

SUDAN ARCHAEOLOGICAL RESEARCH SOCIETY  
PUBLICATION NUMBER 24

**TRAVELLING THE KOROSKO ROAD**

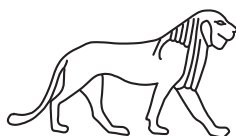
Archaeological Exploration in Sudan's Eastern Desert

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**SARS**  
**LONDON**  
2020

# ARCHAEOPRESS PUBLISHING LTD

Summertown Pavilion  
18-24 Middle Way  
Oxford OX2 7LG

[www.archaeopress.com](http://www.archaeopress.com)

## Sudan Archaeological Research Society

Publication Number 24

Editors of this volume: W. V. Davies and D. A. Welsby

<http://www.sudarchrs.org.uk>

ISBN 978-1-78969-803-9  
ISBN 978-1-78969-804-6 (e-Pdf)

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Front cover: *Alamat* on the southern approaches to the pass in the Bab es-Silik  
along the Korosko Road (photo: D. A. Welsby)

Back cover: Top – Angelo and Alfredo Castiglioni (photo: CeRDO)  
Bottom – The SARS Survey team (photo: D. A. Welsby)

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# **TRAVELLING THE KOROSKO ROAD**

Archaeological Exploration in Sudan's Eastern Desert

*In memoriam*

Alfredo Castiglioni

(1937-2016)

explorer and author

co-founder of CeDRO

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# Preface

*W. Vivian Davies and Derek A. Welsby*

This volume publishes accounts of archaeological exploration carried out during the last 30 years or so in the Sudanese Eastern Desert. It is divided into two related parts.

The first and foremost covers results from the work of the Centro Ricerche sul Deserto Orientale (CeRDO), which is based at Varese in northern Italy. Between 1989 and 2006, CeRDO, directed by the brothers Alfredo and Angelo Castiglioni, ran a pioneering programme of expeditions, which traversed the so-called ‘Korosko Road’ (the main desert route connecting Egypt and Sudan) and followed multiple other tracks throughout the Eastern Desert. They encountered in the process a rich archaeological landscape, hundreds of previously undocumented sites, many frequented over millennia, prominent among them gold-production areas and their associated settlements.<sup>1</sup> The CeRDO record, the photographic database, the material retrieved, to which several of the papers published here are devoted, are now all the more valuable, in that many of these sites have since been badly disturbed and some entirely destroyed by recent gold-mining activities (an alarming state of affairs highlighted in the Introduction below).

The second part, introduced by a concise account of the historical usage of the Korosko Road, reports in full on a single, short season of documentation, organized in 2013 under the auspices, and with the support, of the Sudan Archaeological Research Society. Its main aim was detailed recording of a group of pharaonic rock-inscriptions discovered by CeRDO expeditions, most located along the Korosko Road and almost all related to the colonial gold-working industry. The project included also a degree of investigation and mapping of the wider context, as well as the recording and study of associated archaeological material, in particular of ceramic remains. The results complement and usefully extend in part those of CeRDO.

We are grateful to the several colleagues who agreed to write reports for this volume and for the editorial assistance received during its preparation (see below). We acknowledge, of course, the core role of the National Corporation for Antiquities and Museums (NCAM) of the Sudan, for having permitted the expeditions to take place and for the ever helpful participation of its staff.

On a final sad note, we much regret the unexpected loss of Alfredo Castiglioni (1937-2016), a grievous blow to his family, friends, and the wider archaeological community. This book, to which he had already made a significant contribution, is dedicated to his memory.

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<sup>1</sup> One should also note here the complementary field-research carried out in the Sudanese Eastern Desert over a three-season period (1996, 1997 and 1999) by Dietrich and Rosemarie Klemm, the results included in their impressive *Gold and Gold Mining in Ancient Egypt and Nubia: Geoarchaeology of the Ancient Gold Mining Sites in the Egyptian and Sudanese Eastern Deserts*. Berlin; Heidelberg, 2013.





*Part I*

*The CeRDO expeditions  
(1989-2006)*



# 1. Explorations in Sudan's Eastern Nubian Desert, 1989 to 2006

*Alfredo and Angelo Castiglioni*

## Introduction

When we requested authorization from the National Corporation for Antiquities and Museums (NCAM) in Khartoum, Sudan, in the second half of the 1980s, to carry out research in Sudan's eastern Nubian Desert, the reply was, "What do you hope to find in the desert? It is an archaeological void." Yet, that was not true. Over about 25 years of travel, we discovered and documented a vanished world centred on gold: mines and vast settlements where this precious mineral was mined, processed, stockpiled and defended.

At least from the fourth millennium before Christ until the 13<sup>th</sup> century of our era, the desert mines were exploited first by the Egyptians of the Pharaonic period, and in succession by the Ptolemies, the Romans, the Byzantines and the Arabs. This exploitation has continued in times closer to us: during the British colonial period, and, unfortunately, even today, by a multitude of improvised miners who are "sifting" the desert with modern technical means (metal detectors, excavators, etc.) and often destroying archaeological finds that have lain hidden for thousands of years in the solitude of the desert. We documented routes spanning vast distances also in terms of time, travelled by Egyptian caravans marching to conquer Nubia, by pilgrims going to Mecca, by spice and gold merchants bringing these precious goods to the rich and mighty of each succeeding generation.

The Nubian Desert in Sudan is huge. In this immensity, the area explored by the Research Centre on the Eastern Desert (referred to in this volume by its Italian acronym CeRDO.) covers more than 90,000 square kilometres, about the size of Ireland. Before we started our research, knowledge of the past of the Nubian Desert was based on historical documents written mostly by medieval Arab travellers and over the last two centuries on records of European scholars, travellers and explorers, such as Linant de Bellefont, A. E. P. Weigall and G. W. Murray.

## The purpose

The aim of our research was to continue and extend these explorations, contributing with full documentation, including photographs, to raise awareness and keep alive the memory of a world that, just over these last years, is undergoing profound changes. We designated our first expeditions in the Sudan's Eastern Desert by means of letters: Expedition A, between January and March 1989; Expedition B, between February and March 1990; Expedition C, between December 1990 and February 1991; Expedition D, between January and February 1993; and Expedition E, between January and March 1994 (see Plate 1.1 and the summary catalogue with detailed site designations and brief descriptions in Castiglioni, Castiglioni and Vercoutter, *L'Eldorado dei Faraoni: alla scoperta di Berenice Pancrisia*, Novara, 1995, 177-186).

During these early expeditions, our research and interests

were focused on the area of 'Wawat', the Egyptian name for Lower Nubia. According to the texts from Pharaonic Egypt, the immense gold producing region between the 25° and 18° north parallels was divided into three major distinct areas. The northernmost produced the 'gold of Coptos', extracted from the mines of the Wadis Hammamat, Silsila and Abbad; the southernmost area provided the 'gold of Kush', extracted from the mines of Upper Nubia, the closest to the Nile, from Buhen to Kerma, south of the Third Cataract. But it was, above all, the area of Wawat (mines of the Wadis Allaqi and Gabgaba and their tributaries) that produced most of the gold that flowed into the coffers of the pharaohs during their millennia of history. For example, in the 41<sup>st</sup> year of the reign of the Eighteenth Dynasty pharaoh Thutmose III (1479-1425 BC), the region of Wawat supplied the pharaoh with 3144 *deben* and 3 *kedet* of fine gold, i.e. more than 286kg of precious metal, whereas the mines of the land of Kush had produced only about 18kg in the same period (Castiglioni *et al.* 1995, 18-19). It is this fabulous region that our investigations initially covered.

## The research

What factors and elements directed and guided our research? A frequent element comprised the traces of ancient caravans that by treading on rocky areas or compact crushed stone over the many centuries had left indelible marks of their passage on the ground. The pack animals travelled in a line, especially when moving through narrow passages between mountain chains. In these areas, the tracks are clearer: the hooves of generations of pack animals (donkeys first, and camels later) cut into the ground and marked the rocks. Once we had identified a route, we needed to locate the bivouacs of the caravans because the spot where men and animals spent the night was an important factor for us. It allowed us, in fact, to estimate the campsite of the next leg, bearing in mind that a caravan covered about 25 to 30km in a day, depending on the ground conditions, and that it proceeded where possible in a straight line to optimize both distance and time.

## In the desert with camels

We wanted to have this experience to assess whether our hypotheses were well founded. Hassan, an old camel driver of few words but who knew all the "secrets" of a desert journey, served as our guide.

From the expedition diary: 12 February 1990: "Since a few hours, we have been travelling on our teetering rides across an immense stony plain towards Jebel Maqran, a tiny outcrop that looms in the void and fades into nothingness. We realize that Hassan is following the trail of an old caravan route without losing sight of the jebel rising ephemerally before us. The track runs straight to our destination, which, like a lighthouse,

shows us the shortest path. When we climb over the low hills and the jebel disappears from our view, we know by the marks left by countless animals that travelled the same route that we are going in the right direction. When the track disappears, erased by a sudden sandstorm, Hassan rides on confidently into the emptiness of the desert using Jebel Maqran - now floating in the overheated air and seemingly farther and farther away - as reference point. "How many kilometres?" we ask Hassan, who slows down and looks at us with surprise. "You mean how many days or hours!" he exclaimed. And so we learn our first lesson of the desert: distances are calculated in time and not kilometres. At some point, we realize that our guide is no longer following the direct route that we had travelled until then. We question him with a look. He does not answer but the explanation comes after a few kilometres. A well stands before us and Hassan, still silent, draws water for his camels. Perfectly adapted to the desert climate, a camel can withstand a weight loss of up to 40% from dehydration and quickly restore its water balance by consuming an amount of water equal to half of its weight. A thirsty camel can drink 100 litres of water in a few minutes. Watering our animals takes little time and we continue on our way.

The second lesson of the desert comes at sunset, when Hassan stops to set up the night camp under the shelter of a sandstone slab that covers us like a roof. You do not travel at night in the desert and, usually, you stop at a place sheltered from the wind. The rock is engraved with graffiti of different periods. We see prehistoric signs, a barely visible hieroglyphic inscription erased by time and, scattered on the ground, pottery fragments. There is also Hassan's name, scratched on the rock when he camped there the first time - a timeless place and tradition. We calculate the day's travel: our camels covered about 27km in ten hours. It is a customary distance if the terrain is flat and unobstructed." It is the confirmation of distances we already know: the Darb el-Arba'in, a track of 1200km, can be covered in 40 days at 30km a day. The Muheila track, 160km long, takes instead only six days at a little more than 25km a day.

## Final considerations

Karim Sadr, the archaeologist who shared the efforts and emotions of our first five expeditions, wrote (Castiglioni *et al.* 1995, 147): "The Sudanese Nubian desert is huge. How much archaeological research will be necessary for an adequate reconstruction of the past of such a vast territory? Archaeologists believe that a representative sample of 20% of the sites can provide a sufficiently clear framework of an area's history. They also believe that there is an average of one archaeological site per square kilometre; therefore, knowledge of about 18,000 sites is needed before the Nubian Desert bares the secrets of its past to us. At the end of the fifth expedition (March 1994), about 200 sites had been located. Not many compared to the theoretical number of 18,000, but if one takes into account that the Nubian Desert was considered an archaeological void only a few years before the Castiglioni obtained their concession, the progress made is not negligible. Actually, with 200 out of 18,000 sites, it is little more than a glimpse at the history of this extraordinary desert, but no less important therefore". The research continued from March

1994 to April 2006, broadening knowledge of this immense desert significantly.

## The Nubian Desert in danger

### *In the past*

The surveys and excavations carried out by the CeRDO allowed for the recording of a large number of ancient mining villages, various kinds of tombs, forts and settlements for defence, rock carvings, and hieroglyphic inscriptions spanning a period of at least 7000 years. A single factor, however, clouds the perspectives and the archaeological potential of the Nubian Desert: the sacking of its sites and the incalculable damage this has caused. For example, among the hundreds of huge circular platform mounds that we found, only ten were still intact. In these cases the majority of the plundering is very old and probably dates back to the gold rush in medieval times, when Arab miners descending from the banks of the Nile swarmed over the Nubian Desert. The tombs were certainly the easiest source of gold. The arduous task of crushing and pulverizing the quartz to win the precious material was probably started once the tombs near the mines had been systematically plundered for their grave goods.

### *In the present*

The results of our first campaigns and the accompanying images had immediately preceded a new gold rush already back in the early 1990s. Unfortunately, our foreboding at the time became reality. It seems that this rush started in 2008, north of the city of Abu Hamed. The latest generation of metal detectors capable of identifying the type of buried material is the main tool of the illegal treasure hunters who start hacking away with picks and shovels only when the device has signalled the certain presence of nuggets. The stories (and photographs taken with mobile phones) of exceptional finds have fuelled the gold fever.

The news of a lucky gold seeker who arrived at Khartoum's market with some 60kg of the precious mineral was published by the Sudanese newspaper *al-Sabafab* in December 2010. In 2011, the Sudanese government estimated that there were more than 200,000 illegal gold seekers scattered across the Nubian Desert. The damage caused by these improvised "miners" to the fragile archaeological structures is difficult to quantify. The photos we took in Jebel en-Nigeim and the descriptions of the three correspondents, Massimo De Benetti, Marco Grassini and Paolo Nannini of the journal *Archeologia Viva*, who travelled through the Nubian Desert in early 2014 to document the damage caused by this frenetic and destructive gold rush, suffice to assess it.

From the journal *Archeologia Viva*, issue no. 163, January-February 2014:

"The desert is a bustle of activity with trucks carrying men, supplies and bags of precious mineral. Groups of gold seekers on old Bedford trucks are heading towards the deepest and unexplored areas. In their hands, the metal detectors point to the sky like flags. The gold seekers do not crush the stones; they follow the sand moved by bulldozers and tractors. It almost seems that there is not even a small patch of unspoiled desert left and our land rovers struggle to find a usable path...

Holes everywhere, on the hillsides, even on the hilltops. Not only gold, but also archaeological evidence has been dug up and taken who knows where. Confirmation comes in the afternoon, when among the remains of a necropolis we find numerous bronze fragments that had been discarded and thrown into the pits. We hope that the archaeological research on the past has limited the damage”.

Entire pages of history are torn out each day from the great book of Nubian archaeology. Areas where silence reigned supreme until a few years ago are now awash with the deafening noise of excavators and the gold seekers’ cries. The peace and immutability of the desert that had fascinated us during our first journeys are irretrievably lost.

The following account of our work is divided into six sections, each dealing (not necessarily in chronological order) with significant areas of exploration and the presentation of the more important discoveries: 2. Wadi Terfowi; 3. The gold mines of Kerma; 4. The Nubian Desert: The tracks of Egyptian penetration; 5. Traces of the past, first expedition; 6. Traces of the past, second expedition; 7. The Onib Crater (el-Hofra).

Appended here is a select bibliography of CeRDO reports. Other papers in this volume concentrate in depth on certain aspects of the work and on the material recovered and include detailed bibliographies.

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