



Homo ergaster

Introduction

Homo ergaster is one of the more problematic of somewhat accepted species designations currently tossed around in anthropological literature. Each individual researcher that sees *ergaster* as a valid taxon sees different specimens as belonging or not belonging to the taxon. Many researchers deny any validity to the species at all. On the whole though, most researchers see too little difference between *ergaster* and *erectus* to form the basis of a species of the former, separated from the latter. As a general rule of thumb, one can consider most attributed *ergaster* specimens to be early *erectus* geographically confined to Africa (however, this is not a hard and fast rule).

The taxon *ergaster* was first described in 1975 by C. Groves and V. Mazak. The specimen attributed as the type specimen was ER 992, an isolated mandible. Since then, other specimens have been attributed by various authors to *ergaster*, with most researchers placing the same fossils in *erectus*. Those who see it as a valid taxon tend to see it as more closely resembling modern *H. sapiens* than does *H. erectus*. They tend to see *ergaster* as a direct ancestor of modern humans with *erectus* being an evolutionary dead-end. Many Out of Africa supporters use this taxon as evidence that Asian and European specimens did not contribute genetically to the modern human genome, but this claim is very weak.

Diagnostic Features

The type specimen for *ergaster* is KNM-ER 992. Groves and Mazak claimed that the mandible was significantly different from *H. erectus* to deserve its own species designation. However, they did not

compare it to *H. habilis*, and the mandible may actually belong to that taxon. The specimen showed some periodontal disease, as seen by absorption of bone around the roots of the teeth. The mandibular symphysis also shows strong markings for the digastric muscle (important for swallowing and vocalization), which some people have interpreted as proof of language by this time.

One of the most spectacular and important paleoanthropological finds in recent years was the Nariokotome Boy (KNM-WT 15000), by a team of researchers led by Richard Leakey and Alan Walker. This find represents the most complete early hominid ever found, with almost the entire cranium, and most of the postcranial material intact. This specimen has been attributed as a male *ergaster* by some, though most place it in *H. erectus*, and that is where it will be discussed in detail. Other specimens that have been attributed to *ergaster* include KNM-ER 3733, SK 847, and KNM-ER 3883.

Several researchers have tried to define the difference between *ergaster* and *erectus*, P. Andrews and B. Wood among the more prominent. P. Andrews defined seven autapomorphies that were characteristic of *erectus*, but which *ergaster* supposedly lacked. However, G. Bräuer have shown that these are not autapomorphies. For example, some *erectus* do not possess these features, while some *ergaster* and some *habilis* do. Also, some of these autapomorphies are not independent traits, and should not be considered separately (e.g., frontal keel and parietal keel). B. Wood lists seven traits that link *ergaster* with *H. sapiens*, and that distinguish *ergaster* from *erectus*:

- Increased cranial breadth across the parietal bones.
- Increased occipital bone length.
- Broader nasal bones.
- Broader nasal opening.
- Shorter cranial base.
- Greater development of the mandibular symphysis.
- Narrower M1s and lower canines.

However, these synapomorphies have been convincingly challenged by showing them to be present in *erectus* populations from Asia. Also, more recent analyses by other researchers seem to indicate that even if *ergaster* specimens are considered as a different taxon than *erectus*, the *erectus* material is still closer to modern humans cladistically.

Conclusions

In short, *H. ergaster* does not show significant promise of lasting as a separate taxon due to several factors. It has not been shown to be significantly different from *erectus* to require the designation of a new hominid species, and it has not been shown to be closer to modern humans morphologically as has been claimed by some. At this time, *ergaster* basically means early *H. erectus* from Africa.

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