

## **Lecture #3: Migration, Disease, and Death**

### **Suggested Readings:**

William H. McNeill, Plagues and Peoples, 1976.

Alfred W. Crosby, Jr., The Columbian Exchange, 1972.

Samuel K. Cohn, The Black Death Transformed: Disease and Culture in Early Renaissance Europe, 2003.

Kenneth F. Kiple, The Cambridge World History of Human Disease, 1993.

David S. Jones, Rationalizing Epidemics: Meanings and Uses of American Indian Mortality since 1600, 2004.

### **Outline:**

#### **I. Prelude: The Black Death**

migration of organisms between ecosystems as a central theme in environmental history

disease fundamental to environmental history: humans as environments to disease organisms

movement of epidemic diseases not limited to Old World/New World migration

among most famous epidemics: Black Plague, beginning in Europe in 1346: massive effects

plague originated from foothills of Himalayas, Burma; Mongol caravans as vehicles for transporting it westward.

old story: plague endemic to rats and other rodents, transmitted by fleas living in rodent community

movement of plague west from Burma to China to Europe infected human and rat populations

differential effects: like a childhood disease for rats; 30%-90% mortality in humans

but much recent controversy: Cohn and others have argued that rats and fleas could not have caused: anthrax?

four years after plague started in Europe in 1346, 1/3 population dead, 25 million people

conclusions: human migration accompanied by other creatures, some lethal;

we share many of most important illnesses with animals (epizootics);

disease endemic to some areas, absent in others: joining them often disastrous

technology of transport make trade corridors also disease vectors (war plays role too)

late Middle Ages as time of increasing contact between Europeans and rest of world:

disease fundamentally linked to this, both imported into Europe and exported out of it

#### **II. Virgin Soil Epidemics**

not in interest of disease organisms to wipe out host populations (cf rat/human & plague)

antibodies as host defense: disease can lead host to generate these but still reproduce

immunities to diseases more historical than genetic: population's history of disease allows mothers to transmit

antibodies to offspring in utero and through milk

collective pool of antibodies protects population as a whole from disastrous epidemics

But: Indians lacked historical experience of many Old World diseases: measles, smallpox, chickenpox, mumps,

malaria, yellow fever, etc. extremely healthy, but much at risk

why? migration via Arctic, inhospitable to illnesses; migration in populations too small to act as self-sustaining host

to disease organisms; brought no domesticated animals to act as additional host pool for diseases

as a result, migrating Indians abandoned illnesses, and historical immunity to them

reintroduction of disease organism into such a population produces "virgin soil epidemic"

such epidemics devastating to adults in reproductive years, and to infants

not that individuals are more or less susceptible to infection, but population as a whole

classic virgin soil epidemics on islands, or in isolated populations: Iceland 1717 smallpox

note multiple exposure to epidemics that Indians would suffer: Alcan Highway, 1942-3

#### **III. We Were Born to Die (Mayan lament)**

early disease migrations to New World non-virulent endemic ones (had to survive ship trip)

harder for virulent organisms to travel: have to keep finding hosts throughout journey

1518: smallpox appears Santo Domingo, one-third to one-half of natives die in few months

1521: smallpox aids Cortes in conquest of Tenochtitlan, Aztec empire

repeated epidemics, different disease, brought long population decline

35 separate recorded smallpox episodes, 1520-1898; cf Mandan epidemic, 1837

#### **IV. Counting Up the Victims**

total demographic effects of epidemics only realized recently

early population estimates followed James Mooney's Aboriginal Population of America North of Mexico (1928):

estimated 1.1 million Indians in all of North America.

W. W. Borah and S. Cooke begin gathering epidemic data in 1930s, 40s, re Mexico & CA

1966 Henry Dobyns assumes 90% mortality and calculates pre-Columbian North American Indian population at 10-

12 million, Americas as a whole 90-110 million. still controversial.

key conclusion: European migration produced decline in N. Am. Indians from 10 to 1 million

dramatic social, economic, political, cultural consequences, we'll explore more later

#### **V. The Continuing Migration of Death**

whole process reproduced Old World disease environments for Europeans too

African diseases in S. Carolina favored blacks in rice areas (malaria, sickle cell)