

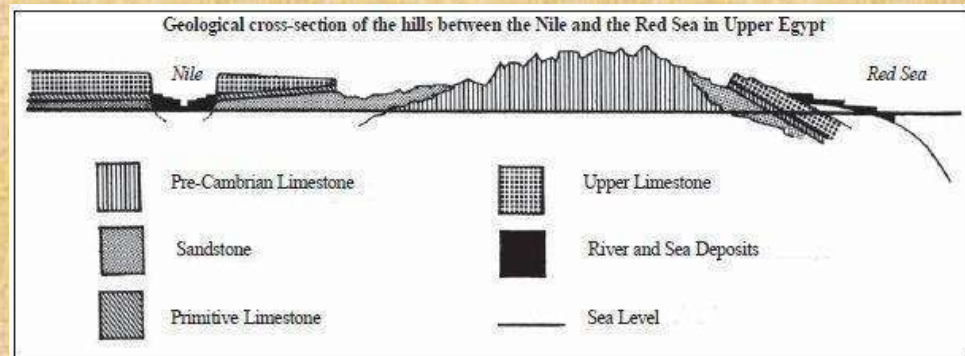
LIFE IN THE EASTERN DESERT OF EGYPT

Unit 3 – Gold Mining

HPAH7006

Developing the Mines

- Exploitation of gold resources from ED since at least Pharaonic times.
- High levels of activity in Ptolemaic period – especially in central ED, broadly between the Wadi Hammamat and Barramiya.
- Loss of evidence due to flash floods and more recent mining.



Sandford & Arkell, 1928, Report of the Prehistoric Survey of Egypt, Chicago

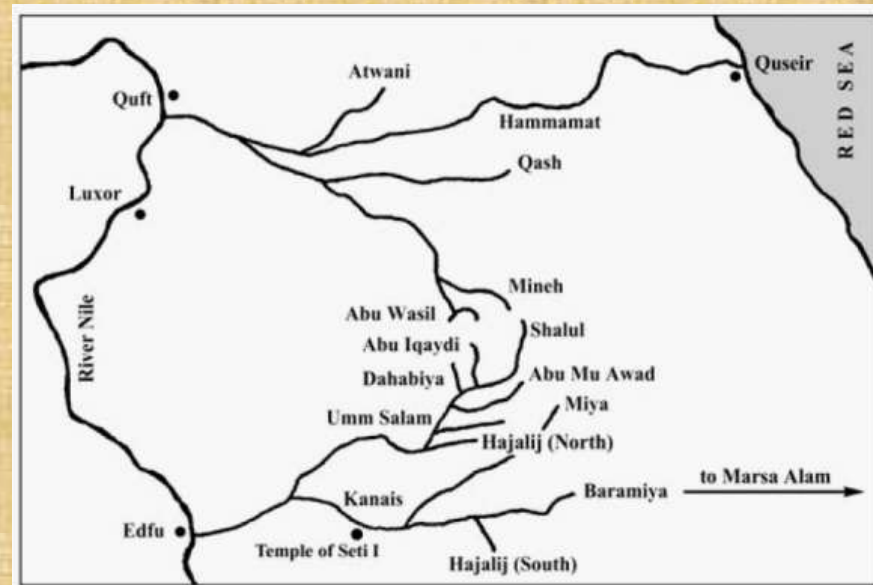


Image from <http://www.eastern-desert.com/>

Archaeological Evidence

- ▣ Surveys, but also excavations at Bir Umm Fawakhir and Samut.
- ▣ Circular ore grinding facilities at the site of Daghabag - depressions along their long axes to allow a large vertical grinding wheel to be driven by a draft animal.
- ▣ Black glazed ware lamps discovered at Samut (niche in rock acting as resting spot), as well as remains of a forge and mining tools at Bi'r Samut fort (pick, mallet and anvil).



↑ Image from Sidebotham, Hense and Nouwens 2008



Routes of survey teams, → Morrow & Morrow 2002



Image of Daghabag III mine from Klemm and Klemm 2013

Agatharchides' description of the gold mining activity (1)

- ▣ Description by Agatharchides, ca. second century BC (at latest).
- ▣ Relating to Wadi 'Allaqi region of southern Egypt and northern Sudan, but maybe further north?
- ▣ Accuracy of details? – find of a lamp in situ in an alcove carved of one of the emerald mines in Middle Sikait. Also finds more recently at Samut.
- ▣ Mortars and grindstones at Ptolemaic-era gold mines at Umm Howeitat al-Qibli.

Description of Conditions

- ▣ Workforce of condemned criminals and their relatives.
- ▣ Shackled and forced to work unceasingly – supervised by foreign guards.
- ▣ Subject to beatings.
- ▣ Quartz-rock broken by the brute force of young men (lamps fastened to their foreheads).
- ▣ Young boys enter the narrow tunnels to remove the rocks and place outside.

Agatharchides' description of the gold mining activity (2)

For no mercy or respite of any kind is given to any man who is sick, or injured, or aged, or in the case of a woman for her weakness, but **all without exception are forced by blows to persevere in their labours, until through maltreatment they die in the midst of their tortures.** So the poor unfortunates believe, because their punishment is so excessively severe, that the future will always be more terrible than the present and **therefore look forward to death as more to be desired than life.**" – Agatharchides 5.26b = Diodorus Siculus 3.13.2-3.

Description of conditions (cont.)

- ▣ Men over 30 pound the rocks with iron pestles in stone mortars into fine vetch-seed sized pieces.
- Site of Samut does reveal evidence of sorting of rocks and areas for crushing.
 - ▣ In a few places these are associated with finds of lithic materials: anvil tables, mortars and pestles (iron tools likely supplement by stone tools).

Agatharchides' description of the gold mining activity (3)

- ▣ These pieces are ground by women and old men into flour like consistency.
 - "...washings found in the Umayyad camp in Samut North are made up of an extremely fine flour, mainly composed of grains of 50 to 100 microns." – Faucher 2018.



Grinding stone (image from Faucher 2018)



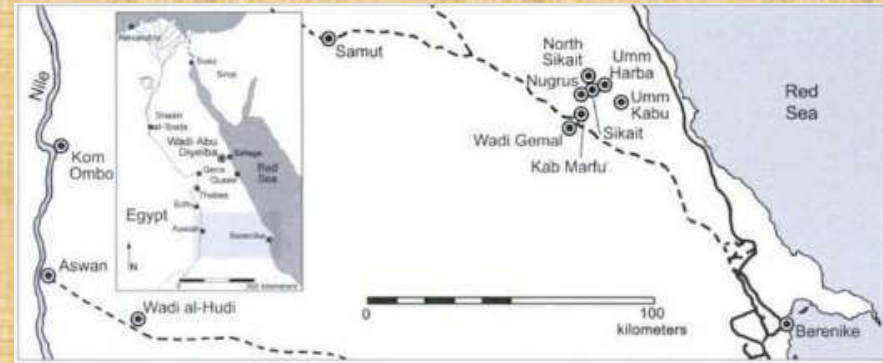
Stone mills of Samut North (image from Faucher 2018)

Agatharchides' description of the gold mining activity (4)

- ❑ Work naked, no respite for the sick, or injured, or aged – force to work through violence they die from abuses and exhaustion.
- ❑ Finally quartz substance has impurities washed away and worked with sponges until just gold-dust is left.
 - No archaeological traces of this washing activity for Ptolemaic period (but some connecting to Arabic period).
- ❑ Placed in earthen jar with other materials and baked for five days – resulting in pure gold.
- ❑ No clear figure for amount of gold produced by such activity in Ptolemaic period, but for site of Samut, F. Téreygeol estimates the vein may have enabled 100 kg of gold to be produced).

Other Mining Activities - Amethyst

- Amethyst is a violet-coloured translucent form of quartz.
- Areas with amethyst mines – Wadi al-Hudi (largely Pharaonic) and Wadi Abu Diyeiba (worked from Ptolemaic period).



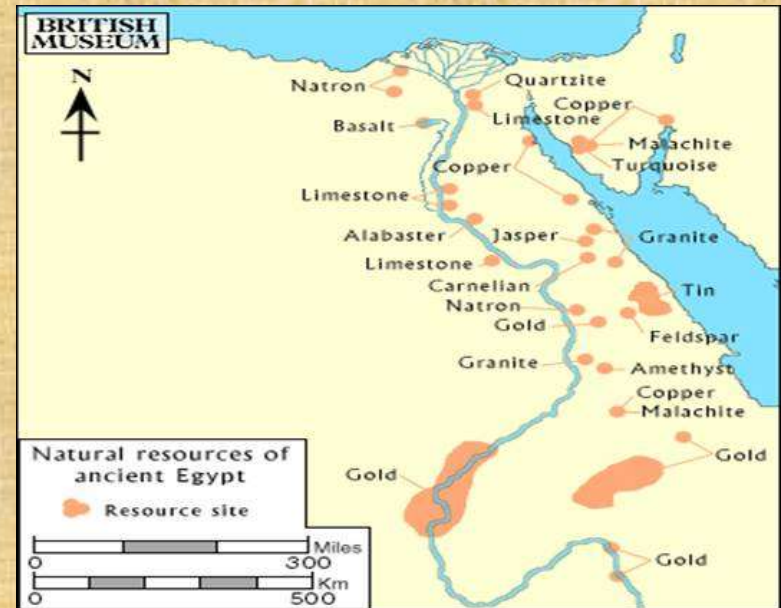
Map from Sidebotham, Hense and Nouwens 2008



Cat – Bastet? – Late Period/Ptolemaic



Taueret, Late Period or Ptolemaic



Other Mining Activities – Beryl/Emerald

- ❑ Beryls and emeralds were mined in the Mons Smaragdus region of the ED (notably quarries of Gebel Sikait and Gebel Zabara).
- ❑ Evidence of beryl working at Berenike (1st and 2nd centuries AD).
- ❑ Absence of fortifications at the beryl/emerald sites.
- ❑ Blemmyes in control of mines from early 5th century AD - Olympiodorus 35.2 = Photius *Bibl. Cod.* 80, p.182; Cosmas *Christ. Topog.* 11.339.



Rock cut temple at Sikait



Image from <https://www.memphistours.co.uk>