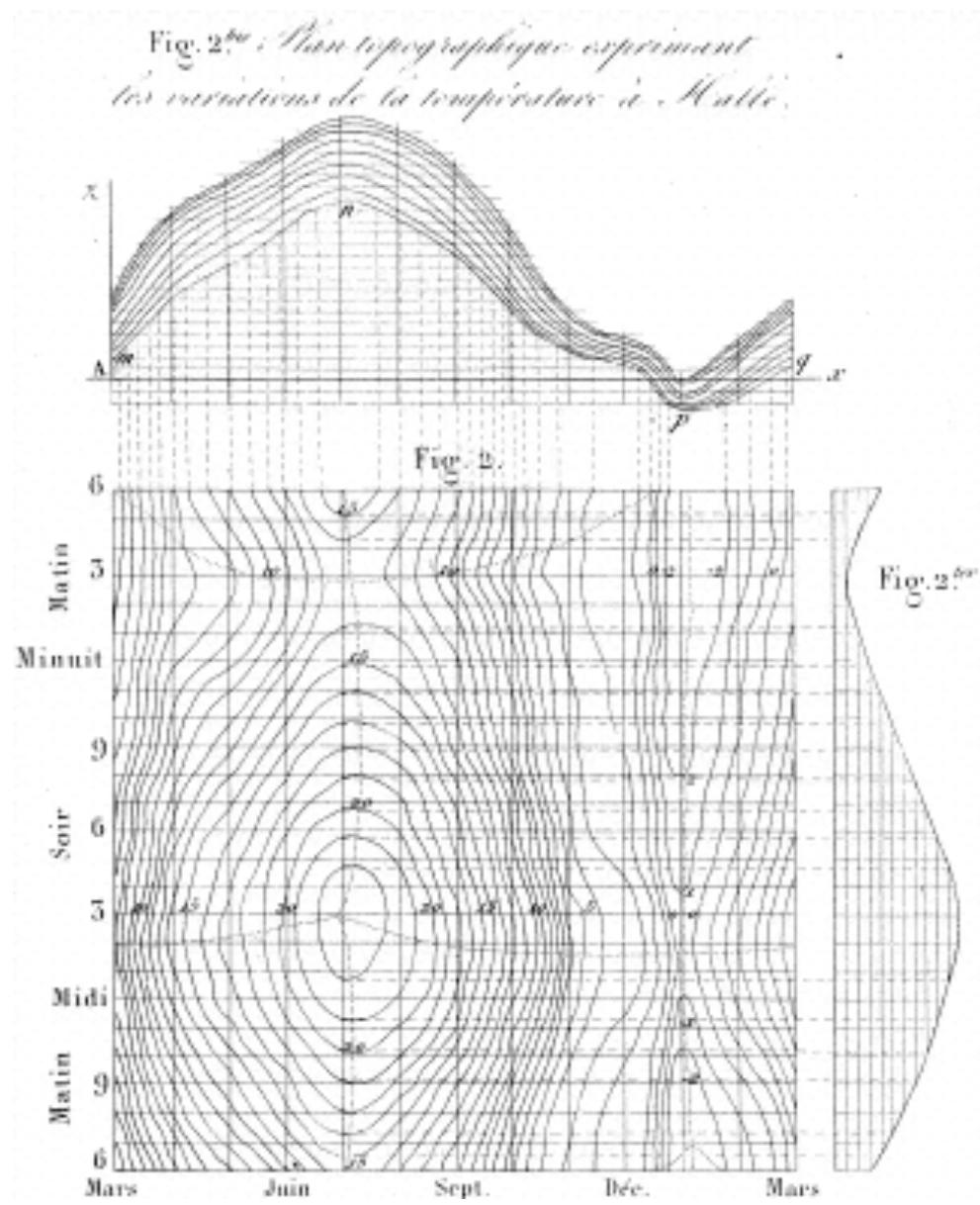
passengers in *ireland*

width proportional to number of passengers

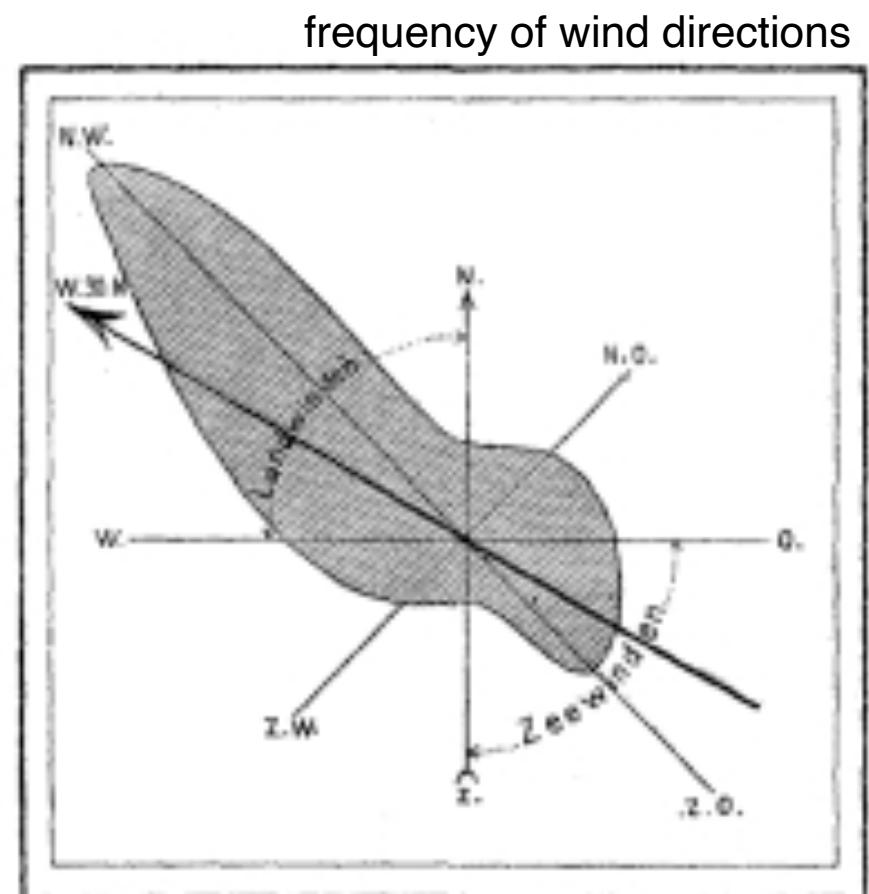
plant atlas (h. berghaus, 1838)



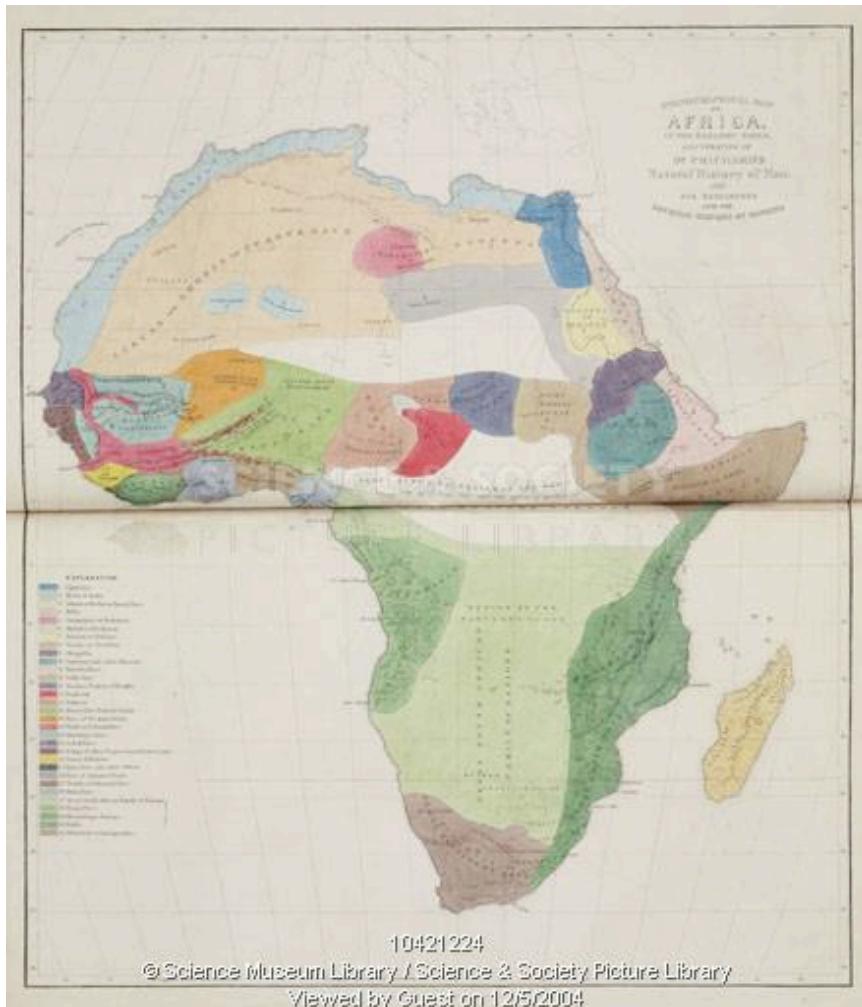
first 3d contour map & polar coordinates (I. Lalanne, 1843)



temperature x hour x month



first ethnographic maps (a.k. johnstone & j.c. pritchard, 1843)



distribution of ethnic groups throughout the world

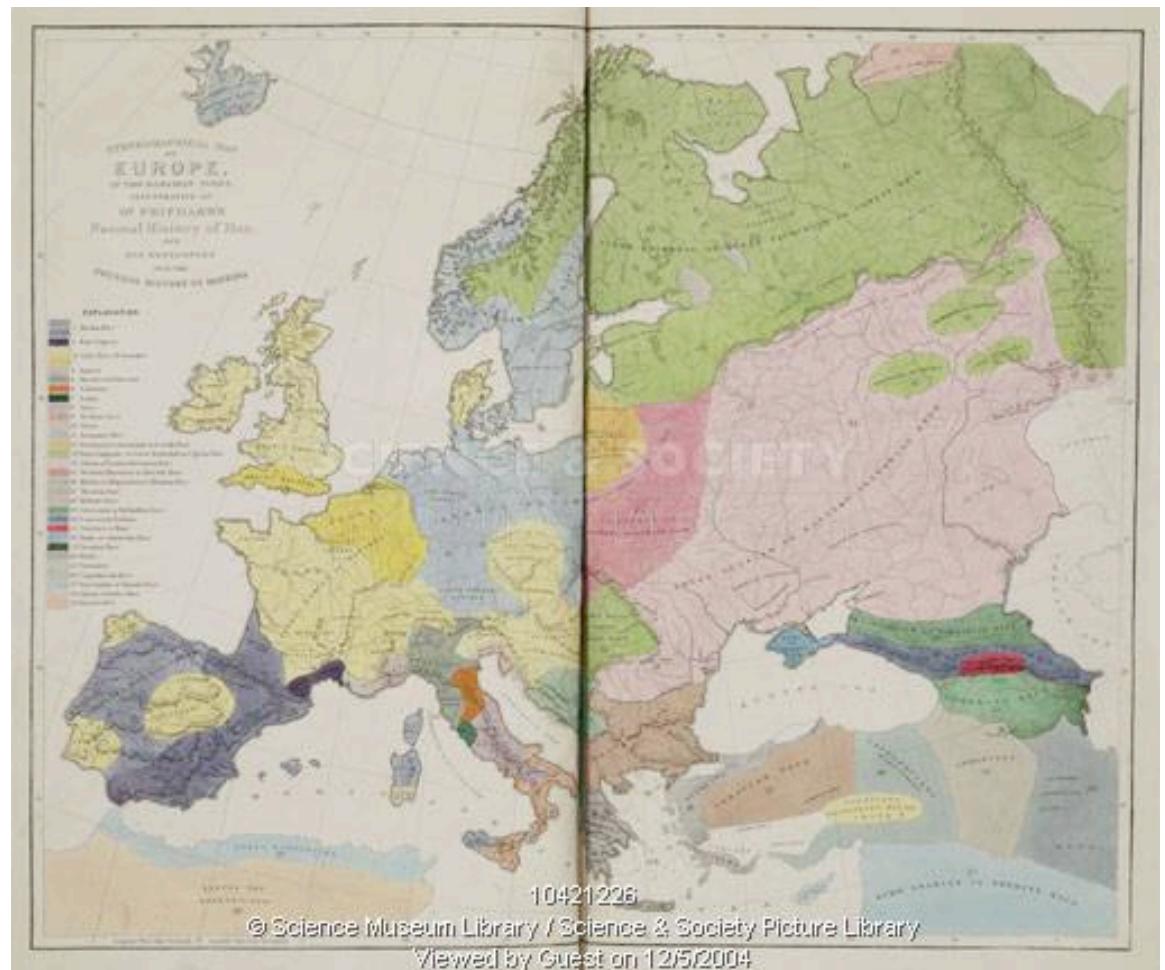
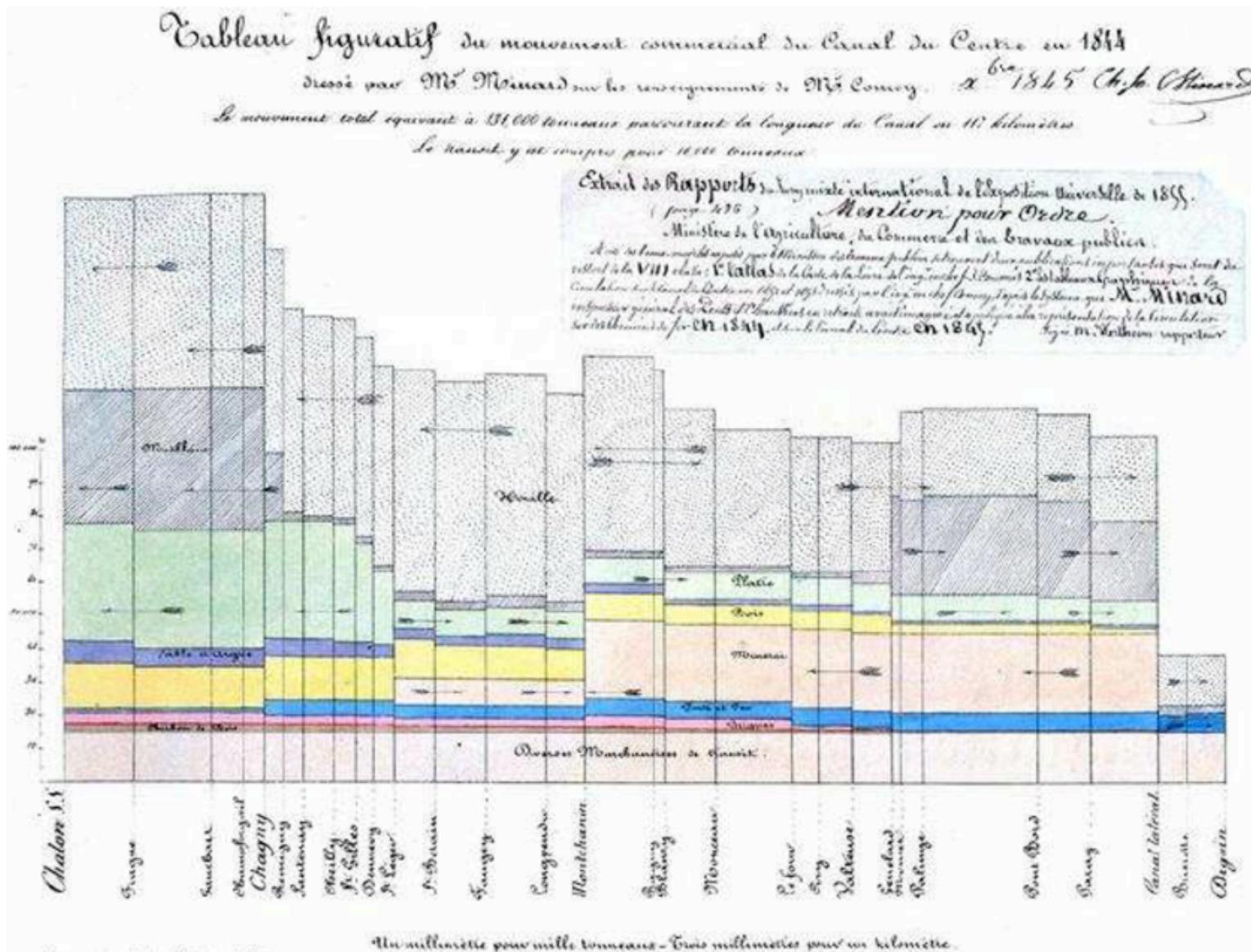


tableau-graphique [mosaique plot] (c.j. minard, 1844)

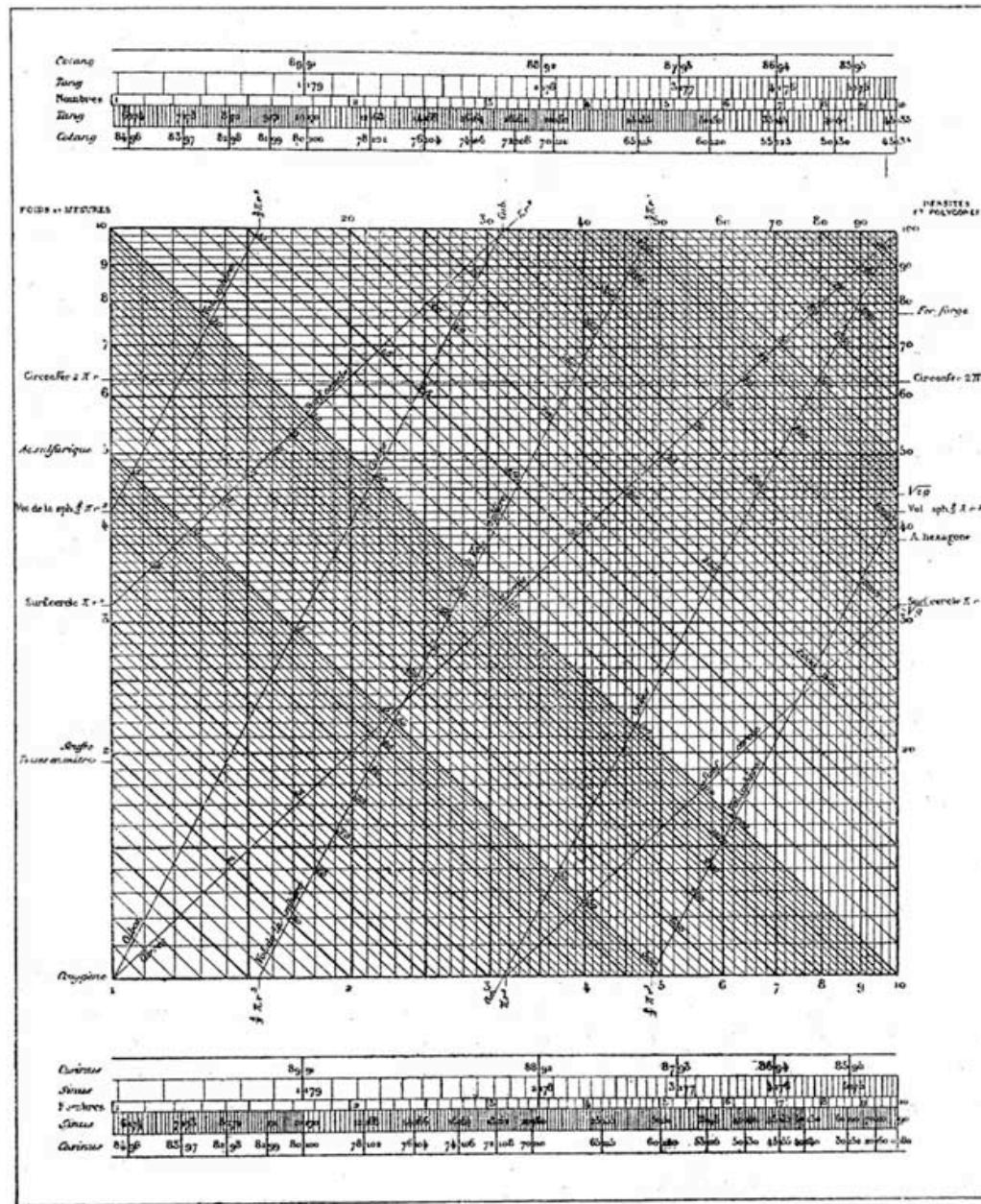


On a comparé dans le territoire les marchandises allant de Chalon au Canal latéral à la Saône et vice versa.

Un millimètre pour mille tonnes - Trois millimètres pour un kilomètre

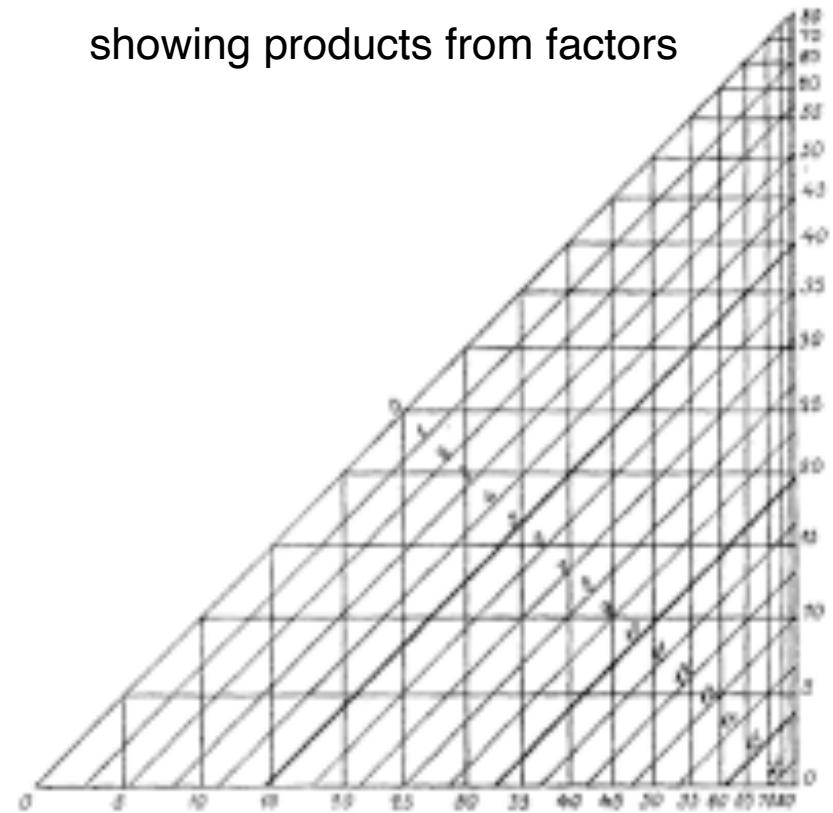
transportation of commercial traffic by variable width (distance), divided bars (height \sim amount), area \sim cost of transport

first log-log nomogram & universal calculator (l. lalanne, 1846)

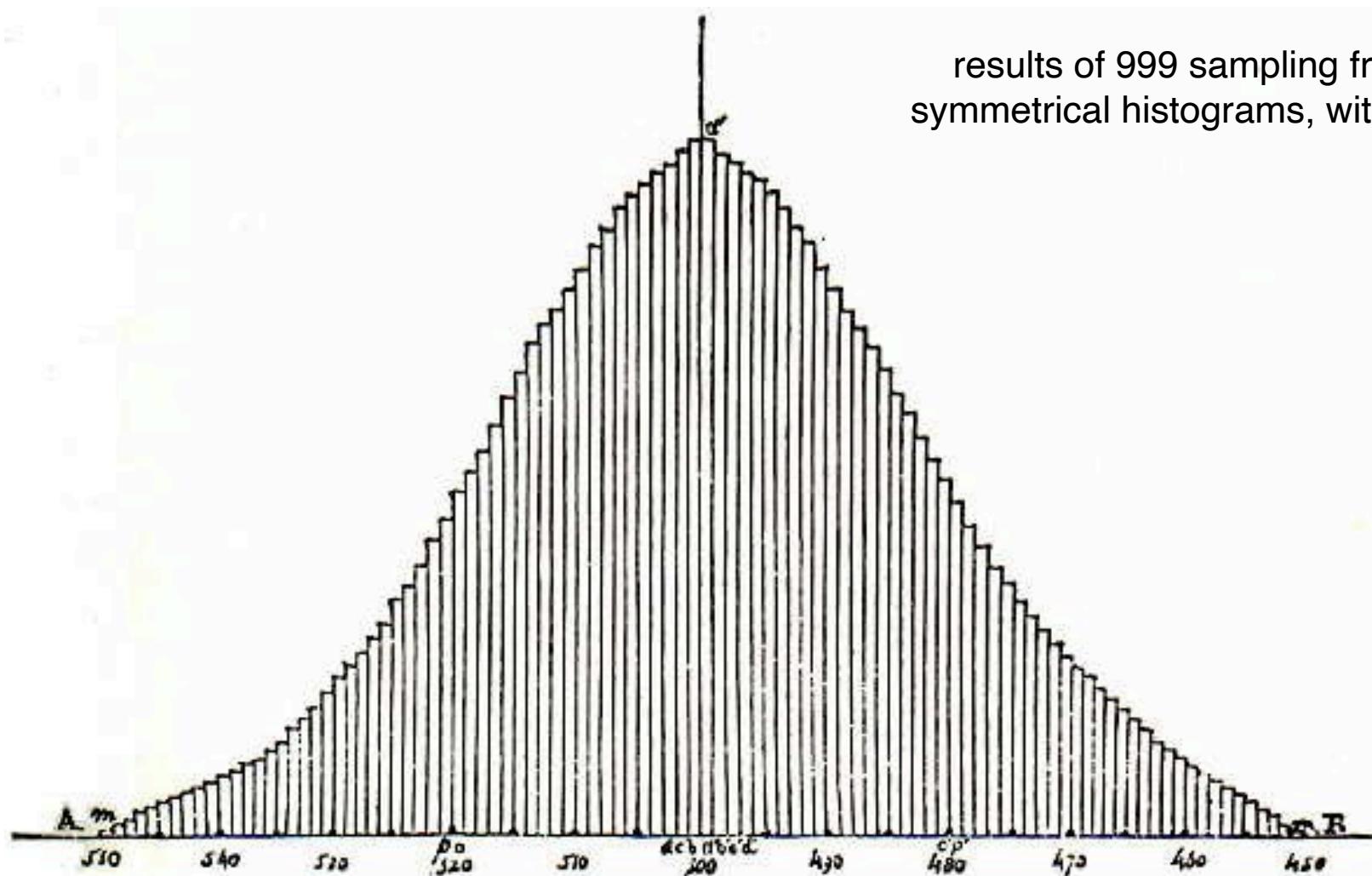


logarithms and trigonometric calculations

showing products from factors

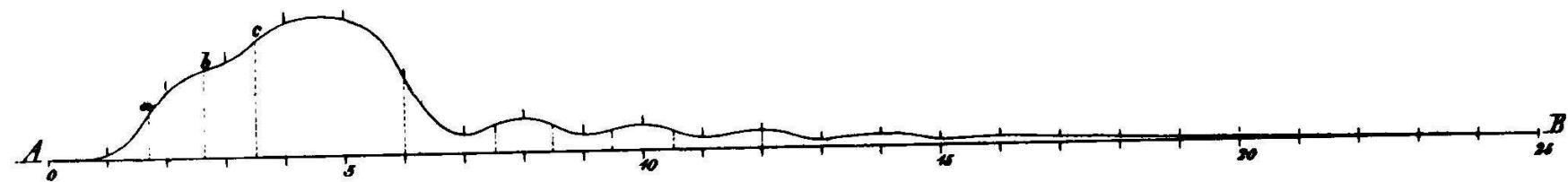


first empirical binomial distribution (a. quatelet, 1846)

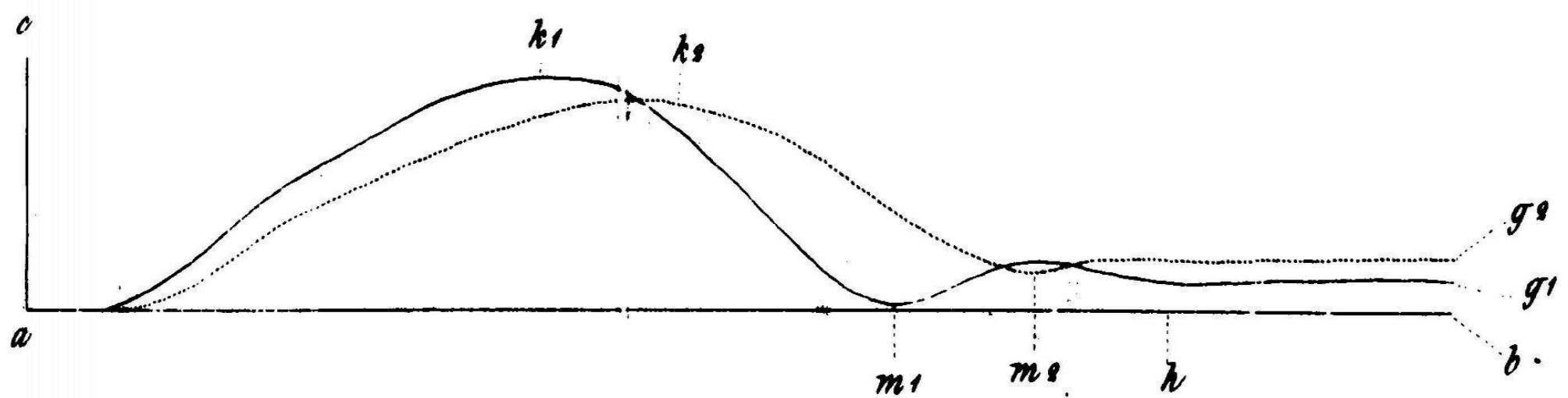


results of 999 sampling from urns shown as
symmetrical histograms, with limiting "*curve of*
possibility"

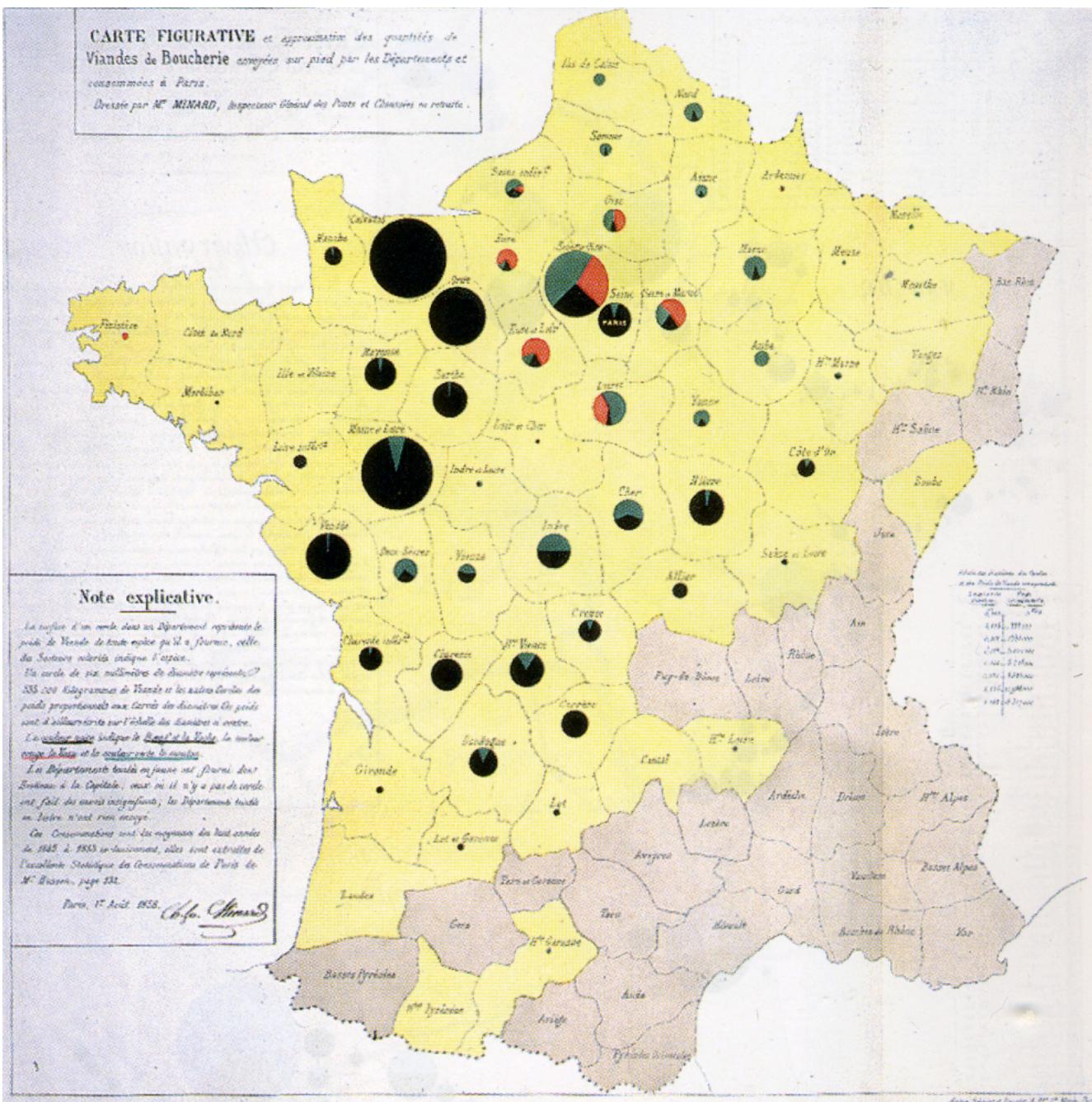
muscle action (h. helmoltz, 1850-1852)



- graphical representation of muscle action after stimulation
- first example of deduction from graph

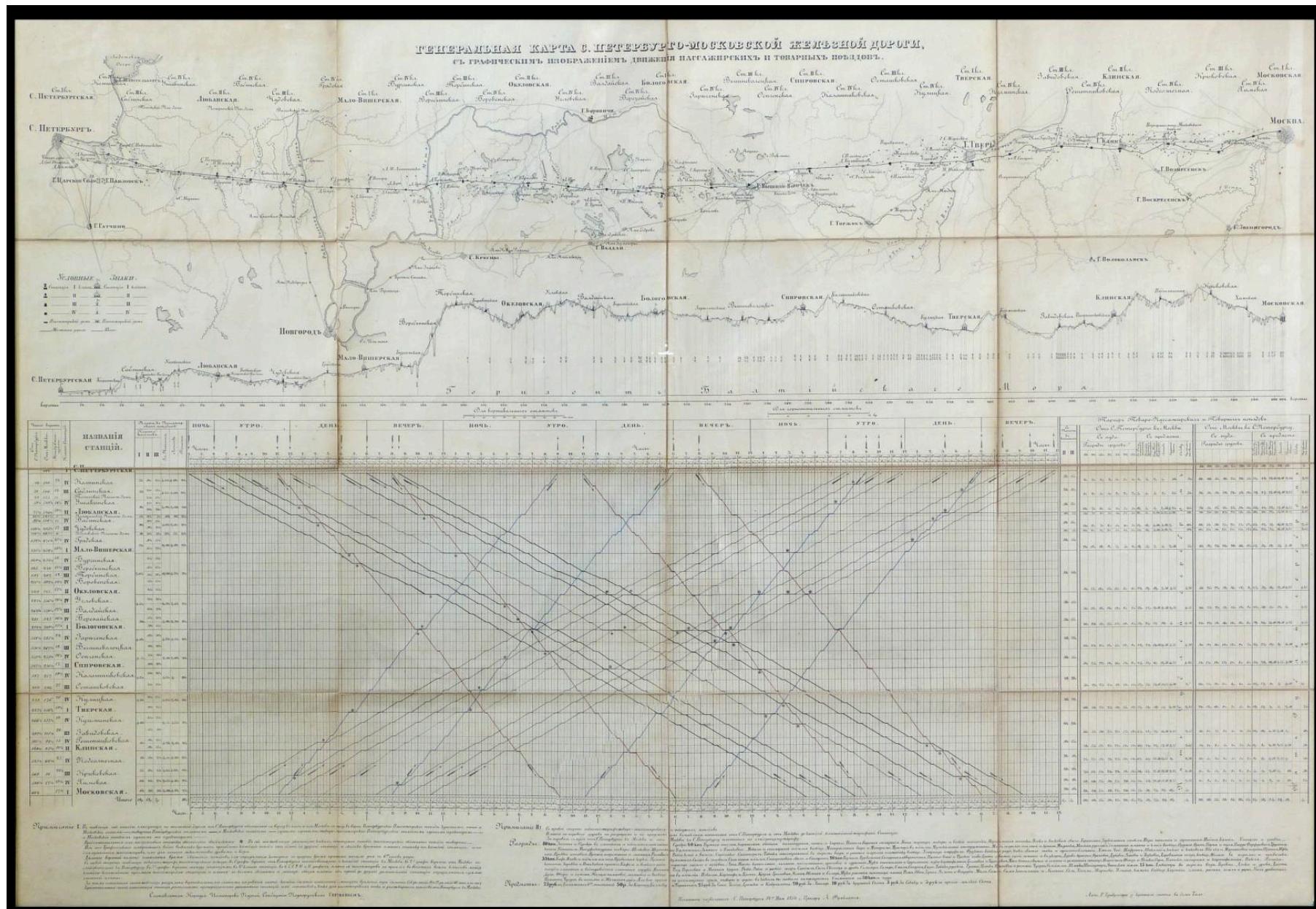


first map including statistical charts (j.c. minard, 1852)



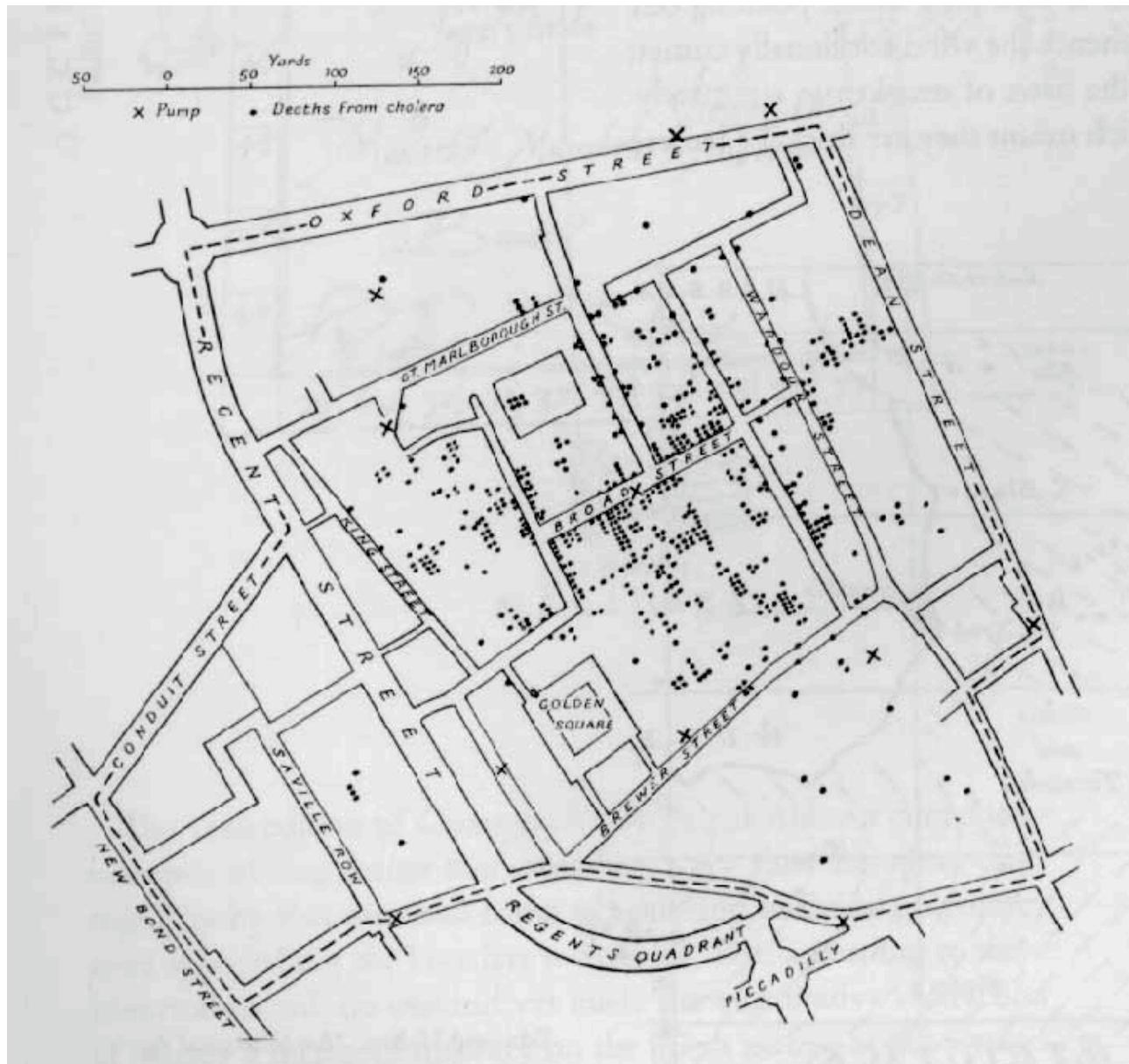
beef consumption

train schedule (serjev, 1854)



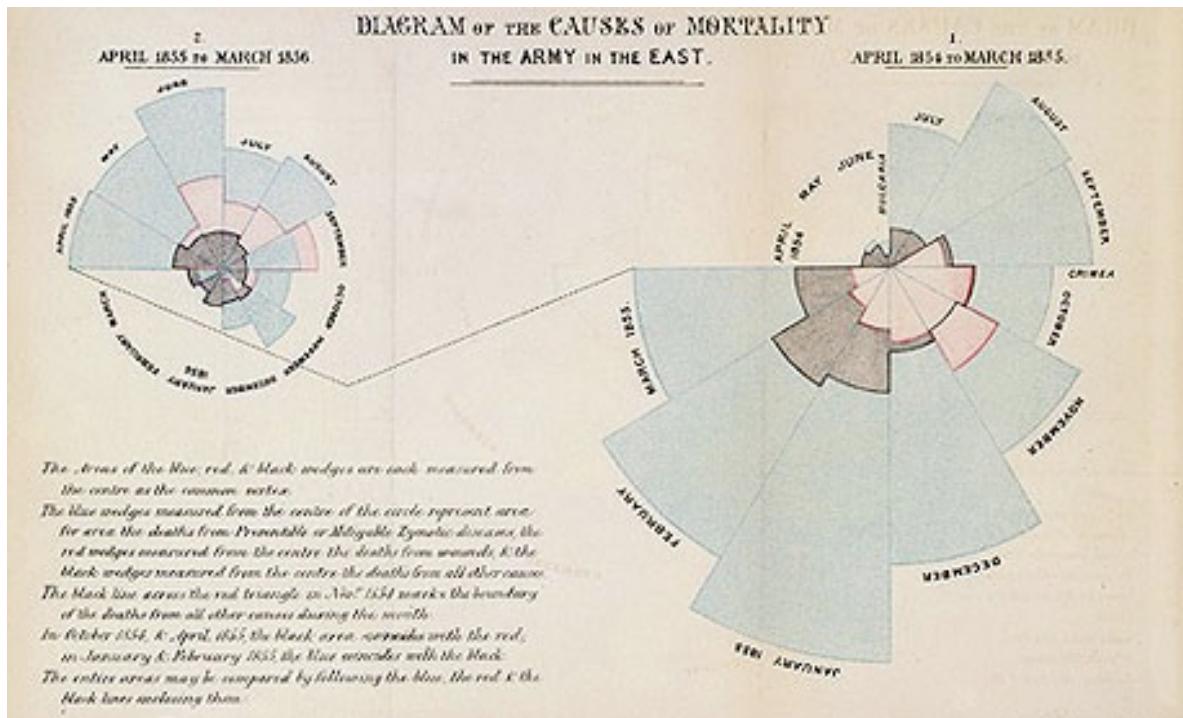
train schedule for 35 railways stations, between st. petersburg and moscow

true epidemiological success w/ graphics (j. snow, 1855)



discovering a cholera outbreak in *london* using a map

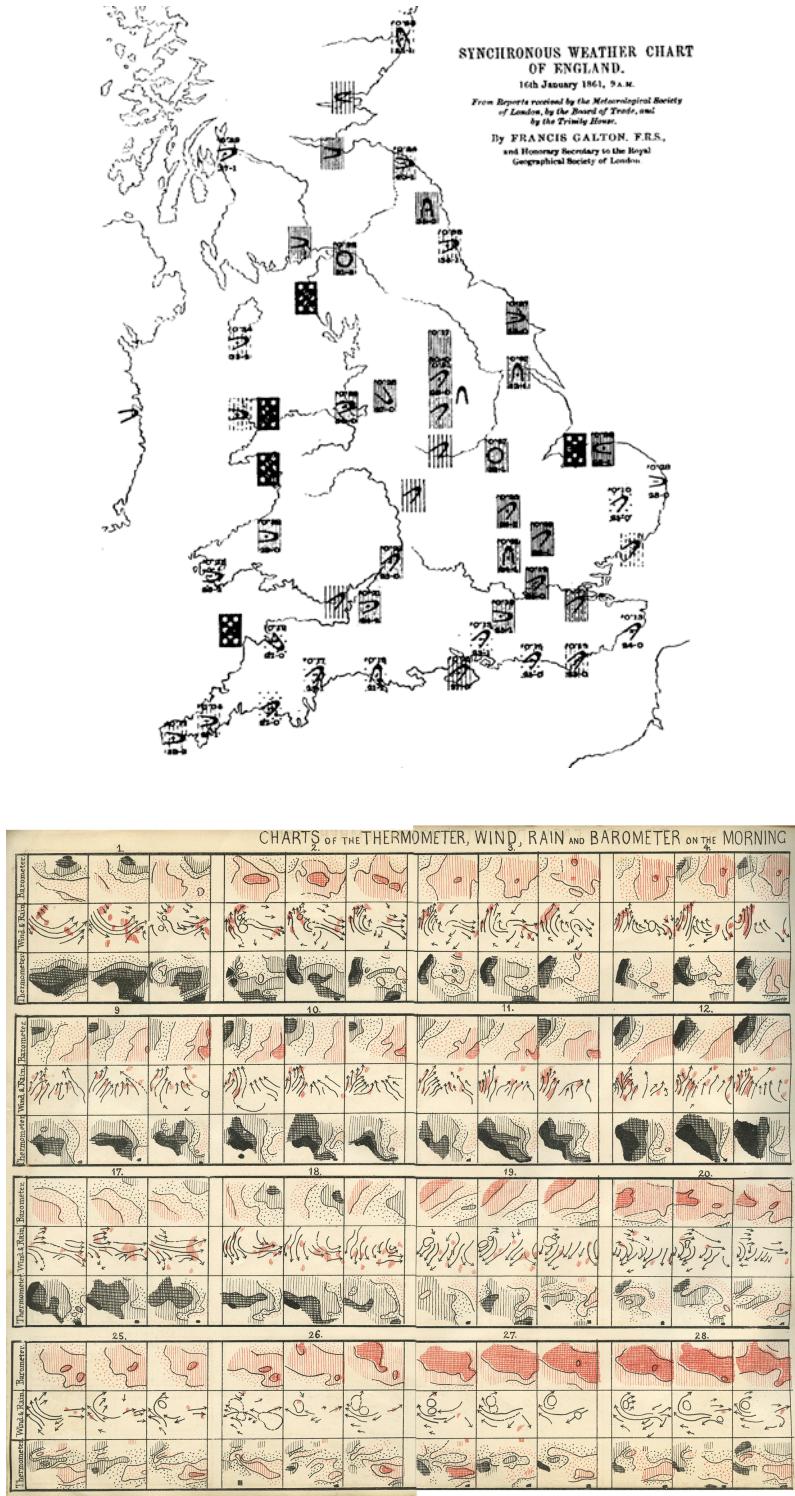
“coxcombs” / polar area charts (f. nightingale, w. farr ~1855)



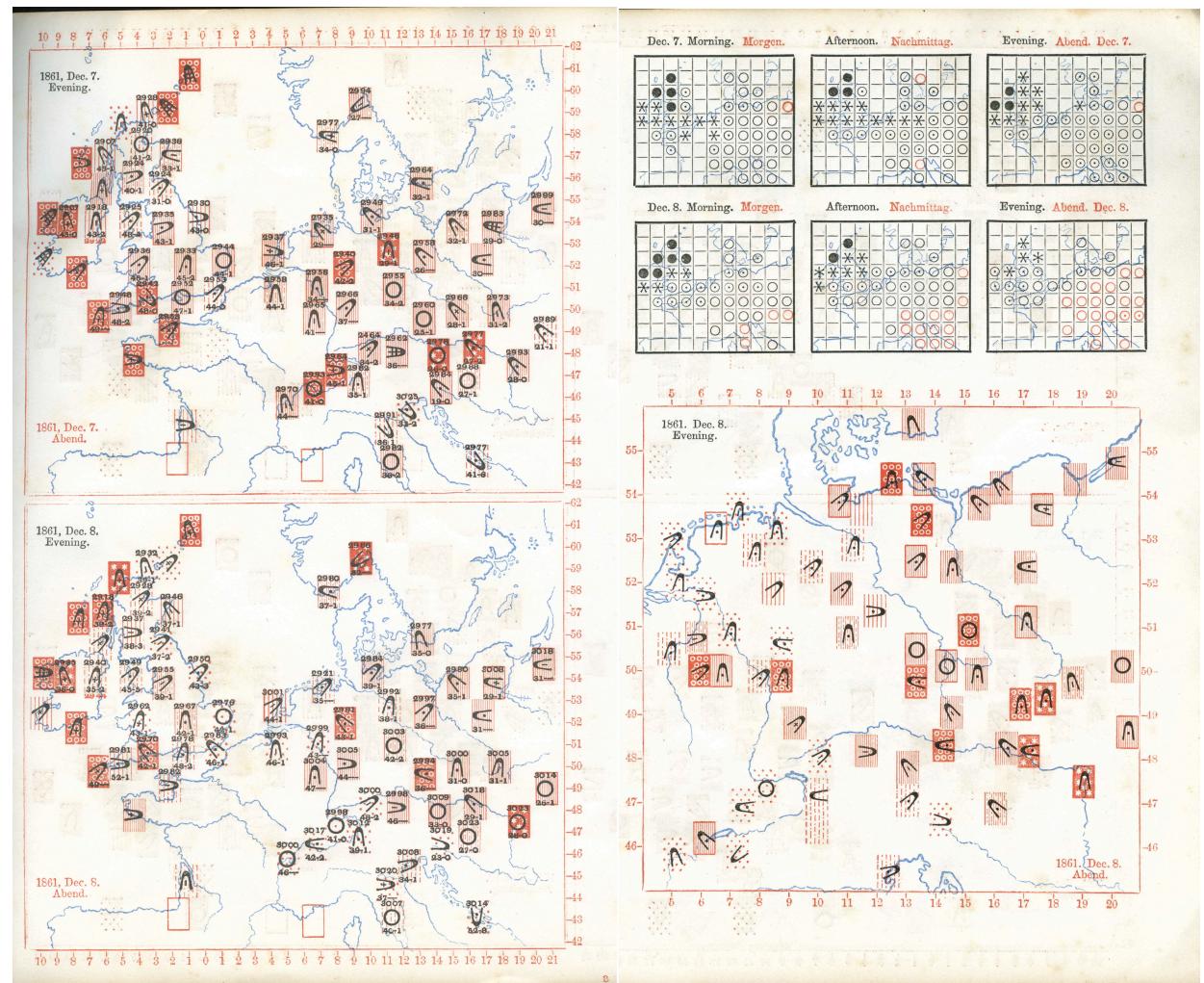
soldiers' conditions in crimean war

cholera/plague mortality in london





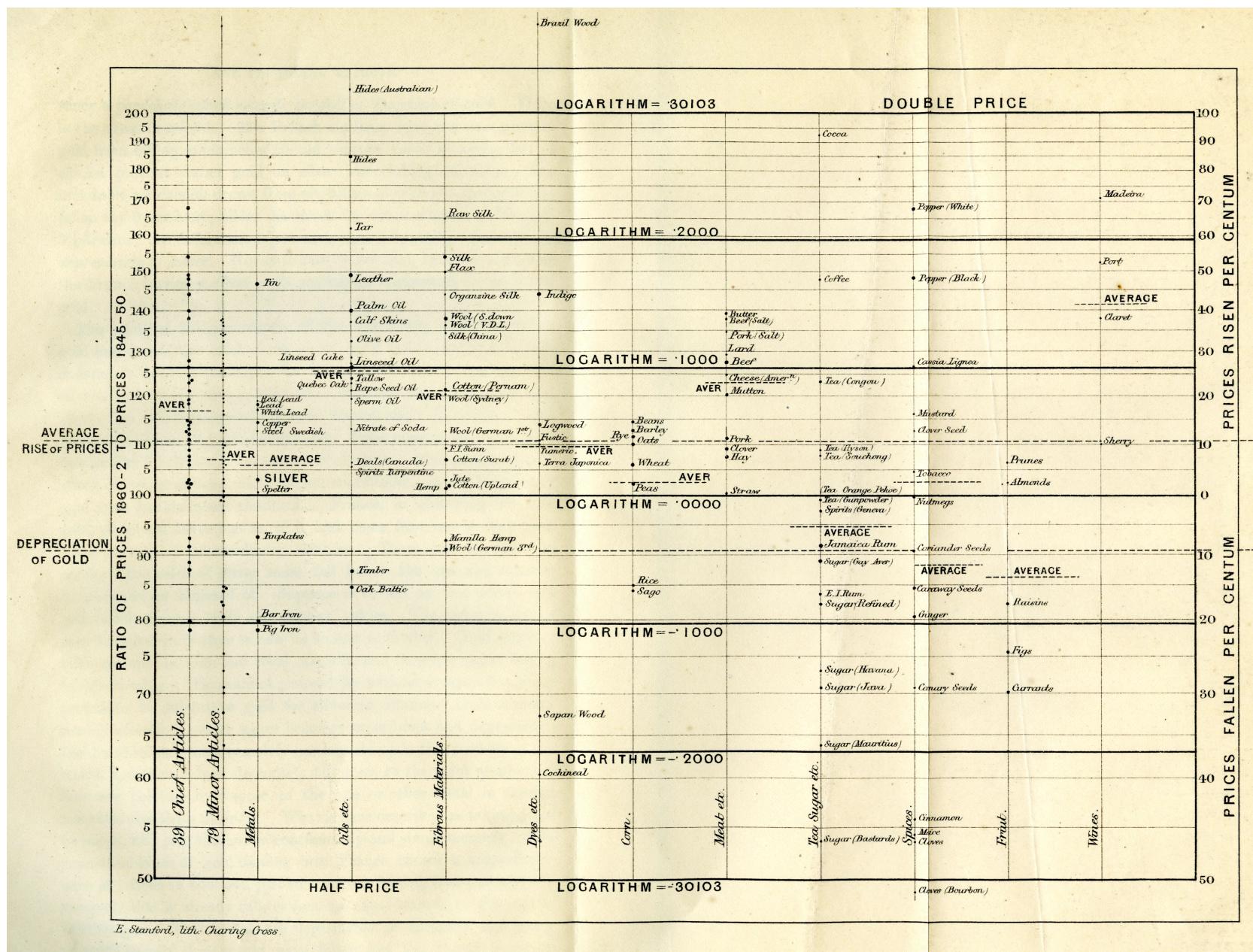
modern weather maps (f. galton 1861)



similar air pressure and barometric changes by means of glyphs displayed on a map

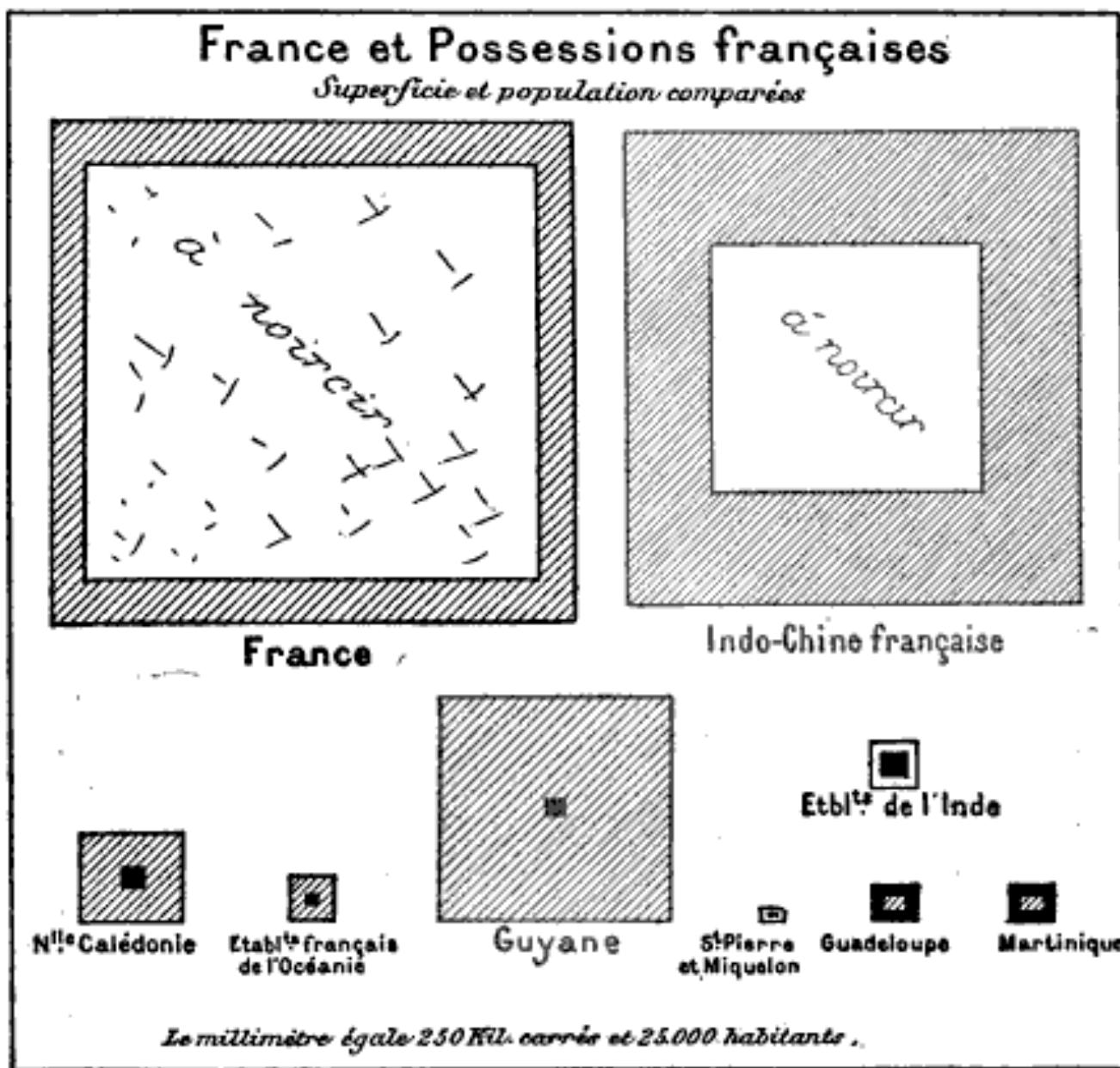
discover of the anti-cyclonic movement of wind around low-pressure areas

first semilog chart (w.s. jevons, 1863)

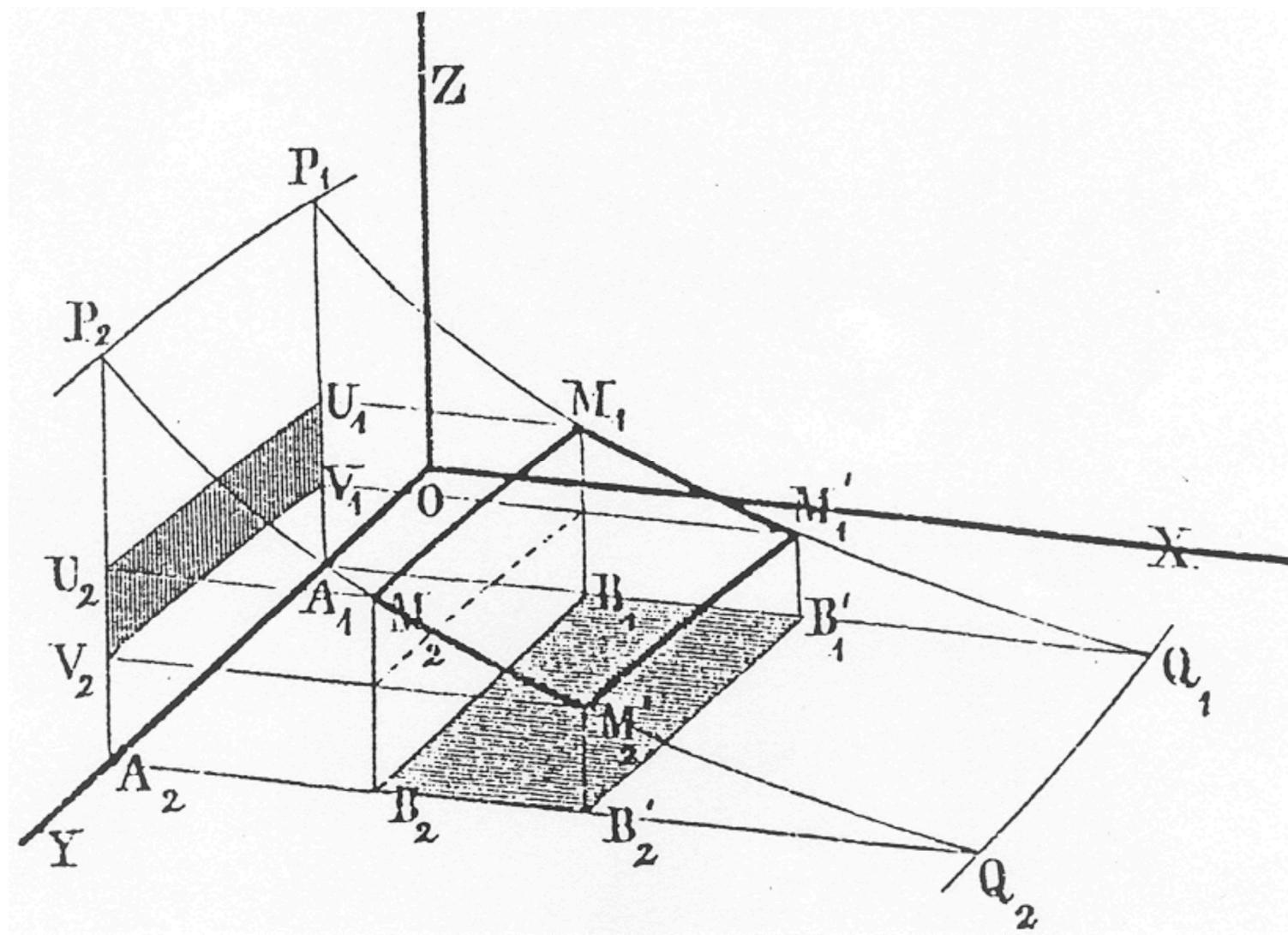


percentage changes in commodities

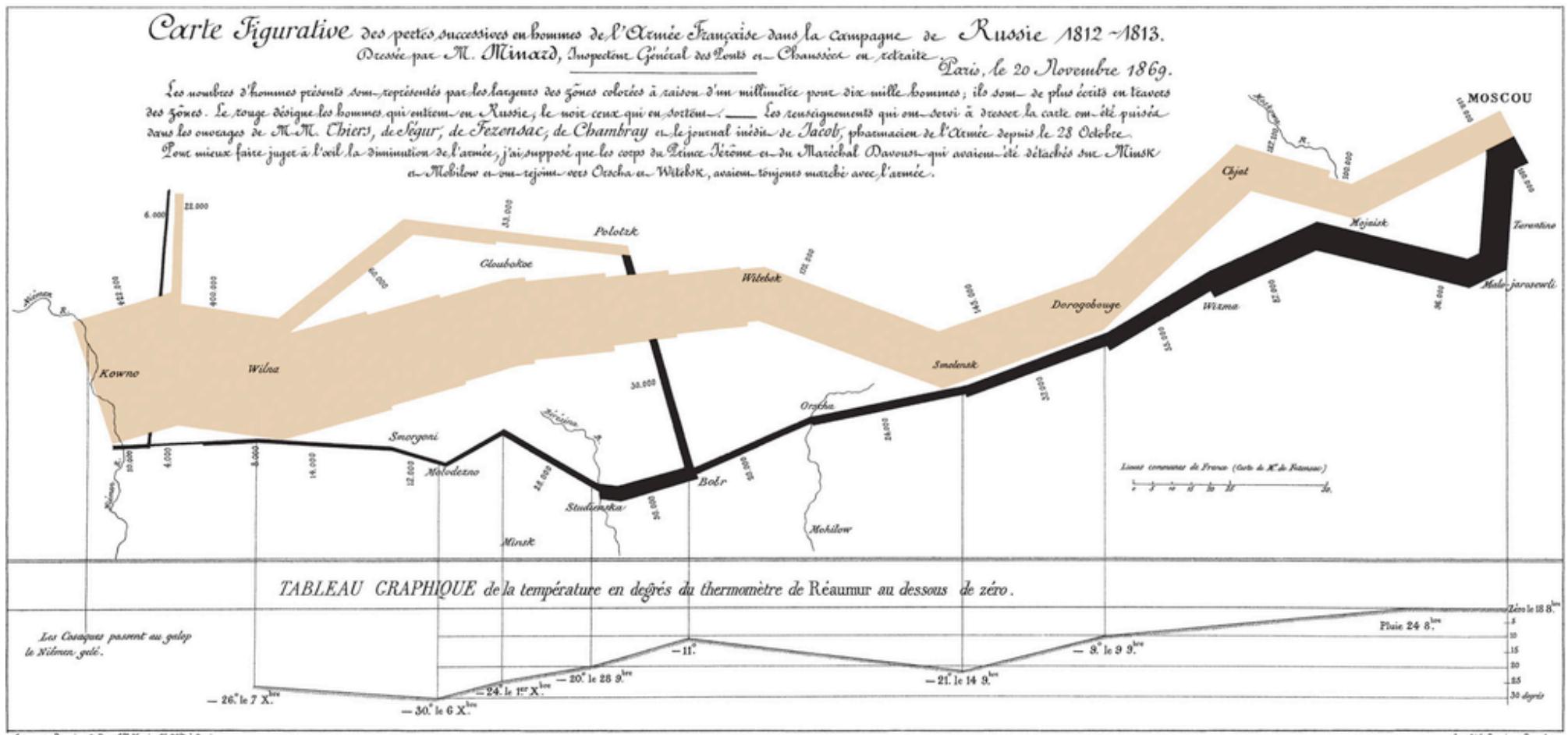
first chart used in textbooks (e. levasseur, 1868)



first stereograms (g. zeuner, 1869)

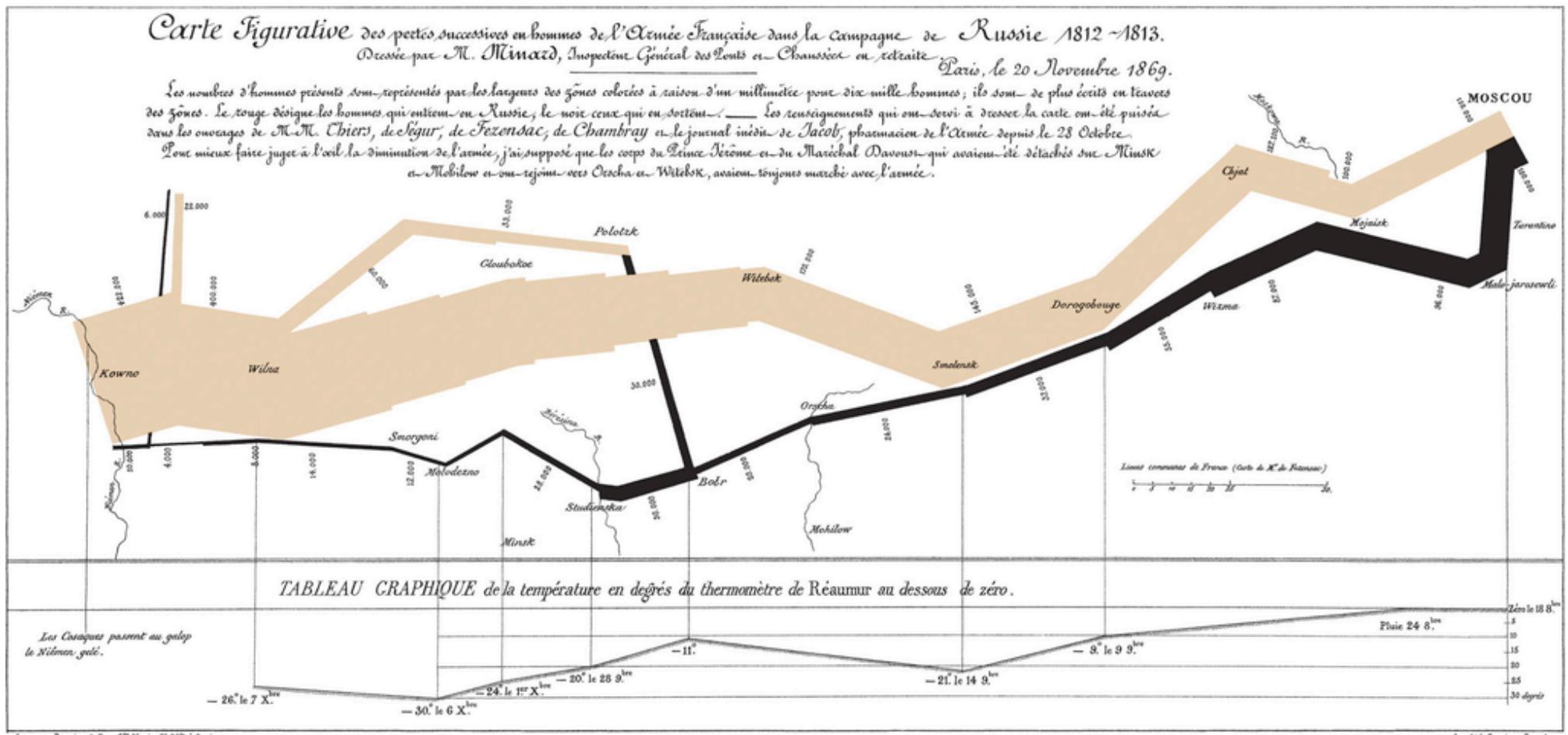


napoleon russian campaign (c. j. minard, 1869)



- the size of his army at specific geographic points during their advance/retire
- the distance traveled
- temperature
- slatitude and longitude
- direction of travel
- location relative to specific dates
- later called sankey diagram

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