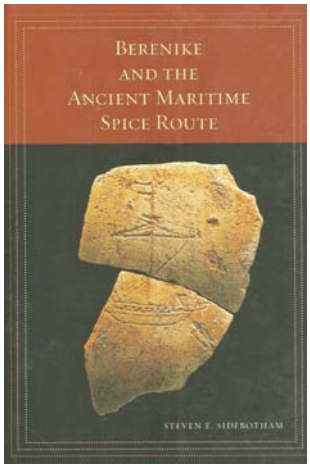

Berenike and the Ancient Maritime Spice Route. Steven E. Sidebotham. The University of California Press, Berkeley, CA 94704, USA. 2011. xvii + 434 pp. Price: £ 34.95.

Berenike Trogodytica was a Roman entrepot located on the Red Sea in the southeast of present-day Egypt. The remains of the town lie about 825 km south of Suez and 260 km east of Aswan on the Nile. It was a trans-shipment port for goods from East Africa, southern Arabia, India and Roman Egypt. The Ptolemaic authorities of Egypt founded this settlement at the interface of the Eastern Desert and the Red Sea during the reign of Ptolemy II (285–246 BCE). Berenike eventually evolved into a bustling metropolis by the 1st century CE. At the height of its activity, as many as 120 ships used to berth here annually. Most of the ships had 75–200 tonnes capacity.

The Roman Empire lasted from 27 BCE to 476 CE (a portion of it up to 1453 CE). Sea trade began around the beginning of the Common Era during the reign of Augustus after his conquest of Egypt in 30 BCE. However, it was the Ptolemaic dynasty of Egypt that had developed an active sea trade with India using the Red Sea ports. Prior to this, the Romans used to obtain goods from India by an overland route over present-day Iran and Iraq, but the process used to be slow, difficult and hazardous. The Romans had used three Red Sea ports – Arsinoe, Berenike and Myos Hormos. Among these, Berenike was used most often.

The Romans had an insatiable desire for goods from India. The main imports from India consisted of black pepper, teak wood, beads made of precious and semi-precious stones, cameo blacks, sail cloth, cotton cloth, silk, ivory and ceramics, mainly crockery. Imports were made from Sri Lanka too. There were also items from the Far East, but they are assumed to have been supplied by the middle men or traders of India, as the country used to have regular cultural and commercial contacts by sea with various countries in the Far East.

The imports into India from Rome used to consist of gold and silver in the form of coins, and wine in amphoras. There are numerous evidences of this from the excavations carried out in different parts of peninsular India. The important ports in India mentioned in the text are Barygaza (Gulf of Khambat), Muziris, Nelkinda and Arikamedu (south of Puducherry).

According to Pliny's *Natural History* (50–77 CE), the Romans had discovered the monsoon winds in the Indian Ocean by the end of the 2nd century BCE. They had then called it 'Hippalus'. This made it possible for one to complete a to-and-fro journey across the Indian Ocean within an year at the most and thereby reduce the cost of goods. One could travel to India making use of the powerful southwest monsoon winds during June–October and return to India during November–March, taking advantage of the northeast monsoon winds. Accordingly, sailing to southern India from the mouth of the Red Sea started from May–June to September and the return journey from November to March–April. Though the discovery of Hippalus had been made in the 2nd century BCE, the people of the Mediterranean began to use it only from the 1st century CE.

The high period of the port town was from the 1st century BCE to the 2nd century CE. Berenike appears to have gone through a crisis during the 3rd century CE. The causes for this are not known. Its fortunes were again revived during the 4th century CE, but the town was abandoned finally in the 6th century CE, the latest dated evidence about Berenike appearing in 524/525 CE. The end appears to have been slow and natural.

This book is the outcome of an archaeological study carried out during 1994–2001 and also for one season during 2008–2009 jointly by the University of Delaware (USA), University of Leiden (the Netherlands) and University of California (USA). However, the Egyptian army stopped them from carrying out further excavations citing security concerns, as the area lies close to the borders with Sudan. Thus, nine seasons of excavation were carried out in the Ptolemaic–Roman emporium of Berenike and its environs. It was led by Steven E. Sidebotham (University of Delaware). The work was notable for its interdisciplinary approach and the very detailed discipline-wise documentation done by the specialists after each year's survey. These reports have been published in seven volumes (Sidebotham, S. E. and Wendrich, W. Z. (eds), Leiden University Research School of Asian, African, Amerindian Studies, Leiden, The Netherlands, 1995, 1996, 1998, 1999, 2000, 2006, 2007). While the book under review gives an overall and comprehensive account of the entire study, it is expected that the various discipline-wise scientists would come out with separate monographic accounts of studies done in their respective areas of work. The first such report detailing the archaeobotanical studies has been already published (Cappers, R. T. J., *Roman Footprints at Berenike – Archeobotanical Evidence of Subsistence and Trade in the Eastern Desert of Egypt*, Monograph 55, Cotsen Institute of Archeology, University of California, Los Angeles, CA, USA, 2006, p. 229).

Due to the arid climate of Berenike, all the organic materials recovered from the excavations have been in an excellent state of preservation. This has been a great advantage, even though living and working in the very xeric conditions without any regular means of telecommunication facilities, no human habitation in the nearby areas and the limited quantities of available potable water appears indeed to have been a trying experience. At one point, Sidebotham has observed that they had to make do with just 10–15 l of water per head per day to meet all their needs – drinking, washing, cooking, ablutions, etc! With hardly any permanent human habitation within any reasonable distance, more than half of the load that the team was carrying consisted of just water and fuel for their transport. In spite of this life on the edge, Sidebotham has given a remarkably comprehensive account of the lives of the people who lived in Berenike during ca. 2300–1500 years ago, covering almost every aspect of their endeavour – personal, social, commercial and so on. It is difficult to think of any similar comprehensive report of an archaeologi-

cal survey published so far. All the photographs included in the book have been taken by the author himself.

The reader can get some idea about the extent of the study from the titles of the 13 chapters – Introduction; Geography, climate, ancient authors, and modern visitors; Pre-Roman infrastructure in the Eastern Desert; Ptolemaic diplomatic, military, commercial activities; Ptolemaic and early Roman Berenike and environs; Inhabitants of Berenike in Roman times; Water in the desert and the ports; Nile-Red Sea roads; Other emporia; Merchant ships; Commercial networks and trade costs; Trade in Roman Berenike and lastly, Late Roman Berenike and its demise.

Sidebotham was greatly helped in preparing this monograph by the detailed accounts of numerous Roman and Greek authors covering almost the entire lifespan of the Berenike emporium. The most prominent among them are well known: Agartharchides (2nd century BCE), *On the Erythrean Sea* (ca. 113 BCE); Strabo (64/63 BC – ca. 24 CE), *Geography* (in later 2nd century BCE – early 1st century CE), Pliny, the Elder (23–79 CE); *Natural History* (77–79 CE); Seneca (4 BCE – 65 CE); *Natural Questions* (ca. 60 CE); Claudius Ptolemy (90–168 CE); *Geography* (in mid-2nd century CE), a nameless author in Greek, *Periplus Maris Erythracei* in 40–70 CE; the anonymously prepared maps and itineraries in Roman times, called *Peutinger Table* (5th century CE), and *Ravenna Cosmography* (ca. 700 CE).

Documentation of the Roman period has been so extensive that Sidebotham was able to prepare almost half of his book solely on the basis of these sources. For the second part, the author was able to obtain substantial information on the lives and activities of the people from the large numbers of ostraca (potsherds in which messages/figures are etched) and numerous graffiti obtained during the excavations.

Because of extreme logistical problems of the excavation site – hyperarid conditions, nonavailability of potable water, mainline electricity, telecommunication facilities, etc. the team could survey only about 2% of the surface of the site, and up to 4 m depth covering the late 1st century BCE, 'leaving about 250 years worth of site history'. In spite of these handicaps and hardships, the author has prepared a complete account in unprecedented and intimate detail on the rise and fall of this emporium, and on the lives and work of the population.

The author has estimated that the core of the emporium was only about 1 sq. km in area. Outside of this were the temples, industrial areas, storage structures and the port. There is also evidence that consequent on the silting of the harbour and the recession of the sea, its location (wharf, sea wall, pier, etc.) had to be moved further down. The author has estimated that the core population in Berenike was only about 1000 people. This did not include the substantial floating population of the emporium consisting of tradesmen, middlemen and agents, ship crew, and ship-repairing teams, etc. There is also evidence of Arab and Indian people, particularly from South India, living in Berenike for extended periods of time lasting several months. This is supported by the recovery of a graffiti containing Tamil Brahmi inscriptions, coconut shell and husk, rice and so on. Incidentally, one of the two urns found buried in the floor of the Serapis temple contained as much as 7.55 kg of black pepper. There is also evidence of the widespread and daily use of black pepper by the local people for a variety of purposes, in addition to its use as a food flavouring – in medicine, as offering to the gods, fumigation in temple rites, and so on.

This is a landmark contribution on Roman history. It gives a complete account on the lives and work of people at the dawn of history who were literally living on the edge, and a township that existed in hyperarid conditions and far removed from other human habitations.

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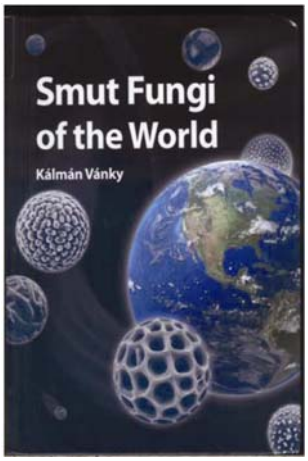

Smut Fungi of the World. Kálmán Vánky. APS Press, 3340, Pilot Knob Road, St Paul, MN 55121, USA. 2012. xvii + 1458 pp. Price: US$ 499.

This monograph by Kalman Vanky is a culmination of more than 50 years of dedicated work and passion for smut fungi. The author, who started studying smut fungi as an amateur while practising medicine, is now a world authority on the subject. He is currently the director of the richest and most comprehensive smut herbarium in the world – Herbarium Ustilaginales Vanky (HUV). He has written articles and books[1–7] and has travelled to more than 50 countries covering all five continents collecting smut fungi, checking type collections in herbaria and personal collections. The present monograph comes almost 60 years after Zundel's work[8], which appeared in 1953.

The book includes 1688 species within 93 genera distributed in 93 families of host plants, of which 90 are on angiosperms, two on Pteridophytes (*Exoteliospora* on *Osmunda*: Osmundaceae and *Melaniella* on *Selaginella:* Selaginellaceae) and one on gymnosperm (*Uleiella* on *Araucaria*: Araucariaceae). Many changes have been made in the classification of smut fungi and allied genera. For example, now there are eight orders and 26 families, in eight subclasses and four classes (three Entorrhizomycetes, Exobasidiomycetes and Ustilaginomycetes in Ustilaginomycotina, and Microbotryomycetes in Pucciniomycotina), from one order and two families identified by Tulasne and Tulasne[9]. With this classification a unique group of fungi is formed, that are plant pathogens mostly affecting the inflorescence and whose