

Power, politics and environmental change

MA Environmental Humanities 2012-13

Masaryk University, Brno, Czech Republic

Class 8

The role of nature in environmental change II: nature's agency

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Introduction

- Main point: ecological conditions make political history
 - Avoiding ‘determinist’ territories...
- Why you should know about it?
 - Approach: complement structure discourse as sources of power

Class outline

- Class assignment
- Differences McNeill's – Diamond
- Power and environmental change: review

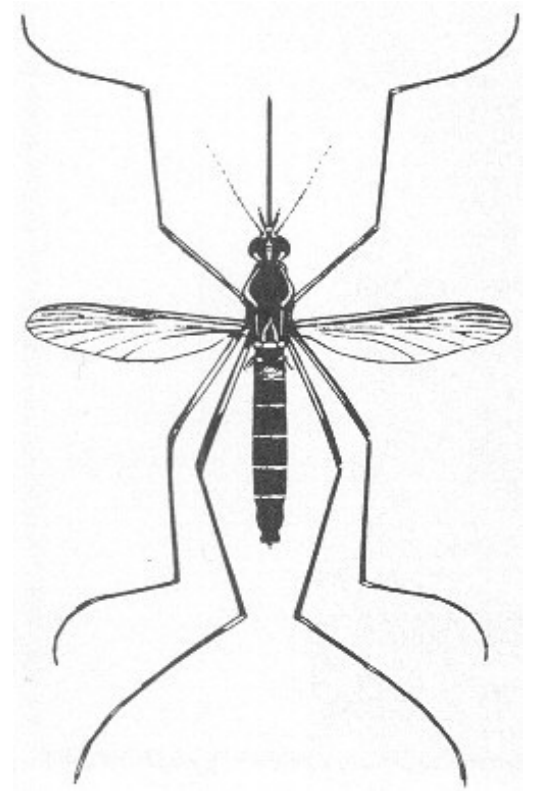
McNeill argues that although it is probably a rude blow to our species “lowly mosquitoes and mindless viruses” have the power to shape human international affairs.

How did mosquitoes (*A. aegypti*) helped the Spanish Empire retain key fortifications in the Caribbean against the attacks of other European powers (e.g. British, French, Dutch, etc.)?

THE QUESTION

Yellow fever (YF)

- Yellow fever: lethal disease
 - Until early 20th century: role of mosquitoes as disease vectors was found
- Virus vector (disease transmitter): females of *Aedes Aegypti* mosquito
 - Other disease hosts: primates (humans, monkeys)
- Tropical and Sub-Tropical Africa & South America
- Incubation period: 3-6 days
- Most cases only a mild infection with fever, headache, chills, back pain, loss of appetite, nausea and vomiting (lasts 3-4 days)
- But 15% enter 2nd toxic phase:
 - recurring fever
 - yellow skin colour (liver damage)
 - abdominal pain
 - 'Black Vomit' (contains blood): caused by bleeding in mouth, eyes and stomach/intestines
- Toxic phase: fatal in approximately 20% of cases
- Surviving = life-long immunity



Aedes Aegypti Mosquito (source: www.memphishistory.org)

Yellow fever (YF)

- Introduced to America via mosquitoes brought from Africa with slave trade (16th-17th century)
 - Humid & crowded conditions of ‘crossing’: help mosquito survive
- Role of **local ecologies**: plantation ecology of colonies + pre-existing swamps
 - Water for incubation (e.g. barrels for potable water storage)



A tobacco plantation (source: Public Broadcasting Service)

Differential immunity

- Mosquitoes and diseases wreck havoc but not indiscriminately: **differential immunity** (YF)
 - If brought up as child in places where yellow fever common (endemic) then have some resistance and less likely to fall ill or die when adult
- But if virus finds many organisms without antibodies becomes epidemic!
 - Attacks those without immunity (to find hosts)

Military implications

- So, if all of a sudden you bring (e.g. in America) many non-immune bodies (e.g. people who have grown up in places where there is no YF), virus (latent) finds space (human body) to expand -> epidemic
 - Such non-immune bodies: European soldiers (from Europe)
 - Instead: African slaves + locally-born colonists/recruits + ‘seasoned’ troops: no space for epidemic

Knowledge by observation – not science

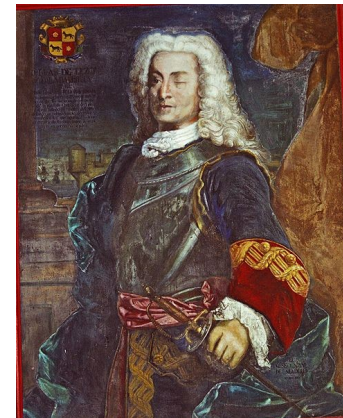
- Colonial officials and aspiring attackers knew from observation (empirical knowledge) that this happened
 - Although did not know exactly ‘why’: the ‘Climate’
- Also knew that rains increased deaths
 - More water for mosquitoes to reproduce
- ...and that number of deaths would increase exponentially after 6-8 weeks
 - Happily coincided with fortification durability!
- So, prepared themselves for a 6-8 week defence before letting YF “take its toll”
 - Fortification and provisions + Soldiers

Battle for Cartagena (siege)

- Vernon's fleet: largest amphibious expedition ever (after WWII Normandy)!
 - 186 ships + 29,000 soldiers (UK + N 'US')
- Cartagena defense:
 - 4,700: permanent battalion ('fijo') + local militia + Amerindian bowmen + sailors – Only 700 new to environment
 - 6 ships
 - Admirable fortifications
 - Scarce: rifles, powder, food (Lezo)
- Series of delays resulted Brit (McNeill calculates)
 - 22,000 deaths/ 29,000 soldiers
 - 1,000 died in combat
- Compare this to:
 - Brit army deaths in European war theatres = 8% deaths: wounds + disease
 - ESP army: 200-600 deaths (no YF mention)



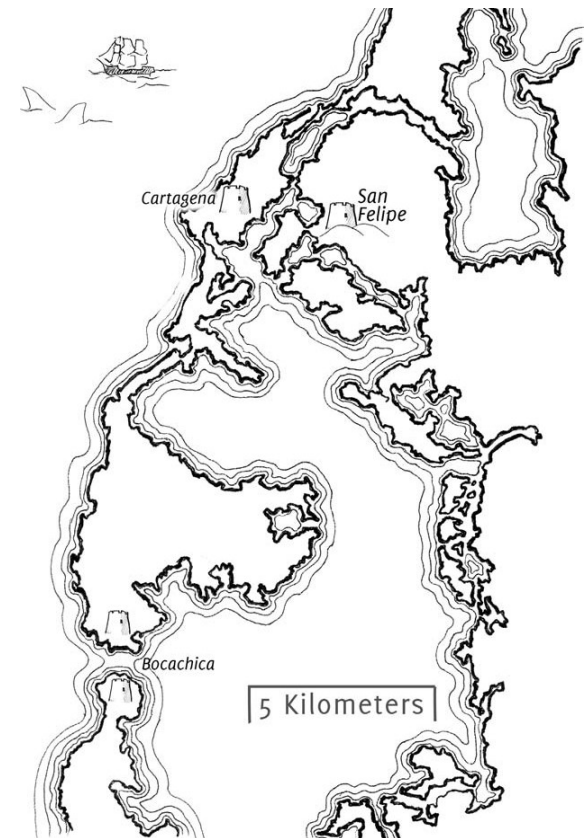
Edward Vernon, by Thomas Gainsborough (source: National Portrait Gallery)



Blas de Lezo (source: Museo Naval de Madrid)

Time is gold

- Series of delays resulted in siege lasting for 54 days (8 weeks approx.): YF takes toll!
- Intentional delays
 - British: Wentworth wants to use orthodox siegging methods to capture Bocachica forts (reduce them one by one by erecting artillery batteries and open breaches for troops to go in): time-consuming method
 - Spanish: sink merchant vessels in navigable channels of bay
- Unintentional delays
 - British: failure of original plan for Cathcart's army to arrive in Cartagena by late December (start of dry season) instead of late March (start of rainy season) – due to military inactivity and corruption



Unintentional key factors

- “In an epidemiological irony ... Cartagena’s defence was more secure because no large contingent of reinforcements from Spain had joined the garrison
 - “A few hundred reinforcements among an urban population of 10,000 who provided herd immunity gave the yellow fever virus no foothold”

Political importance of differential immunity

- YF: crucial part of **Spanish imperial defence**
 - Without it Spain would have lost much of her American empire in 18th century
 - Same but vice versa for success of independence wars in 19th century Americas (e.g. southern parts of US)
- Until 1770s, mosquitoes **underpinned** geopolitical order in Americas – after that they **undermined** it!

Human–environment: who has power?

- **Ecological conditions that prevailed in colonies governed probabilities of success and failure**
 - Mosquitoes
 - Plantation ecologies and swamps: mosquito incubator & habitat sites
- *Lowly mosquitoes and mindless viruses can shape human international affairs*
 - *Blow to our species, but true!*

<http://www.youtube.com/watch?v=JzZpeisdMJ4>

**THE ARGUMENT: PROF MCNEILL DISCUSSES BOOK
"MOSQUITO EMPIRES"**

CLASS QUESTION

Similarly to JD, McNeill tells us that ‘nature’ or ‘the environment’ (mosquitoes, swamps, etc.) is crucial for shaping human fortunes (e.g. colonisation project)

But, his argument, his explanation of the importance of nature in making history is different from Jared Diamond’s

How? In what is it different?

- Part of difference: **degree they emphasise** ‘determinant’ role of nature
 - “I will, as authors often do, underplay other considerations”
- More clear difference: McNeill emphasis on **interaction** of physical – social factors rather than determinant role of one of them
 - “this is not an essay on mosquito or environmental determinism”

Interaction of factors

- Ecology shaped history but it could do so as a result of accidents of history and environmental change brought about by humans (agency)
 - **Slave trade** brought yellow fever and malaria
 - **Disease environment** of Caribbean: **built/ cultural artefact** (e.g. plantations)
 - Haitian and American **revolutionaries** took stand, otherwise importance of differential immunity would not materialise
 - If doctors were more successful (earlier) -> erase effects of differential immunity: accidents, luck
- “Humankind and nature make their own history together, but neither can make it as they please”

Human–environment: who has power?

- **Quests for wealth and power** (cultural factors) changed ecologies in Greater Caribbean
- But also: **ecological changes** shaped fortunes of empire, war, and revolution
- Viruses, mosquitoes, monkeys, parasites, swamps, as well as humankind **make political history**

Concluding remarks: disease and power

- With invention of yellow fever and malaria vaccines at end of 19th early 20th century
- **Source** of differential vulnerability changed
 - “In this new world of effective vaccines and drugs”
 - Rich and powerful societies capable of developing vaccines and inoculating their populations
 - Became even richer and more powerful
- **Source of power:** from ‘nature’ (one’s own organism) to technology (external material affluence)



Agramonte, Lazear, and Carroll in Cuba

Source: <http://yellowfever.lib.virginia.edu/reed/commission.html>

CLASS ACTIVITY

We have looked at three ways in which power operates (and sources of power): structure, discourse, and nature. I'd like to know what points 'struck' you the most!

Get into groups, discuss and provide answers to following points (15 min)

Then, present your answers in the class (5 min each group)

What Stuck?

- An "Aha" moment
- A pleasant surprise
- Something that you had to struggle with to understand
- Something you don't agree with
- Something that you agree with strongly
- Something you thought was particularly interesting
- Something you didn't expect
- An insight or solution
- Something you want to know more about
- A question that you have