

# Landscape of Caste

'Transmission of craft-knowledge created occupational castes' (64)



Mines (miners)

Shift from hierarchy of peasants and herdsmen through trade and power



Hunters

Tools: stones for tools, construction, weapons (first efficient tool – miner's hammer 'ein Faustel.'

Woodsmen



Peasants

Herdsmen



Fishermen

# Important contributions to energy

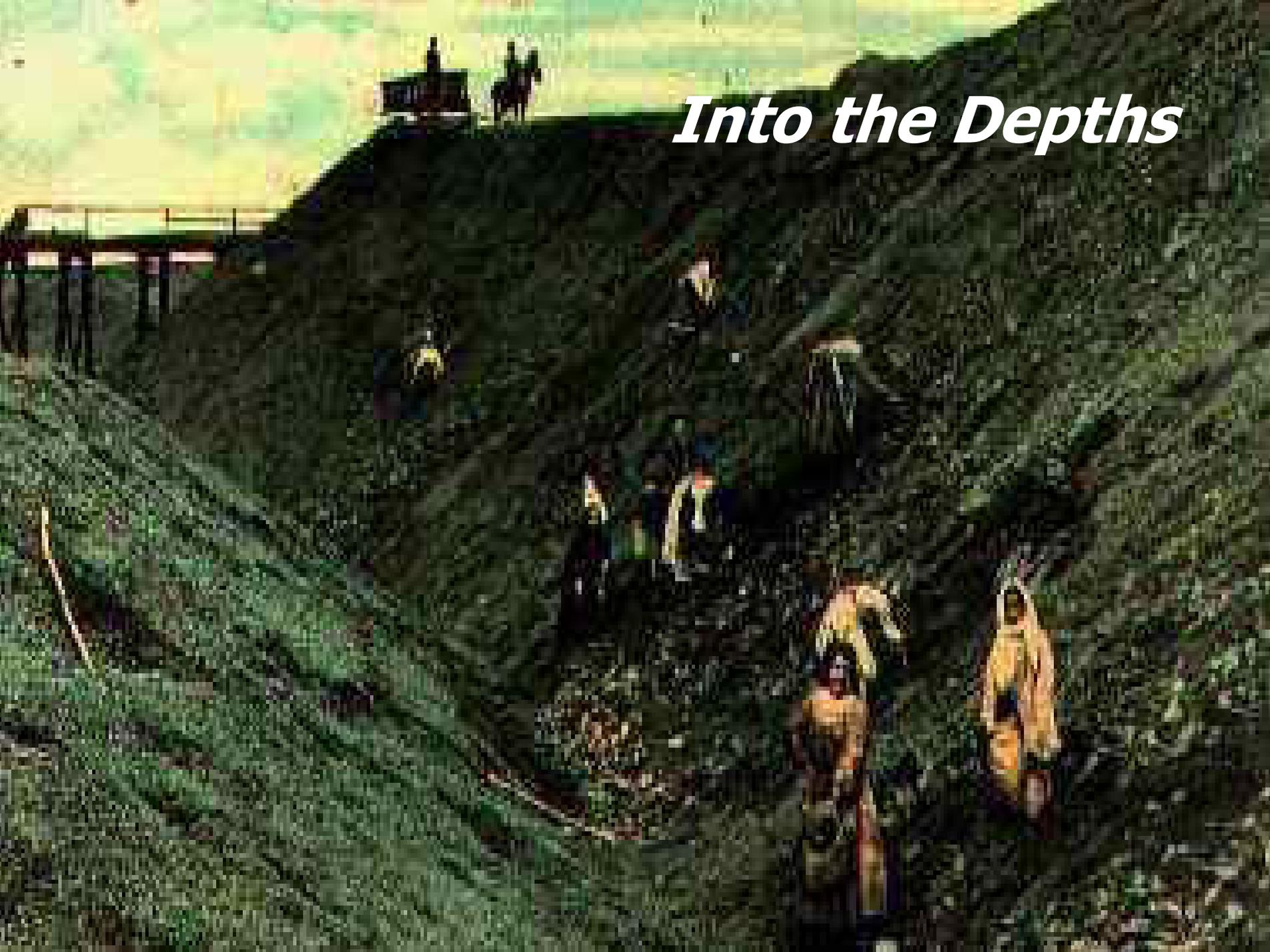
- Fishermen—boats (manpower to horsepower)
- Farmers/peasants—hoe, scythe, irrigation ditches, cellars
- Woodsmen—wood for fuel, lathe, ax,
- Hunters—hammerhead, knife—pre-war,
- Miners—metals, organic energy (coal), luxury items (gold, minerals) 'assault on physical environment' (isn't this what many forms of energy do?)

# Mining: A Barbaric History

'Mine: blast: dump: crush: extract: exhaust—there was indeed something devilish and sinister about the whole business. Life flourishes finally only in an environment of the living.'

- Prisoners, Criminals, Slaves
- Late Middle Ages—free labor enters mines
- Danger, difficulty, mortality, darkness, struggles, perpetual winter, isolation, lifeless, irregular, uncertain
- Materials produced from mine used for warfare, use brute force. Melting, breaking
- Mines are for men, practices of mine affect the miner (psyche)

# *Into the Depths*





# Miner's Life

- Processed underground present above
- Devastation of mining on landscape
- Psychological affect on miners
- Drinking/gambling, Animal-like state

# Affiliations of mining

- Molders/Smiths
- Jewelry making
- Separated from mines in urban areas
- Delicacy
- Pleasant life

And, Energy.....?

*Mines as devastating to environment  
as energy produced from them. Was  
it necessary/profitable?*



# Mining and Modern Capitalism

# Mining Bound to Modern Capitalism

- Rapid advancement when mined by free men
- More \$ going into mine = safer mine
- Peasants' War of 1525
- Slavery  Wage Slavery

# Increased Demand for Mine Materials

- Warfare increased consumption of iron
- Relationship between value and scarcity
- Real value = power to sustain/enrich life
- Curse of Midas

# The Primitive Engineer



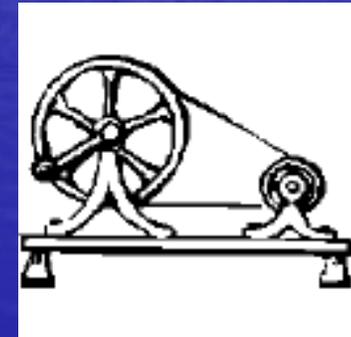
# Wood in all its Glory

- Had place of stone up until 19<sup>th</sup> century
- Exceptional Qualities for Transport
- Combustible

“Take away wood, and one takes away literally the props of modern technics”

# Woodman as Engineer

- Developed the Wheel
- Lathe
- Building Dams
- Locks
- Mills



The list is endless

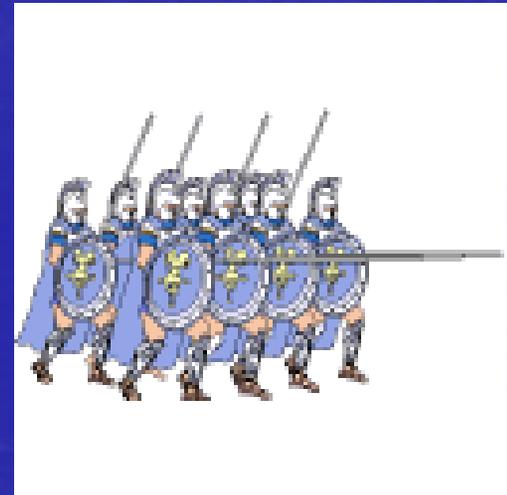
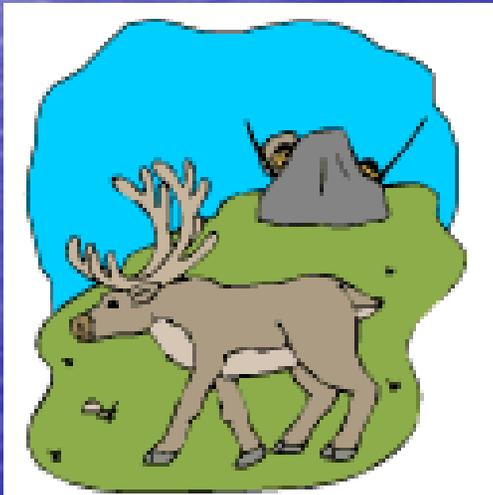


# Big Problem

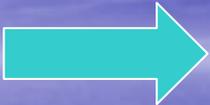
- DEFORESTATION
- Soil Erosion



# From Game-Hunt to Man-Hunt



# Soldier Major Influence on the Machine

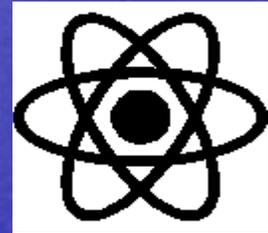
- Hunter  Soldier
- Soldier  Conquer
- Clock = will-to-order  
Cannon = will-to-power
- Soldierly habits of thought aid spread of machine



“With a mere pull of the trigger, he [the Soldier] could annihilate an enemy: that was a triumph of natural magic.”



# Warfare and Invention



# No Limits

- Inventions are infinite
- Ideals of humanity don't exist
- *"...now I am become Death, the destroyer of worlds..."*
  - Physicist Robert Oppenheimer  
Supervising Scientist Manhattan Project
- Military Development borrowed from other trades

# Effects of Firearms

- Demand for Iron
- Platform for other machines, i.e. combustion engine
- Military engineer

# Military Mass Production

- Arms factories
- 1785, France – Interchangeable parts
- Concept of Uniformity
- Warriors to soldiers

# Effects of National Armies

- Inefficiency of the paid soldier
- Armies – negative producers
- Importance of military uniforms
  - Louis XIV → First large scale demand of standardized goods

“ War is not only the health of the State: it is the health of the machine, too.”

-Lewis Mumford

# Drill and Deterioration

- Soldiers are victims of simplification
- Machine like approach = lack of intelligence and adaptation
- “To soldier” = withhold efficiency in work

# Post War Love and Wastefulness

- Need for luxuries
- Women give up their bodies in response to their loved one returning
- Men in return, must glorify the women with luxuries (need for cheap, mass produced inferior materials)

# Mars and Venus



# Fantasies into Machines

- Steam Engine used to operate the organ
- Children's toys = future inventions
  - Airplanes, telephone, cars
- “The spirit of play enfranchised the mechanical imagination.”– Lewis Mumford

# Productive Drive

- Acquiring money = moving out of one's class
- The Palace was Heaven—sacredness
- Theory of the New Age

# What does this have to do with energy ?

- Soldiers = machines
- Growing need to supply power to “toys”
- \*\*Wartime = Lack of man power in factories\*\* = need for machines