

# THE BLACK DEATH

EUROPE IN THE FOURTEENTH AND FIFTEENTH CENTURIES

- Overview of Medieval Europe
  - Germanic/Asiatic invasions (400's-700's CE)
  - Viking/Islamic invasions (900's-1000's CE)
  - the **High Middle Ages** (1050-1300 CE)
- the 1300's and 1400's CE: another age of economic depression and retrenchment
  - but this time the unrest was not the result of invasion but internal problems
    - e.g. The Hundred Years' War between France and England

# THE BLACK DEATH

EUROPE IN THE FOURTEENTH AND FIFTEENTH CENTURIES

- Medieval Europe: 1300-1500 CE
  - also global environmental changes
    - a cooling phase began ca. 1300 CE
    - ecological changes led to the spread of disease
  - the short-term results
    - population decreased
    - the economy stagnated
    - literature and art shows an obsession with the macabre
    - paranoia and superstition increased, e.g. witch trials, the Inquisition



Hans Holbein the Younger's rendering of the Dance of Death reflects the fifteenth- and early-sixteenth-century preoccupation with dying, which was in part responsible for the piety and religious concern of this period. In this panel a child is snatched by death.

# THE BLACK DEATH

EUROPE IN THE FOURTEENTH AND FIFTEENTH CENTURIES

- Medieval Europe: 1300-1500 CE
  - the long-term consequences
    - the formation of modern Europe
    - grave changes in mental attitudes
      - a loss of confidence in traditional faith
      - the idea of “Christendom” was abandoned
    - the beginning of the decline of the medieval papacy, e.g. the Avignon Popes
    - the rise of patriotism and nationalism



# THE BLACK DEATH

EUROPE IN THE FOURTEENTH AND FIFTEENTH CENTURIES

- Medieval Europe: 1300-1500 CE
  - decentralization of government
    - armed outlaws controlled parts of England, e.g. Bristol
  - unemployed mercenaries plundered and killed people all across France

**Soldiers Pillaging a House** In all wars the property and persons of noncombatants have been at the mercy of victorious armies. This scene from the Hundred Years' War shows marauding soldiers ransacking a house for all possible loot. (Source: *The British Library*)



# THE BLACK DEATH

EUROPE IN THE FOURTEENTH AND FIFTEENTH CENTURIES

- by the late 1400's, the unrest finally began to settle down
  - strong central governments — mostly monarchies — in France, England and Spain
  - Germany and Italy were, however, still mired in chaos, i.e. warring city-states
    - would not unite until very recently!
- by 1500, Europe looked very different
  - the Renaissance had taken hold
  - and there was a New World dawning

# THE BLACK DEATH

EUROPE BEFORE 1347 CE

- the expansion of the High Middle Ages had reached its limit by 1300 CE
  - good farmland was overworked
  - new lands were proving only marginally productive
  - all in all, the population had outgrown the capacity of the land to feed it
    - in other words, famine was on the horizon

# THE BLACK DEATH

EUROPE BEFORE 1347 CE

- worse yet, the climate was heading into a cooling phase, the “**Little Ice Age**”
  - for the last three centuries (1000-1300 CE), Europe had enjoyed a warm dry climate
  - but in 1307, there was a really cold winter, the first in 300 years!
    - polar and Alpine glaciers started advancing
  - only a one-degree drop in average temperature but enough to be significant
    - grain/cereal production abandoned in Scandinavia
    - likewise, viticulture (wine-making) in England



# THE BLACK DEATH

EUROPE BEFORE 1347 CE

- a wetter climate and greater rainfall led to other problems
  - e.g. the **Arno River** which runs through **Florence** flooded and swept away bridges
- the **Famine of 1315-1317**
  - heavy rain ruined crops in successive years
  - less sun > less evaporation > less salt > less preservation of meat
  - peasants ate their seed grain, then their farm animals, then their pets, then . . .



# THE BLACK DEATH

EUROPE BEFORE 1347 CE

- population begins to drop, e.g.
  - in Ypres (Flanders), one-tenth of the population died within six months
  - in Halesowen (England), 15% of the population died
- famine struck again in 1332 CE
- but the people of medieval Europe could not have foreseen the far greater disaster that was lurking in the East:

**The Black Death**

# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- the single most significant disease ever to strike Western Europe!
  - but 1347-1352 CE was not the first time bubonic plague devastated Europe
  - e.g. Cadwalader's Plague in 664 CE (Britain)
    - but in that day (after the "Fall of Rome") the Plague was slower to spread because there was less travel and trade

# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- *plague*: Greek word for “**stroke**,” because victims succumb so suddenly they look as if they’ve been “struck”
  - usually from septicemia since the disease attacks the circulatory system primarily
    - sometimes in only a matter of hours!
  - is this occasional high-level virulence part of the life cycle of the bacillus?
    - in other words, is it designed to ensure the disease’s survival by spreading it widely and quickly at times?

# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- **bubonic plague** is not naturally a human disease
  - **endemic** among rodents, especially the **rats** of central Asia
    - also, Uganda, western Arabia, Kurdistan, northern India
  - does not survive long anywhere in the absence of rats





# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

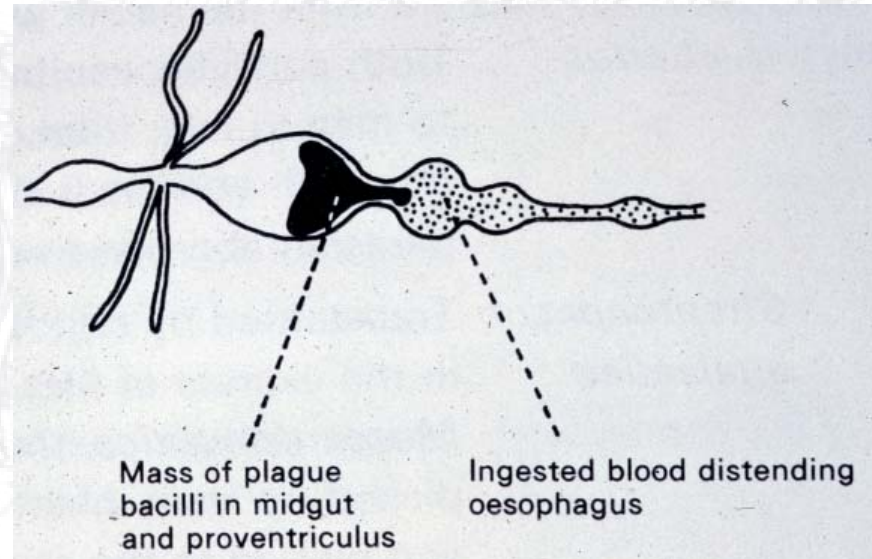
- but rats are not the cause of Plague
- **pathogen:** the bacillus *Yersinia pestis* (“Yersin’s plague”)
  - first isolated in 1894 by French bacteriologist Alexandre Yersin
- **vector:** rat flea (*Xenopsylla cheopis*)
  - transmits disease from rat to rat



# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- normal course of Plague
  - flea bites infected rat, drinks in bacillus along with the rat's blood
  - bacillus reproduces in flea's gut and forms a solid mass blocking the flea's digestion
  - flea becomes frantic with hunger
  - repeatedly bites rat after rat
  - regurgitating blood along with bacillus!



# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- only when rats are not available, does the rat flea feed on other hosts
  - e.g. other rodents, animals, humans



# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- the Plague in human populations is very virulent because humans usually have little-to-no resistance
  - thus, bubonic plague readily becomes an **epidemic**
  - normally, the victim dies in 4-7 days from the onset of symptoms
    - sometimes overnight!



# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- the usual course of the disease
  - early sign: the appearance of **buboes** (**bubo**)
    - swelling of lymph nodes in the neck, armpits and groin
    - thus, “bubonic” plague
      - cf. St. Roch
  - 3 days later: high fever, diarrhea, delirium, black splotches on the skin
    - hemorrhaging, necrosis of extremities
    - “Black” Death?



# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- the usual course of the disease
  - fifth day: buboes often burst
    - incredibly painful!
  - but the bursting of buboes is a good sign:
    - the patient is still alive; 60-90% of patients die before their buboes burst
    - helps clear the patient's system of the bacillus



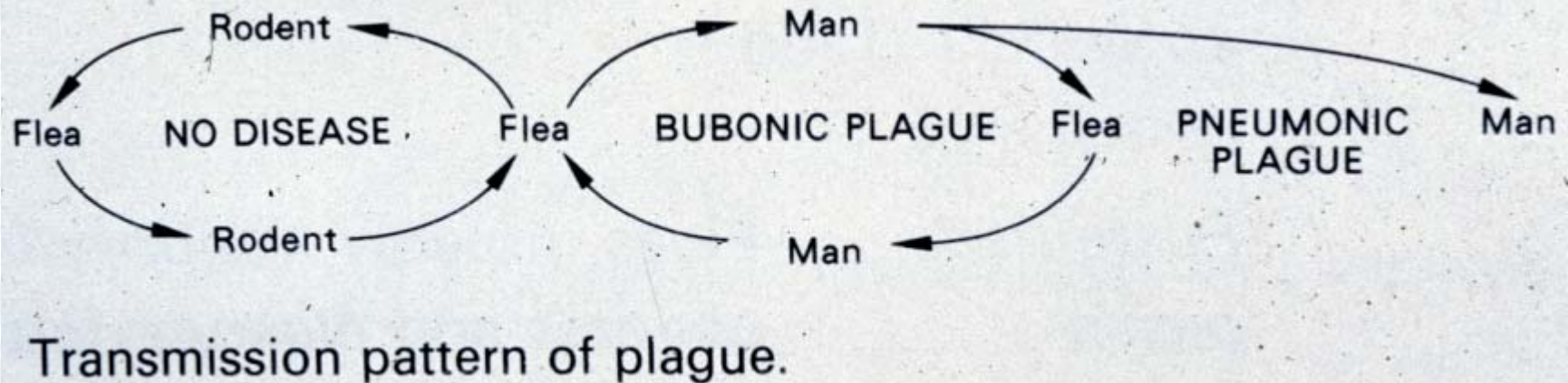
*The Plague-Stricken* Even as the dead were wrapped in shrouds and collected in carts for mass burial, the disease struck others. The man collapsing has the symptomatic bubo on his neck. As Saint Sebastian pleads for mercy (above), a winged devil, bearer of the plague, attacks an angel. (Source: Walters Art Gallery, Baltimore)

# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- **Pneumonic Plague**

- a second type of Plague spread through particulate matter exhaled by the infected
- the most virulent form of the Plague
  - on average, patients live only 1.8 days!





# THE BLACK DEATH

## THE NATURE OF BUBONIC PLAGUE

- no cure for Plague in the Middle Ages
  - blame was placed on an astrological confluence of planets
  - also, “bad airs”
  - and witches
  - and Moslems (by Christians)
  - and Christians (by Moslems)
  - and the Jews (by everyone)



PRAYERS AGAINST PLAGUE. One of the earliest dated woodcuts (1437) here shows the martyrdom of St Sebastian and prints two prayers against plague. The saint was one of those invoked as a protector against epidemics and the manner of his martyrdom—by archers—was thought to have inflicted pain similar to that experienced by plague victims.

○ Hailiger heere vnd marter sante sebastian. wie ist  
so groß din verdienst. Dar für vns vnsere herren  
ihesum xpm das wir von der plage vnd dem sechzigsten ey-  
denia. vnd dem größten tode vnd von allen vngewonli-  
chen toden durch din gebete vnd verdienet beschütze vnd  
beschützet werden. Amen. Die collecta.   
Auerchinger eriget got. wir bitten dich das du dnu-  
st verdienet vnd bare dines hailigen marters sante  
sebastians. vns vor der plige eydenia vnd dem größten  
tode vnd vor allen vngewonlichen toden beschütze. Amen  
das so vns nit be- äre noch begriffe. du si das ver-  
nen dines wadigen marters sante sebastians. Das  
hilff vns der da triffet in ewigke. Amen.  
C 3A. 467. 1437.



# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

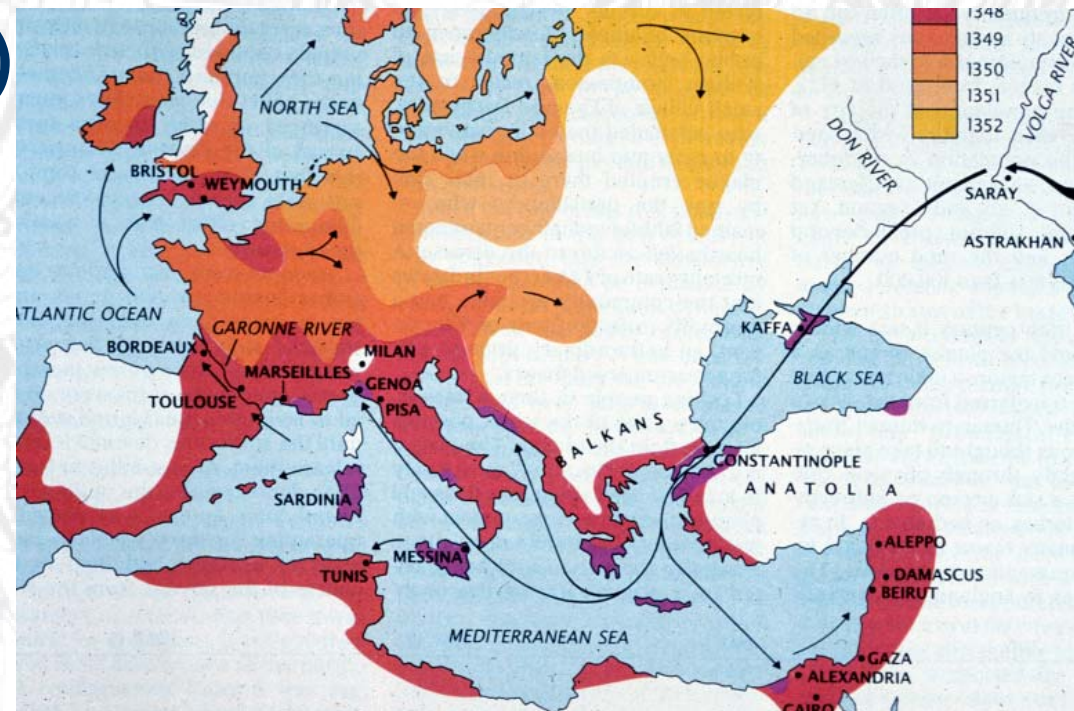
- began with death of rats in central Asia?
  - from migration because of weather change?
    - drought is recorded in China in 1333-34 CE
- then, the Plague spread to **marmots** as fleas moved to new hosts
  - woodchucks/rock chucks
- hunters find a wealth of dead marmots and think they've hit the jackpot!



# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

- the dealers sold the marmot hides down the **Silk Road** leading to Europe
  - and ignored reports of disease among hunters
- infected fleas traveled west in the hides
- to **Kaffa** (Crimea)
  - n.b. *Xenopsylla cheopis* can survive up to six months without feeding

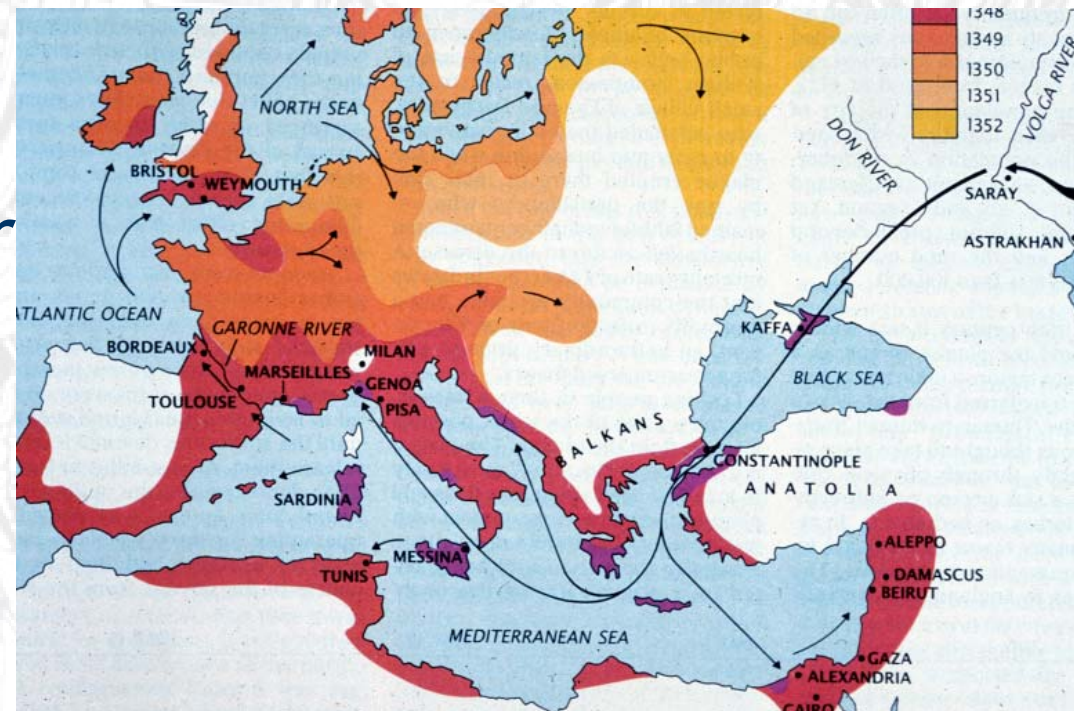




# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

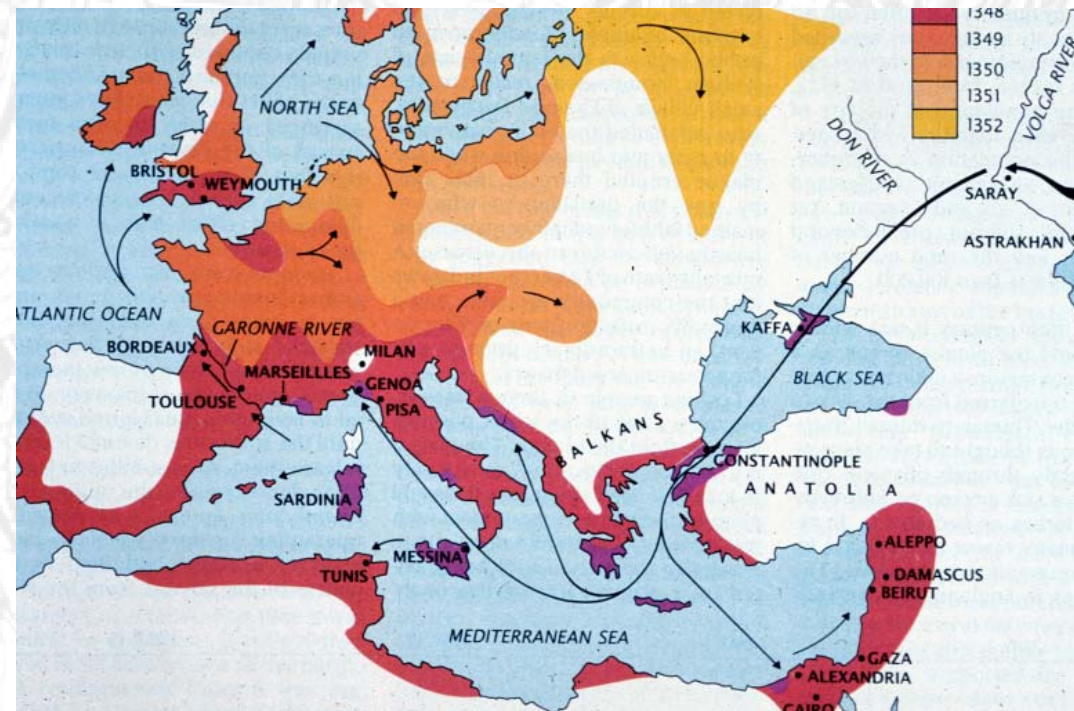
- rats in Kaffa probably had no effective resistance to the Plague and died quickly
  - followed by animals, and eventually humans
- 1346 CE:  
Moslems were the first to hear reports of a killer disease in Saray and Astrakhan



# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

- 1347 CE: the Plague hits Constantinople, **Genoa** (Italy), Messina (Sicily)
  - the Moslem world was affected less
  - Byzantine Emperor **Cantacuzenus** recorded his son's death
    - in imitation of the classical Greek historian **Thucydides** and the plague that hit Athens in 430 BCE and killed Pericles





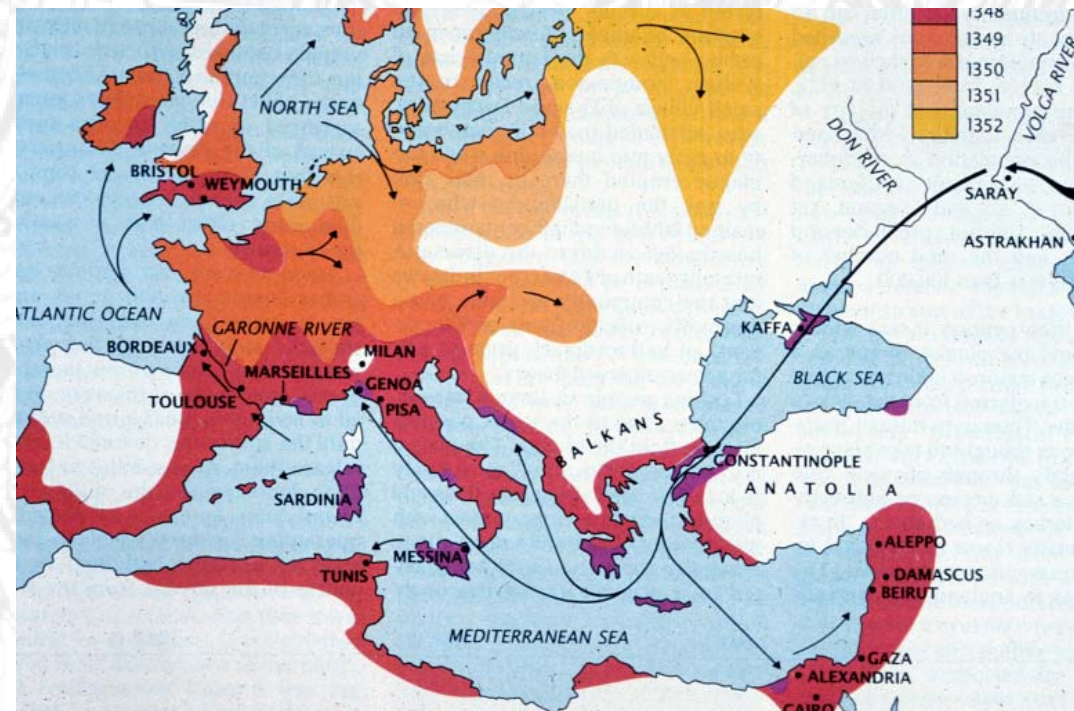
# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

- when the people of Genoa realized these ships carried disease, they turned them away, spreading it to Marseilles and Pisa
- 1348 CE: it crossed France to the port of

## Bordeaux

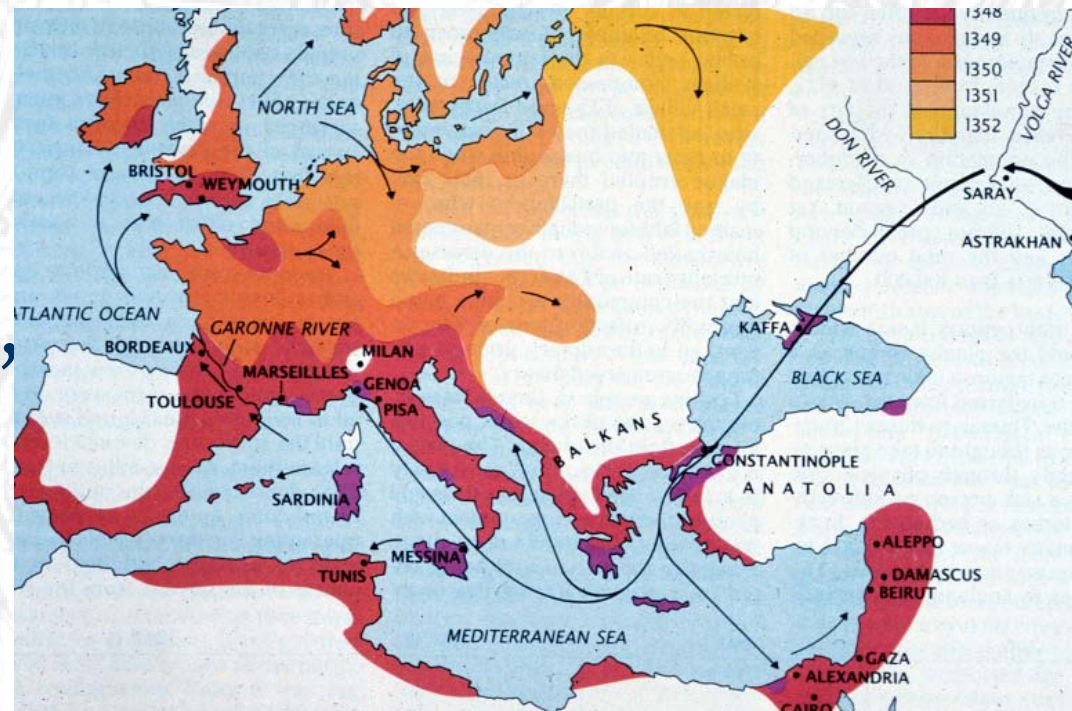
- from there it made its way to England on a ship carrying claret



# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

- 1349 CE: an English ship exporting wool was discovered floating aimlessly off the coast of Sweden, the entire crew dead
  - greedy Swedes rowed out and stole the cargo and got Plague!
- 1350-52 CE: the Plague ravaged Denmark, Poland, Germany, Russia
  - but not Eastern Europe?

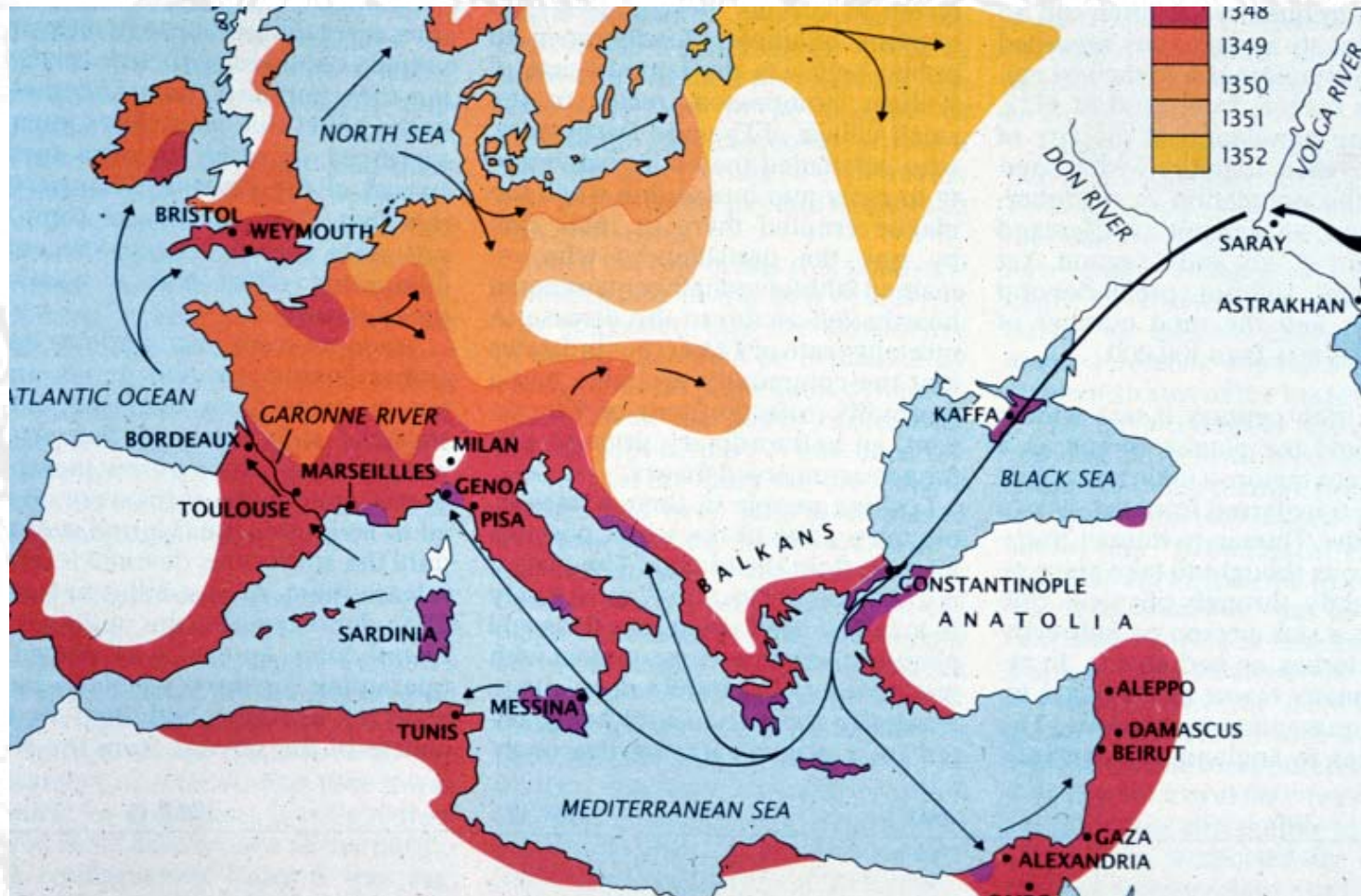




# THE BLACK DEATH

THE BLACK DEATH (1347-1352 CE)

- thus, the Plague completed a five-year, clockwise circuit of flea-born devastation



# THE BLACK DEATH

## THE RESULTS OF THE BLACK DEATH

- significant decrease in **population**
  - evidenced by mass burials
- the exact number of deaths is hard to determine: ca. 20 million (in five years!)
  - poor records because cities were hardest hit
  - ca. 25-35% of the population of Europe
  - e.g. the population of Paris was cut in half between 1348-1444 CE
    - n.b. the Plague recurred several times over the next century



# THE BLACK DEATH

## THE NEGATIVE RESULTS OF THE BLACK DEATH

- the population of Europe would not pass pre-Plague levels again until 1500 CE
- led to **de-urbanization**
  - many villages abandoned and never resettled
    - far worse than after the Fall of Rome
  - e.g. **Boccaccio** who wrote *The Decameron*
    - Shakespeare's plays are based on plots from Boccaccio



# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - Death from The Book of Hours: St. Michael and a devil fight over a soul





# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - The Triumph of Death (the Grim Reaper)



# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - **The Four Horsemen of the Apocalypse**, by Albrecht Dürer





# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - Death at the Baptism



# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - The Dance of Death



*The temptation to make merry in the face of death: peasants dance away their cares*



# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

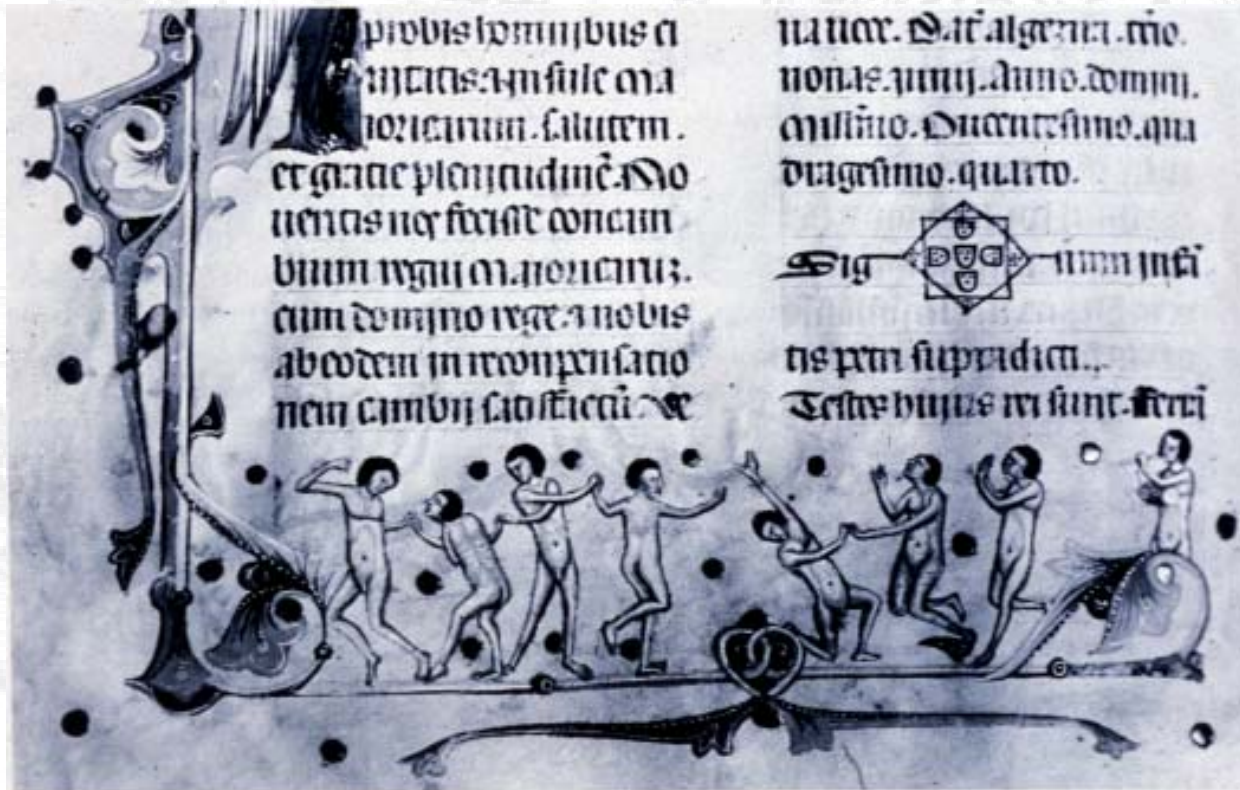
- art: macabre fascination with death
  - The Dance of Death



# THE BLACK DEATH

THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death
  - The Dance of Death



THE DANCE OF DEATH. Themes such as the Last Judgement and the Triumph of Death proliferated in painting and literature in the wake of the plague, and are often characterized by vivid images of decay and putrefaction. The less gruesome *Danse macabre* or Dance of Death, a powerful image which took many artistic and literary forms, developed more gradually, and particularly in the fifteenth century. This example is from a Spanish manuscript.



# THE BLACK DEATH

## THE NEGATIVE RESULTS OF THE BLACK DEATH

- art: macabre fascination with death

- Death in the Printer's Shop

- one of our earliest depictions of printing in Western Europe



# THE BLACK DEATH

## THE NEGATIVE RESULTS OF THE BLACK DEATH

- society: generally weird behavior
  - **flagellants**: wandering groups who scourged themselves to rid a town of sin – for a fee!
    - ultimately, outlawed by the Church
  - pseudo-flagellants: like flagellants, went from city to city but instead of scourging themselves, they performed sexual acts
    - the Church outlawed that, too!

# THE BLACK DEATH

## THE NEGATIVE RESULTS OF THE BLACK DEATH

- religion: loss of esteem for the Church
  - the Church's inability to stop or even forestall the Plague made it look ineffective
  - but with so many desperate for hope – and if not hope, salvation! – the Church's coffers were filled with donations from the dying
  - so the Church grew rich but its spirituality was seriously challenged

# THE BLACK DEATH

## THE POSITIVE RESULTS OF THE BLACK DEATH

- positive consequences of the Black Death
  - increase in the value of **manpower**
    - drop in population > people became a rare commodity > increase in wages
    - in England during the 1350's, wages doubled!
  - end of **serfdom** in the West
    - serfdom persisted much longer in the Eastern Europe and Russia
      - especially those areas not affected by the Black Death
    - serfdom was only finally outlawed in Russia in 1863 CE



# THE BLACK DEATH

## THE POSITIVE RESULTS OF THE BLACK DEATH

- positive consequences of the Black Death
  - when lords tried to force lower wages, workers organized and began fighting for their rights
    - though largely unsuccessful, these efforts were important early attempts to form labor unions

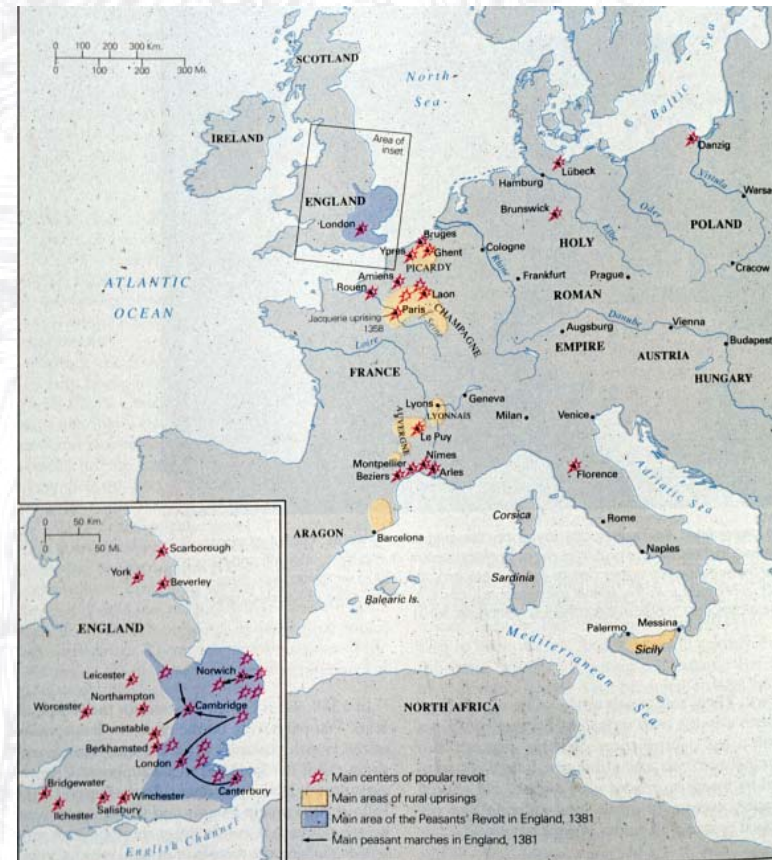
# THE BLACK DEATH

## THE POSITIVE RESULTS OF THE BLACK DEATH

- positive consequences of the Black Death
  - a series of peasant revolts
  - 1358 CE: The **Jacquerie**
  - 1378 CE: The Workers' Revolt in Florence
  - 1381 CE: the **Peasants' Revolt** in England



*The Black Death has been seen as one of the underlying causes of popular rebellion at this time, including the Peasants' Revolt of 1381*



**MAP 12.3 Fourteenth-Century Peasant Revolts** In the later Middle Ages, peasant and urban uprisings were endemic, as common as factory strikes in the industrial world. The threat of insurrection served to check unlimited accumulation.

# THE BLACK DEATH

## THE POSITIVE RESULTS OF THE BLACK DEATH

- positive consequences of the Black Death
  - the growth of **industry**
    - as the traditional Medieval manorial system slowly failed, cities repopulated faster than the communities in the countryside
    - led to the re-urbanization of post-Plague Europe and the industry-based lifestyle of most modern Europeans



# THE BLACK DEATH

## THE POSITIVE RESULTS OF THE BLACK DEATH

- positive consequences of the Black Death
  - the birth of modern **medicine**
  - especially, the end of the **humors theory of medicine**



# THE BLACK DEATH

RECURRENCES OF THE PLAGUE AFTER 1347-1352 CE

- the Plague returned to Europe repeatedly after the Black Death
  - in 1369, 1374-5, 1379, 1390, 1407 and so until 1722
- but outbreaks were localized, never again as bad as the Black Death

# THE BLACK DEATH

RECURRENCES OF THE PLAGUE AFTER 1347-1352 CE

- why didn't the Black Death happen again?
  - improved **hygiene** among Europeans?
    - No! humans may have gotten cleaner but rats didn't!
  - displacement of **black rats** by **brown rats**
    - brown rats prefer to live away from humans, while black rats tend to cohabit with humans
    - but areas of high brown-rat density do not coincide with areas that experienced a reduction in the force of the Plague
    - also in general, rat populations tend to lose immunity to the Plague over time



# THE BLACK DEATH

RECURRENCES OF THE PLAGUE AFTER 1347-1352 CE

- why didn't the Black Death happen again?
  - best theory to date: **Colin McEvedy** (*Scientific American*, February 1988) has suggested that a less virulent bacillus closely related to *Yersinia pestis* emerged
    - dictum of pathology: “A less virulent parasite will replace a more virulent one”
    - this new strain is *Yersinia pseudotuberculosis*
    - potential victims were exposed to the *Yersinia* strain without actually contracting the Plague
    - this explains why the Plague never swept Europe again: its momentum was stopped by resistance

# THE BLACK DEATH

## THE LONG-TERM CONSEQUENCES OF THE BLACK DEATH

- bubonic plague still persists in many parts of the world
  - even in the US, especially in the West among hunters of rock chucks
  - but it's no longer a medical issue of the sort it was in the days of the Black Death, because it can be controlled with antibiotics
  - of course, if the bacillus mutates or becomes resistant to antibiotics, it could become a serious threat again

# THE BLACK DEATH

## THE LONG-TERM CONSEQUENCES OF THE BLACK DEATH

- the greatest medical threats to human life today center around virus-born diseases, like AIDS, Ebola, avian flu, etc.
- bacterial infections seem less sinister, but it's not as simple as that
  - medical historians have established that there is higher resistance to AIDS in those populations whose ancestors were exposed to the Black Death
  - so the Black Death may be helping certain communities today fight AIDS!