

ANT 3514- Introduction to Biological Anthropology
 Early *Homo* and *Homo erectus*
 Lab 10, Week of 3/21/05

Purpose: The purpose of this lab is for you to examine fossil casts and information concerning transitional hominids. You will answer questions concerning *Homo erectus/ergaster*, *Homo neanderthalensis*, and *Homo heidelbergensis*, as well as consider comparative questions concerning the relation of these hominids to earlier forms (*Homo habilis* and *Homo rudolfensis*).

Associated Readings: Chapters 11-12 in your textbook

Terminology Issues: As you are all now well aware, things change quickly in the field of paleoanthropology! This includes various issues in terminology.

Homo erectus* v. *Homo ergaster – Fossils attributed to these groups span a wide geographic range and an enormous span of time. In addition, the fossils include a wide range of anatomical variability. As such, many researchers (the “splitters”) claim the group should be divided into two. Since the first finds attributed to this group came from Asia, “splitters” feel that the name *Homo erectus* should be reserved for those fossils more closely associated with the Asian finds in geographic distribution, time range, and anatomical features. The other fossils (those from Africa) should therefore be given a new designation of *Homo ergaster*. Not all researchers agree, however. The “lumpers” feel that the anatomical variability found among these specimens falls in line with their wide geographic distribution, and therefore only the name *Homo erectus* should be retained. The author of your textbook, Bernard Campbell, is a lumpers (at least concerning *Homo erectus*). Therefore, keeping in line with the text, those specimens originating from Africa will be denoted as “African *Homo erectus* (*Homo ergaster*).”

Homo neanderthalensis* v. *Homo sapiens neanderthalensis – It is now generally agreed by most researchers that Neanderthals are a separate species of the genus *Homo*. However, you should be aware that Neanderthals are sometimes (depending on what you are reading and the publish date) referred to as *Homo sapiens neanderthalensis*, denoting a subspecies designation within the species *Homo sapiens*. Keeping in line with the text, Neanderthals will be denoted as *Homo neanderthalensis* (or simply Neanderthals).

Although this lab is not due until next week, it might be helpful to fill in the following table before you attend your lab session.

(at home) Transitional Hominids

Hominids	Date Range	Cranial Capacity	Holotype	Geographic Distribution
<i>Homo habilis</i>				
<i>Homo rudolfensis</i>				
<i>Homo ergaster</i>				
<i>Homo erectus</i>				
<i>Homo heidelbergensis</i>				
<i>Homo neanderthalensis</i>				

Useful websites:

www.talkorigins.org/faqs/homs Click on hominid fossils and type specimens under table of contents

www.modernhumanorigins.com/hominids.html

STATION 1 – Early *Homo*

(in class) Discuss the anatomical variation between *Homo habilis*, African *Homo erectus* (*Homo ergaster*), and *Homo rudolfensis* regarding:

	<i>Homo rudolfensis</i>	African <i>Homo erectus</i> (<i>H. ergaster</i>)
Supraorbital Torus		
Cranial Vault (Shape/Height)		
Orbit Size and Shape		
Occipital Area (Torus)		

(at home) Some scientists have argued that *H. habilis* and *H. rudolfensis* are one species. Do you think there is good reason to separate these skulls into two species or should they be collapsed into a single species? Explain your reasoning.

STATION 2 – *Homo ergaster* vs. *Homo erectus*

(in class) Compare *Homo erectus* and *Homo ergaster*. Complete the table:

<i>Homo erectus</i> (Sangiran 17)	<i>Homo ergaster</i> (KNM-ER 3733)
- long and low vault, receding frontal “squama”	
- angulation at rear of skull with a “transverse” occipital torus present	
- large supraorbital torus	
- high, rounded orbits	
- strong alveolar prognathism	
- canine fossa absent	

STATION 3- *Homo neanderthalensis*

(in class) Compare the “classic” Neanderthal features with the anatomically modern human from Cro-Magnon (France).

	<i>Homo neanderthalensis</i>	<i>Homo sapiens</i>
Skull vault (long vs. short; high vs. low)		
Presence/Absence of occipital bun		
Supraorbital torus		
Eye orbits (shape/size)		
Nasal area (shape/size)		
Degree of Prognathism		
Presence/Absence of canine fossa		
Retromolar gap (size)		
Presence/Absence of chin		

(at home) What about these features (and other anatomical features) suggest the Neanderthals were adapted to the cold?