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UNESCO Region: ARAB STATES

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**SITE NAME:** The Frankincense Trail

**DATE OF INSCRIPTION:** 2<sup>nd</sup> December 2000

**STATE PARTY:** OMAN

**CRITERIA:** C (iii)(iv)

**DECISION OF THE WORLD HERITAGE COMMITTEE:**

Criterion (iii): The group of archaeological sites in Oman represent the production and distribution of frankincense, one of the most important luxury items of trade in the Old World in antiquity.

Criterion (iv): The Oasis of Shisr and the entrepots of Khor Rori and Al-Balid are outstanding examples of medieval fortified settlements in the Persian Gulf region.

At the initiative of ICOMOS, and with the agreement of the State Party the name of the property was changed to The Frankincense Trail.

**BRIEF DESCRIPTIONS**

The frankincense trees of Wadi Dawkah and the remains of the caravan oasis of Shisr and the ports of Khor Rori and al-Balid vividly illustrate the trade in frankincense that flourished in this region for many centuries, as one of the most important trading activities of the ancient and medieval world.

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**1.b State, Province or Region:** Dhofar Province

**1.d Exact location:** 17° 24' N, 54° 4' E

# **The Sultanate of Oman**

**1999**

**Nomination file of the cultural ensemble**

**of**

**Shisr, Khor Rori, al-Balid**  
**archaeological sites**

**and the**

**Wadi Dawkha**  
**Frankincense park**

**in the Dhofar region**

**to**

**UNESCO World Heritage List**

## 1 . IDENTIFICATION OF THE PROPERTY

### 1.a . Country

**SULTANATE OF OMAN**

### 1.b.. Province

**DHOFAR**

### 1.c.Name of Property:

**The cultural landscape related to the frankincense production and trade** constituted by:

**1.c.i) The archaeological site of Shisr**

**1.c.ii) The archaeological site and natural environment of Khor Rori**

**1.c.iii) The archaeological site of al-Balid**

**1.c.iv) The frankincense park of Wadi Dawkah**

### 1.d. Coordinates:

**i) The archaeological site of Shisr:** 18° 15' 4"N; 53°38'7"E

**ii) The archaeological site and natural environment of Khor Rori:** 17°2'N'30"; 55°26'E

**iii) The archaeological site of al-Balid:** 17° 1' N; 54°03' E

**iv) The frankincense park of Wadi Dawkah** comprised between 17°20'-17°23' N and 54°03' -54°05' E

### 1.e. Maps and plans showing boundary of area proposed for inscription and of any buffer zone

#### 1.e.i) Map of Shisr area 1: 5000 (original scale)

and joined also

Map of the Sultanate

Map of the Shisr region

1:100 000

Archaeological plan of Shisr

Archaeological plan of Shisr

(South-west Missouri State University)

Archaeological plan of Shisr

1:250

(original scale)

Three -dimensional view of Shisr

(the Aachen Urban History Department)

#### 1.e.ii) Map of Khor Rori area 1:5 000 (original scale)

and joined also

Map of the Salalah region

1:100 000

Archaeological map of  
Khor Rori aerea 1: 25 000  
( Pisa University Archaeological  
Department)  
Topographic survey of khor Rori  
( Pisa University Archaeological  
Department)  
Archaeological plan of Khor Rori 1: 400  
(Pisa University Archaeological Department)

**1.e.iii) Map of al-Balid area 1:5 000 (original scale)**

and joined also

Map of the Salalah region 1:100 000  
Archaeological plan of al-Balid 1:500  
Topographic survey : West-East profile 1:500  
Topographic survey of the citadel 1:500  
Topographic survey of the great mosque  
Plan of the great mosque  
Map of the archaeological park  
( Aachen Urban History Department)

**1.e.iv) Map of the frankincense park of Wadi Dawkah 1:10 000 (original scale)**

and joined also

Map of the Salalah region 1:100 000

**1.f Area of property proposed for inscryption (ha) and proposed buffer zone (ha)**

**1.f.i)** The archaeological site of Shisr: 0.36 ha  
Buffer zone 1.763 400 km<sup>2</sup>

**1.f.ii)** The archaeological site and natural environment of Khor Rori: 3.128 ha  
Buffer zone: 10.187 713 km<sup>2</sup>

**1.f.iii)** The archaeological site of al-Balid: 50 ha  
Buffer zone: 48.2 ha

**1.f.iv)** The frankincense park of Wadi Dawkah: 7.964 km<sup>2</sup>

Boundaries of the properties and of the relevant buffer zones as indicated on maps

## 2 JUSTIFICATION FOR INSCRIPTION

### 2.a. Statement of significance

**The archaeological sites of Shisr Khor Rori/Sumhuram and al-Balid, in conjunction with the Frankincense park of Wadi Dawkah, constitute outstanding witnesses to the civilisation that from the Neolithic Period to the late Islamic Period flourished in southern Arabia and established economic, social and cultural links, spanning from the Mediterranean and the Red Sea regions to Mesopotamia, India and China, through the development of frankincense trade network**

While **Shisr** played a major role already **in the Iron Age** as an important outpost providing traders with water before entering the desert of the Rub al-Khali, the foundation of the fortified port of **Khor Rori/Sumhuram** by LL'ad Yalut, king of Hadhramawt, took place at the end of **the first century B.C.** in the context of growing sea trade between the Red Sea and the Indian Ocean.

After the decline of Khor Rori during the first half of the third century A.D., the site of **al-Balid** can be considered as the port that took over the role of the sea trade up to **Early, Middle and Late Islamic Periods.**

In the region of Dhofar the natural setting of Wadi Andoor, Wadi Hogar and Wadi Dawkah represents the most significant area where frankincense trees grow.

**The Wadi Dawkah park** has been chosen for nomination as a natural/cultural site, representative of the harvesting of the incense gum since most ancient times, still intact in its natural landscape.

According to Prof. Zarins's report on his «Archaeological work in the Sultanate of Oman (1990-1995, southwest Missouri State University), scheduled for imminent publication, early human populations arrived in Dhofar some one million years ago, represented by Homo Erectus. They journeyed eastward from east Africa where abundant early hominid remains are known from northern Ethiopia, Kenya and Tanzania. Their record of crossing is preserved in archaeological sites, found primarily in Yemen and western Saudi Arabia.

Recent studies point toward the arrival of Modern man, Homo Sapiens Sapiens, in Dhofar sometimes around 100 000 years ago as indicated by finds from sites in the Nejd and especially around the Shisr area.

Archaeological sites in east Africa suggest that populations arrived to Dhofar from the west.

From approximately 20 000 until 8 000 years ago, an extremely arid phase occurred in southern Arabia which resulted in the abandonment of most of the peninsula.

At 6 000 B.C. pastoral nomads arrived in southern Arabia as represented by the Neolithic Period. These Semitic speakers came from northern Arabia (today's Levant) and gradually occupied most of the Peninsula. Herding cattle as well sheep and goats, they are found through the Nejd on ancient river courses and lakes. Their sites are primarily known from the presence of distinctive flint tools, especially spear points and arrow-heads. They are the people who established the ancient trade routes between distant countries.

Frankincense was first traded from Dhofar by them in response to southern Mesopotamian demand. By 3 200 B.C. and the introduction of writing, products from Dhofar increased in

volume and frequency. Specific ethnic identity is unknown, but the distinctive flint "tri-hedral" rods mark for the first time a distinctive flint industry linked solely to Dhofar.

Maritime trade to and from Dhofar also began in this period linking the Gulf, the Red Sea, and the Indian Ocean.

The Bronze Age in Dhofar (2 200 -1 300 B.C.) was a time of retrenchment. People retreated to the edge of the hills and the Salalah plain near permanent springs. Material culture in Dhofar was defined by the presence of copper/bronze, and close ties are seen with the Bronze Age villages of Yemen. Camel domestication began at this time. Maritime trade linked Masirah to Dhofar most likely in copper production. The palaeo-lagoons and upland terrace areas were exploited intensively for the first time. Frankincense continued to be traded widely

Iron Age A (1 300-300 B.C.). saw the emergence of local populations again herding cattle, goats, and now camels as well as growing plants specific in Dhofar such as sorghum and the millets in a lifestyle similar to the modern Mahra peoples.

The rise of the south Arabic states created a formal trade network for incense reaching to the west and a continued demand both to north Oman and east Arabia.

By 300 B.C., the site of Shisr became part of the well known incense trade network. The Periplus of Ptolemy's map provide a clearer picture of the region and its peoples. The excavations at Shisr and the Salalah plain show that both the Hadrami state Shabwa (Khor Rori/Sumhuram) and the indigenous people participated in the incense trade. The Omani Arabs, migrating northeastward from Yemen, enter the picture at this time as part of the complex interaction in social relations and economic life. The Parthian Persians also influence Dhofar as evidenced by material remains at Shisr and the Salalah coast. Combining the historical and archaeological evidence it has been suggested that Shisr could be either Ubar or the Omanum Emporium of Ptolemy, while Khor Rori has been associated with Moscha limen of the Periplus Maris Aethiatici.

During the Islamic Period, interior trade continued to prosper perhaps fueled by the demand of incense and horses. Links to India, developed millennia earlier, continued to be strong. Coastal Dhofar participated in long distance international trade especially in the Abbasid Period. Both fortified inlets and harbours and small settlement testify to these ties linking the Red Sea and the east Africa to the west and India and China to the east. Al-Balid and Mirbat continued to prosper reaching their peak of prosperity in the Middle Islamic Period. By 1450 A.D. the Turkish and Portuguese invasions bring to a standstill the network organised during Iron Age and Islamic times

## **2.b. Possible comparative analysis**

This is the most significant area combined with archaeological sites still existing in southern Arabia, witnessing the tradition of frankincense production and trading networks,

## **2.c. Authenticity/integrity**

While the natural habitat of the frankincense park of Wadi Dawkah is fully intact, the archaeological sites are in different conditions of excavation/conservation.

Excavations at small scale have been carried out in Khor Rori since 1950, and presently the University of Pisa, Italy is implementing archaeological surveys and excavation/conservation.

In al-Balid presently the Aachen University, Germany is executing a detailed excavation/conservation programme.

In Shisr excavations were carried out by the Southwest Missouri State University, US.

Recently a conservation programme was executed:

The conservation programmes are in accordance with UNESCO/ICOMOS guidelines.

**The site of Shisr** is flanked by a contemporary village, the architecture of which is inspired by the Islamic architectural patterns, and by some agricultural and cattle areas. The proposed buffer zone aims to preserve the existing archaeological remains and the natural features of the surrounding landscape.

**The site of al-Balid** is surrounded by a low density urban settlement and mostly by agricultural areas. The buffer zone proposed for inscription aims to preserve the existing natural features of the surroundings

The physical integrity of the natural environment of **Khor Rori**, and of the **frankincense park of Wadi Dawkah** is assured by their location in non-inhabited areas, with no ongoing activities. The buffer zones proposed for inscription aim to preserve the existing natural features and archaeological remains of their surrounding landscape

## 2.d. Criteria

The sites of **Khor Rori, al-Balid, Shisr and the frankincense park of Wadi Dawkah** are **nominated as a whole cultural landscape** by virtue of the criterion:

ii ) cultural sites and landscape in which, from the Neolithic Period to the Middle Islamic Period, the trade of frankincense took place, northward through the desert routes and eastward and westward through the maritime routes going to India and China and east Africa.

This cultural ensemble:

**a)**

iii) bears a unique testimony to a cultural tradition which has disappeared;

iv) is an outstanding example of archaeological sites and landscape which illustrate significant stages in human history;

v) is an outstanding example of a traditional human settlement and land-use representative of southern Arabian culture over the span of 9 500 years;

**b)** meets the test of authenticity in material, workmanship and setting, and of authenticity of its cultural landscape, distinctive characters and components.

## 3. DESCRIPTION

### 3.1 SHISR

#### 3.1.a. Architectural description

The whole site, about 180 km north of Salalah in the desert, is located on a geological fold which runs just across the cave on top of which the archaeological structures lie.

The archaeological remains of Shisr occur in the vicinity of a large collapsed limestone dome. The inner part of them are positioned on the top of the rock covering the cave from which the water springs. Prof. Zarins who excavated the site with his team in 1990-1995, expresses the opinion that the collapse of part of the dome may have been caused either by the action of the water eating away the limestone, or by an earthquake.

Minor fault lines in the area have been reported by geologists. Similar collapses are seen just northwest of Shisr, as well as large crack lines running through several collapsed valleys just north of the main Shisr site.

In either case, the fracture has created a spring, releasing water from the underlying aquifers. The spring was exposed for a long time, and attracted early human habitation perhaps for more than seven millennia.

A fortress wall, consistently measuring 90 cm. width built in limestone blocks and poor earth/lime mortar, surrounds a central complex standing on the rocky outcrop.

The depression area north of the wall suggests that the stones were quarried from the local limestone formation.

As can be seen on the plan the wall is periodically braced by small cross walls, also 90 cm wide and in complete cases 1.10 m long.

In the middle of the north wall a large horse shoe shaped tower, probably inserted into the wall at some date after the initial construction, has a central pilaster for supporting upper disappeared structures.

On the east corner of the north rampart a rounded tower represents an integral part of the structure.

The eastern wall, presenting similar dimensions and interior partitions, is interrupted in the middle by a square tower. The second part of the eastern wall, continuing down the hill slope, is broken by a 7 m. gap. At the southeast corner, there is little evidence remaining due to modern building, but a corner tower can be postulated.

The southern wall has no breaks and is again 90 cm wide. The south-west tower, circular in shape, and again appended, is integral with the wall and very similar to the north-east tower.

Approximately 10 m from the tower the west wall is broken by the limestone collapse, plunging here 6 m. to the bottom of the sandy fill. After a gap of 17 m the wall is seen again, perched on a promontory some 18 m above the sandy collapse. Excavation carried out during Zarins's mission, immediately below the gate fall, revealed stone fragments of the gate buried 2.5 m below the current sandy base. Just north of the gate is located the best preserved portion of the western wall. Another small horse-shoe shaped tower cuts into the wall north of the gate and has been re-shaped internally by subsequent occupation.

A much smaller tower placed at 1 m further along the northern wall is slightly irregular and rounded.

A large internal wall runs south from this small tower.

This defines the site as being divided originally into two walled areas: an inner portion and a later enlarged addition. Little remains of this main interior wall: It was of standard size and had usual smaller partitions.

The large central structure dominating the »inner portion« consists of several rooms and partitions. It is oriented on the cardinal points of the compass and probably reflects a south Arabic tradition.



Later rebuilding modified the walls and added plaster basins and other rooms, some of which were rebuilt in mud-brick. At some point in the medieval period, the structure's interior was bricked shut and a platform was built which can now be seen to be an observation post or fortified tower.

Today the site is flanked southward by a palm tree oasis watered by the local spring. northward of the site the government has built lodgings in order to house local nomads

The archaeological structures are protected by a fence. Access for visitors is allowed under the watch of a guard. In a small traditional building, inside the fenced area, archaeological findings are displayed.

As already mentioned, the area surrounding Shisr is an enormous archaeological field scattered by countless relics dating back to the Neolithic Period.

The extension of the site nominated for inscription corresponds to the fenced area. A buffer zone around this area and including the most important surrounding Neolithic sites is foreseen.

The water supply is a part of the problem of the site conservation. Continued use over long period has depleted the resource and degraded the rock. Countering of this process is part of the action plan that the Omani authorities are establishing in order to preserve the site and develop its cultural tourism potential. Geological studies are going on in order to consolidate the rock, under the supervision of the Archaeological Advisory Board.

### **3.1.b. History**

The site of Shisr has been associated with the famous Wobar of the Thousand and One Arabian Nights, and according to e.g. Prof. Michael MacDobnald (Oxford University) is also mentioned in the Holy Qoran.

It has always been and still is a important outpost in the desert. In former days it played a major role in the trade route because of its large supplying of water for the caravans before entering the Rub al-Khali desert.

Surveys carried out by Zarins located in its surrounding area approximately sixteen sites of the Neolithic Period, defined by the presence of fire-cracked rock, fireplace material, shell, fragmented bone, and lithic inventories as reported earlier by J.Pullar.

According to Zarins, Shisr is clearly an agricultural oasis dominated by a fortress of the Iron Age B Period. (2<sup>nd</sup> century B.C.). The excavation revealed, particularly in the northwest and south-west areas, the re-use of the site after the Iron Age B (IAB) Period, that could be dated to the Early and Middle Islamic Periods. Along the southern wall occupation continued into the Islamic Period. Finally the main building which was rebuilt and filled in by mud-bricks was apparently attacked in the Islamic Period.

One of the most outstanding finds from the Islamic Period is a chess set. The recovered chess pieces in wood are dated to the 11<sup>th</sup> century A.D.

## **Bibliography**

- |                                |  |
|--------------------------------|--|
| MacDonald, M., 1993            | Wabar, in <i>Civilizations of the Ancient Near East</i> (London 1993) 1351                       |
| Yule, P. 1996                  | Die Archäologie des Sultanats Oman, in: Oman, G. Popp (ed.), <i>Oman</i> (Nürnberg 1996) 319-338 |
| Zarins, Juris, 1998 (in press) | Dhofar – Land of Incense,  |

## **3. 2. KHOR RORI**

### **Khor Rori/Smhrm »His name is great«**

#### **3.2.a. Architectonic description**

The archaeological site, 40 km east of Salalah following the coastal road, is located on a hill-top on the eastern bank of the sweet water outlet "khor" which deeply penetrates the coast. The whole area contains many archaeological remains. It has been surveyed by the Italian mission of the Archaeological Department of Pisa in 1996, under the direction of Prof. Alessandra Avanzini (See annexed plans and report).

According to Roberto Orazi's report (University of Pisa, 1997), it is extremely likely that the contours of the spur had a direct influence not only on the alignment and offsets of the walls, but also on the urban layout.

The remains of the fortress stand on a rocky spur running east-west on the eastern bank of the khor. The relics belong to a defensive structure, which was part of a wider system as the wall structures standing on the east outcrop on the sea testify. All the wall structures are composed of an outer and inner face built in roughly hewn limestone blocks, with rubble filling in the middle (sandwich system). The walled settlement roughly appears as a rectangle of 130 x 70 m.

Along the north side, a flat area faces the entrance which, the most heavily fortified part. Here both the inner and outer wall layers merge from the ground in short stretches, and they are clearly visible only in the vicinity of the gate.

A small square construction along the wall west of the entrance has been identified by the Wendell Phillips's excavations as a temple dedicated to Sin. This interpretation is under discussion up to date. Along the south side, which is the most rugged and where the land forms a natural defensive slope, the outer face of the fortress wall is hidden beneath rubble and the invading vegetation.

Inside the south-eastern corner of the fortress, long parallel rooms abutting against the wall can be considered as storerooms. On the west side, particularly steep, the outer face of the wall disappears under the rubble from its upper part. The inner face is intact and clearly visible, rising to a height of up to two metres in the south-eastern corner. The average thickness of the outer wall is 2.5 m and several internal recesses are present.

The most significant structure of the complex is the fortress gateway. Three successive gates open along the steep entrance path at a short distance, in order to reduce any possibility of knocking down the gate doors.

Parallelepiped tower ruins , with a pavement level coinciding with the one of the outside flat area, flank the area of the entire access itinerary, which changes direction several times. Two ramparts flank the middle gate.

A series of inscriptions carved in southern Arabian characters and found on blocks of masonry should be removed for their safety, and replaced by copies.

In some of them the ancient name of Smhrm »Sumhura« can be read as well as the name of the king from Hadhramawt during whose reign the site was founded.

Relics of the "temple" structure are extant in the area adjoining the north side of the defensive wall. The shape of this structure seems to have been rectangular with the west and east sides longer and a single entrance on the east. At the centre of this space the 26;5 m. deep well opens (Albright 1982:20), the walls of which are completely lined with smoothly squared stone blocks. A basin, made out of a single monolith, lays between the well and the west wall. A rectangular block of masonry existing between the well and the north wall has been identified as platform area where worship was performed.

The site is protected by a fence and a guard post. It can be entered with an authorisation of the Ministry of National Heritage and Culture.

As already mentioned, the area surrounding the khor has been recognised by previous archaeological campaigns as intensively scattered with archaeological structures attributable to settlements of the Neolithic Period.

An archaeological map established by the University of Pisa mission shows the density of those remains in the area.

As the closest trade point to the Dhofar production area, from the third millennium B.C. up to the third century A.D. Khor Rori bears an exceptional testimony to a civilisation which has disappeared, incense trade being considered as highly significant in the ancient world, both from the economical point of view and the cultural one, being associated with religious worship rituals and medical treatment.

Considering the importance of this exceptional ancient settlement and the enchantment of its historical and environmental landscape, consisting of the seacoast, the lagoon, the surroundings hills and the waterfalls watering the inlet during monsoon season, the Omani authorities consider as a priority the establishment of a comprehensive conservation and restoration project of both the archaeological and natural features of the whole site of Sumhura/Khor Rori. In doing so they intend to assure the possibility for the cultural and environmental ensemble to be explored by researchers and appreciated by visitors, testifying forever to the ancient history of the Sultanate of Oman.

An agreement has been recently signed with the Archaeological Department of the Pisa University in order to carry out further archaeological surveys and implement simultaneously the necessary restoration work.

There is no ongoing building development in the area, the flora and fauna of which is still intact . 2 km eastward of the lagoon quarrying is active. Any such exploitation will be forbidden in the limits of the nominated buffer zone

### 3.2.b. History

According to Prof. Zarins's report, the foundation of the port of Sumhuram in the country of incense, by t LL'ad Yalut king of Shabwa in the Hadhramawt, took place in the context of growing sea trade between the Red Sea and the Indian Ocean at the end of the first century B.C.

The texts of the inscriptions mentioned inform us that the city was a foundation of of 'LL'ad Yalut king of the city of Shabwa in the Hadhramawt, to control the trade of Dhofari incense which, according to classical sources, was transported by sea to Qana and from there by land to Shabwa, through the Wadi Hagr.

Other Inscriptions identify the site as SMHRM (Jamme in Albright, 1982; Pirenne 1975, Beeston 1976). Additional inscriptional material tell us that Abiyatha Sahlan, son of Dhamaril, the commander of the Hadramiteqys' in the land they called Sakalan, may have been charged with establishing the settlement on the Dhofar coast and minting coins (see Jamme in Albright, 1982; Sedov and Ayduş 1995:44-45)).

According to Prof. Zarins, Khor Rori can almost certainly be identified as the port of Moscha which is mentioned in two Greek texts from the 1<sup>st</sup> and 2<sup>nd</sup> centuries A.D., respectively The Periplus of Erythraean Sea and Ptolemy's Geographia.

Moscha was an important port on the trade route between India and the Mediterranean: the Periplus reminds that Indian sailors used to spend the winter waiting for the favourable monsoon season and that they traded cotton cloth, corn and oil for incense.

The American excavations, in the fifties, produced a fine bronze statue of a dancing goddess, imported from India.

Between the 1<sup>st</sup> and 2<sup>nd</sup> centuries A.D. the site was the hub of the settlement system on the coast of Khor Rori. There is no doubt that the powerful state of Shabwa mastered the frankincense trade during the main period of the south Arabic civilisation. With its close links with Shabwa, the capital of Hadhramawt, the city was very rich. It probably also minted money. Khor Rori is certainly among all the sites known, the most representative port close to the production region. The incense was gathered in the region of the Nejd, stored to Handon and Andoor, and then transported either to the port of Sumhuram to be shipped overseas, either to be transported by caravans through Shisr to Marah and Hadhramawt.

The Sumhuram of the flourishing phase consisted of a small, walled, strongly fortified settlement about 1ha in area with a tripartite city gate well provided with outer towers, a probable temple dedicated to Sin, the major god of Hadhramawt, two storey private dwellings and a large storehouse. The fortress was the centre of a settlement area comprising two small villages, several isolated premises, and a small cemetery.

According to the anonymous author of the Periplus, notwithstanding the highly precious incense was traded there, the port was not protected by the king's guards, yet theft was not existent. If anyone attempted to conceal even a grain of incense on a ship, the god who protected the city would prevent him from sailing.

According to the excavators, frankincense nuggets have been found.

A series of radiocarbon dates based on the tests carried out at Sumhuram by the Italian mission indicates that in the first half of the 3<sup>rd</sup> century A.D. the process of disintegration began, which ultimately lead to the abandonment of the incense port and of the classic age settlement system linking the incense producing region to the long-distance trade routes between the Mediterranean, the Red Sea and the Indian Ocean. These figures agree with those from the caravan site of Shisr, whose decline at this period apparently began between 100 and 300 A.D.

The palaeo-environmental analyses carried out by the Italian mission show that the sea entered the khor in this period, during which thick mangrove vegetation, nowadays disappeared, was growing, as documented. Since, the natural ecological condition of the khor area is of outstanding integrity and beauty.

## Bibliography

- Albright, F.P. 1953      The Himyaritic Temple at Khor Rori (Dhofar) Oman. *Orientalia* XXII (3):284-7
- Avanzini, A.              La missione Italiana nel Dhofar (1997). *Egitto e Vicino Oriente* XIX
- Beeston, A. 1976        The Settlement at Khor Rori. *Journal of Oman Studies* 2:39-42
- Cleveland, R.L. 1960    The 1960 American archaeological expedition to Dhofar. *Bulletin of the American Schools of Oriental Research* 159:14-26
- Comfort, 1960            Some imported pottery at Khor Rori (Dhofar). *Bulletin of the American Schools of Oriental Research* 160:15-20
- York, P./Kervran, M.    Iron Age pottery from Suhar and Khor Rori. *Arabian Archaeology and Epigraphy* 4:131-168.
- Orazi, R. 1997            Project to restore the monumental complex of Khor Rori. M.I.D.- C.N.R.
- Pirenne, J. 1975        The Incense Port of Moscha (Khor Rori) in Dhofar. *Journal of Oman Studies* 1:81-96

## 3.3. Al-Balid

### 3.3.a. Architectural description

Al-Balid is historically one of the largest sites in South Arabia with an elaborate architecture of the Middle Islamic Period. The main features are known to us from travellers to the site over the years and from the results of archaeological investigations. Observations about the town itself made by well-known visitors (for example, Ibn Batutta 733/1332) were compiled by Arabic authors such as Yaqut in his monumental geography. Ibn Batutta's mention of many mosques confirms what is known from present-day remains. These, he writes, have lavatories for bathing. He mentions a palace inside the city which is called the castle (*al-qasr*), a large and extensive building, and the „cathedral mosque« beside it. The city is surrounded by rich groves of banana, coconut, and betel trees. Millet, barley and rice were grown or imported.

The Great Mosque of al-Balid has been the subject of research and study by scholars for nearly 150 years. The first description stemmed from the pen of the surgeon of the Brig Palinurus, H.J. Carter (Carter 1846: 225-237). Having visited the site in the mid 1840's, he described it and its rich but robbed condition in his report. Already at that time many of the pillars had been removed and taken to al-Dahariz and al-Robat. From the south side of the Great Mosque he discovered a broken stone block fourteen feet in length which bore an Arabic *inscription* („*bismillah ir hman ir...allah*«). Carter reports six ruined cities (p. 237). The Shaikh from „Tâgha« (Taqqah) recounted that these and al-Balid were built by a local family called Min Gooee in 555/1177 (p. 234). Carter's brief mention of the neighbouring Khor Rori is the first one known (p. 233). Recognisable in his sketch is the Great Mosque which he refers to as a temple or mosque (p. 230). He also sketched a „house« facing *qibla* which may well be a small mosque (Carter 1846: sheet 1). He describes the fortifications of al-Balid as unfinished which may well

be true.

Three main archaeological investigations have taken place at al-Balid. Other smaller surveys complement these. The American Foundation for the Study of Man employed F.P. Albright who concentrated his efforts on al-Balid's citadel, the fortifications, and the eastern gate. P.M. Costa, representing the Ministry of National Heritage and Culture excavated from 1977 to 1979. He also fenced in the site. In 1995 a team from Aachen University took up a programme of restoration, investigation, and documentation.

In 1995 after the completion of a UNESCO expertise, al-Balid was selected by the government of the Sultanate of Oman to be developed into an archaeological park. This work was entrusted to Prof. Michael Jansen from Aachen University RWTH, Germany. The programme foresees excavation, conservation, landscaping, and the development of a didactic programme. Up to the present the Great Mosque has been fully excavated and conserved within this programme. Sultan Qaboos University partly excavated the «graveyard» mosque. The city wall to the north of the site could be identified and partly excavated for more than 40 m and the northern retaining wall of the citadel was identified. To allow proper access to the site, an entrance area was identified and a new access path, laid out on geotextiles for more than 2 km with a source of water and electricity was built. The park is intended to be inaugurated at the close of 1999.

## Description of architectural features

### 3.3.a.1. The site in general

Al-Balid is extending immediately along the coast on an elevation with a natural *khôr* charged with sweet water from the mountains. The attractiveness of the area for the setting is proved by other nearby historic settlements including al-Robat and the city of Salalah.

But al-Balid is the only settlement which functioned as a harbour in having been connected with its *khôr* with the sea. Still unclear is the way of how the sweet water *khôr* was connected with the salty sea. Topographic studies clearly indicate that the settlement was surrounded by water. Similar settlement patterns can be studied in Suhar and Julfar, Ras al-Khaimah. Measuring approximately 1600 x 400 m, al-Balid covers an area of 64 ha, not including the western estuaries beyond the moat where several ruined buildings and a large graveyard can be identified.

Today the ruined city is a barren landscape of soft small hills covered by numerous small stones blocks, filling stones of former walls from which the large limestones have been taken away through the centuries of robbing. The highest hills rise to the west with the prominent feature of the former citadel measuring 60 x 60 m and rising to a height of more than 20 m. To the south of it stands the Great Mosque which has been fully excavated and restored during the past years. North to the citadel the former city wall foundations were traced which can be followed eastwards for hundreds of yards.

### 3.3.a.2. The Great Mosque

The original layout of the qibla-oriented Great Mosque shows a clear orthogonal structure of 40 m width and 48.5 m length surrounded by an outer platform on three sides except the eastern one where the ablution area lies. The visitors to the mosque normally entered from eastern ablution area where a total

of three entrances can be identified. While the central entrance is precisely in the middle, facing the mihrab, the other two entrances are placed symmetrically to this central axis to the left and the right with an equal distance of 9 m each. This corresponds to the inner raster system of 12 by 13 columns at an equal distance of 3 m. Placing the eastern entrances between the 3rd and 4th, 6th and 7th, and 9th row counting from south to north. While the central entrance corresponds to the mihrab in the western wall, the southern and northern entrances correspond to entrances in the west, a phenomenon which has to be dealt with separately. In the eastern ablution area a squarish well (c. 1 x 1 m) was found which in earlier days fed the different ablution chambers.

Inside the mosque there was an inner courtyard which displaces an area of 15 m north-south and 12 m east-west. A common feature in the region are additional openings (entrances) in the southern and northern wall (at least three on each side) which primarily served cross ventilation for the cool sea breeze. A rare appearance are six entrances in the qibla wall allowing access from the west by staircases. The minaret was a squarish tower approximately 4 x 4 m in the north-east corner.

While the stone pillars which support the substructure wall of the roof were built in octagonal form by limestone slabs, especially around the courtyard round monoliths were used. The pillars stood to an average of c. 2 m on which a squarish cushion block was resting. The upper part of the construction is unclear and may have consisted of either an arcade or a colonnade wall running north-south and supporting the roof. What so ever this form may have been, the inner space with its 144 columns, the high roof, and the light new courtyard must have been quite impressive.

In later times the mosque underwent tremendous changes. Most probably due to the weakness of the construction, the north-east part close to the minaret collapsed and most of the mosque was closed. A partition wall was built between the columns of the third row counting from the west, leaving a passage between the 9th and 10th rows (from south) open which connected the ablution area still in use with the remaining prayer room of only three rows of columns. The minaret was shifted from the north-east corner to the corner at the 3rd row of columns. All of the side doors were blocked up and separation walls were constructed along the passage.

The ablution area of the Great Mosque, to the east of the building, measures some 25 x 50 m. They served over a long period but the extant four-chambered block belongs to the late period of the mosque, by virtue of the building constructions. In the case of a nearby excavated funerary mosque and the Great Mosque, the washing facilities cater to a smaller number of people and are built using inferior materials and techniques.

The final end of the mosque may have coincided with the abandonment of the settlement in the 16th century. 14C assays are expected to clarify the dates.

### 3.3.a.3. The Citadel

The citadel mound of al-Balid is located in the north-west corner of site. To its south lies the small flat area believed to represent the *maydan* (largest public square of the city) whilst south-east of the mound lies the Great Mosque. The badly plundered mound itself is a steep sided hill, roughly square in plan and covers an area of 4900 square meters. It stands just over 13m high and is covered by blackened rubble. In the north centre part of the mound is a significant depression which probably represents an open court surrounded by ranges of rooms on the east, west and south sides. The northern side is buttressed by semicircular bastions which are necessary owing to sandwich method of wall construction used. This kind of construction is typical of the site but for a single exception:

Positioned in the centre of the settlement, the area B fortification has a different orientation and deeper elevation than the majority of the buildings. Its materials and technique are superior to those in other parts of the site.

The entire surface of the mound is pock marked by depressions which represent rooms on the east side and on the south and west sides are the remains of trenches dug by Sultan Said bin Taimur and later by F.P. Albright (Albright 1982: 59). The current excavations elucidate the north and north-east walls.

#### City wall

Three soundings, planned for March of 1998, were intended to shed light on the Pre-Islamic use of the site, particularly the city wall. Sounding 1 was placed some 40 m to the north-north-west of the citadel and 30 m south of the *khôr*, a steady and reliable source of sweet water. It lay just west of Albright's trench B (Albright 1982: 62, pl. 14 fig. 21). Albright reports a corner of the city wall with its tower there. This year a second trench was to be placed toward the centre of the settlement of the site. A third trench was proposed for the east end of the site where Pre-Islamic coins are said to have been found. Sounding 1 shed light on one of the city walls to the north-west. The city wall is best known on the north side of the settlement. It has light foundations and in some places none. Noteworthy about new excavation is the observation of the stone city wall, which shows two main phases of construction. Following its original construction, a new wall was erected next to it on the north face. This wall seems to have enclosed the centre of the town from the western part of the city. Whether the wall was finished remains to be seen.

The eastern town gate (Costa 1979: 132 fig. 24) already mentioned by F.P. Albright is a complex of monumental construction. P. Costa notes the remains of gates in the middle of the southern side of the wall (c. 980E; 140N), a simple gateway not far from the sea side of the western *khôr* (c. 490 E; 60 N), and an eastern gate, partly excavated by F. Albright.

Area A, with its pillared bridge, lies in the *maydan*, which is located 100 m west of the Great Mosque. Costa's investigation of Area A, west of the Great Mosque was intended to establish if a moat existed here and if it was natural or artificial. A second question is whether the moat was connected to the sea. Finally, the question remained regarding the function of the building to which the stone columns belonged (Costa 1979: 139 fig. 32).

### 3.3.b. History

Measuring some 1600 x 400 m, al-Balid is an important urban centre larger than, for example, Taizz, the medieval Rasulid capital in Yemen with which it is largely contemporary (Smith 1988: 26). Al-Balid is a historically late name for a place in the Mahra area transcribed with Latin letters as „Dhofar« (Dhofar, Zafar, Zaf\_r, etc.). This place lent its name to the surrounding area. In a classic study, Tkatsch discussed the different places named „Zaf\_r« in an historical context (Tkatsch 1934: 1283-1289). That Dhofar corresponds with the later al-Balid is amply documented, despite unclear sources and whatever confusion certain early researchers express in this matter. The other important Dhofar lies in present-day Yemen 130 km south of the capital and has no clear historic connection with its namesake in the South Province. But the assumed one also inspired the excavations in the South Province conducted by the American Foundation for the Study of Man in 1952, under the direction of W. Phillips.



With one of the finest and most reliable sources of sweet water in the entire region, al-Balid must have been attractive for settlement during the quaternary age. This same situation holds for the Batinah coast which is and certainly was Oman's most populated area. Up to now, the Iron Age settlement of al-Balid is known to us from stray finds, mostly pottery and a few lithics. Prior to the Iron Age little information is available.

The earliest known mention in this coastal area occurs with coordinates in the atlas of Claudius Ptolemaios (VI. 7, 11) of the 2<sup>nd</sup> century AD, although the settlement itself is not identifiable. Since Ptolemaios does not mention it, the name may not yet have existed here (Tkatsch 1934: 1286). The locations of antique place-names recorded in the *Periplus Maris Erythraei* and in Ptolemaios's atlas were intensely discussed by the historical geographers of the later 19<sup>th</sup> century (Sprenger 1875: 92-97) looking for „Sabaeans« and „Himyarites«. One reason for the confusion is that Raysut und Mirbat have harbours but for al-Balid, with its prominent archaeological remains, this is disputed (see below).

The history of the town is marked by three attacks. According to Ibn Khaldun, in 619/1222 Ahmed b. Muhammad al-Habudi destroyed Dhofar. Thereafter a few kilometres to the north the successor al-Ahmadiyah was built (Smith 1988: 28). But other versions recount (Ibn al-Mujawir) that a certain Ahmad b. Abdullah b. Mazru al-Habudi destroyed Dhofar, fearing its capture by the Ayyubid ruler in the Yemen (Smith 1988: 28). Ahmad built a new town called al-Mansurah, also called al-Qahirah, but which Ibn al-Mujawir tells us continued to be called Dhofar. The already existing town was still called by its old name which eventually fell out of fashion. In 664/1265 The Persian emir of Hormuz, Mahmud b. Ahmed al-Kusi, attacked and plundered the coastal town. A few years thereafter in 678/1278, the troops of the second Rasulid king, al-Malik al-Muzaffar, worsted those of Salim b. Idris, ruler of Dhofar. Dhofar surrendered and was ruled independently or semi-independently by a branch of the family. When the famous Tunesian traveller Ibn Battuta arrived (733/1332), the city had again freed itself. Both he and Marco Polo in 1285 remark about the horse trade from this part of Shir. The town also minted its own coins (Smith 1993: 456).

As a result of revolt and disruptive invasions, the town lost its importance and the regional economy suffered. Prior to the 13<sup>th</sup> century AD signs of depopulation and decline are evident in the architecture, particularly that of the Great Mosque. By the late 15<sup>th</sup> century AD, the fate of the area was sealed by foreign sea powers, particularly the Portuguese, who changed the patterns of trade to their own advantage.

An early renowned writer, Ibn Khaldun, provides an early vocalisation of the name in his „Universal History« (Ibn Khaldun, \_ *Ibar*). Travelling from Africa, Ibn Battuta visited „Zafar \_ *I-Humud* which is at the extremity of al-Yaman« (Gibb 2: 382). He adds the suffix „*I-Humud*« in order to distinguish the Omani city from homonyms. He further describes the position by means of travel time to different surrounding places. „The city of Zafari«, he writes, „lies in an isolated desert region, in which there is not a village, and it has no dependencies. The bazar lay outside the city in a suburb called al-Hari/ga« (Gibb 2: 382) which seems to lay west of the town (Ibn al-Mujawir 265). Current local usage is not this exact with regard to where this place lies (oral information Ali Ahmed Mahash al-Shaheri 15.03.1999). Further interesting are two or three gates which Ibn al-Mujawar names (c. 619/1241): Bab al-Sahil, Bab Harqa, and Bab al-Harja (Costa 1979: 130). The second and third names are probably different spellings

of the same name.

The city lived from sea trade (Gibb 2: 198). „It is their custom when a vessel arrives from India or elsewhere, the sultan’s slaves go down to the shore, and come out to the ship in a *sumbug*, carrying with them a complete set of robes for the owner of the vessel or his agent...» (Gibb 2: 198). This sheds light on the possible presence of a harbour at the town. Already in the 19<sup>th</sup> century E. Glaser acclaimed the sweet water *khōr* adjacent the town as a lake and dismissed it as a harbour (Glaser 1890: 181). Yaqut (*Mu\_djam*, III 577; IV 481) and Ibn Khaldun (*\_lbar* p. 133) mention that the harbour town for Dhofar (which did not have its own harbour) lay approximately five parasangs away, presumably at Mirbat, which was frequented by traders.

#### Bibliography

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|---------------------------------|--|
| Carter, H.J. 1846               | The Ruins of El Balad, <i>Transactions of the Bombay Geographical Society</i> Feb.-Dec., 225-238.    |
| Costa, P. 1979                  | The Study of the City of Zaf_r (al-Bal_d), <i>Journal of Oman Studies</i> 5, 111-150.                |
| Gibb, H.A.R. 1962               | <i>The Travels of Ibn Batt_ṭa, A.D. 1325-1354</i> , Cambridge, vol. 2, 382-384, 390.                 |
| Glaser, E. 1890                 | <i>Skizze der Geschichte und Geographie Arabiens</i> , Berlin.                                       |
| Ibn Khaldun, K. <i>al-_lbar</i> | <i>Kit_b al-_lbar wa D_w_n al-Mutada_wa-l-Khabar</i> etc. B_l_q 1284aH/1925, 1927, 133.              |
| Jansen, M. 1998                 | Interim report of the German Mission ,University of Aachen   |
| Smith, G.R. 1993                | Ras_lids, <i>Encyclopedia of Islam</i> , 8, Leiden, 456.   |
| Sprenger, A. 1875               | <i>Die alte Geographie Arabiens als Grundlage der Entwicklungsge-schichte des Semitismus</i> , Bern. |
| Tkatsch, J. 1934                | Zaf_r, in: <i>Enzyklopaedia des Islam</i> , 4, Leiden, 1285-1289.                                    |
| Yaqut, <i>Mu_djam</i>           | <i>Mu_djam al-Buld_n</i> , ed. F. Wüstenfeld, Leipzig 1966-73, III, 577; IV 481; V 24.               |
| Yule, P. 1999                   | The Archaeological Park al-Balid 1995-98. CD-ROM publication, in preparation                         |
| to appear 1999                  |  |

### 3.4. The Frankincense park of Wadi Dawkah

#### 3.4.a. Description

##### 3.4.a.i) The Luban tree (*Boswellia sacra*) and the Frankincense

»Tree to 5 m tall, with a single trunk or more commonly several from base, bark papery, peeling, young branches dense tomentose, all parts highly resinous,. Leaves alternate, crowded at the end of branches, imparipinnate, oblong-obova in outline; leaflets subopposite, sessile, 6-8 pairs, increasing in size toward the tip, terminal leaflets largest, 15-40 mm long x 8-20 mm across, tip rounded, margin crenate-undulate, base truncate, thinly tomentose above densely so beneath. Flowers in axillary racemes crowded at the ends of branches... » Miller, A.G./Morris, M., *Plants of Dhofar* :78-81

The modern and antique period distribution of *Boswellia sacra* ( frankincense) in Arabia is under some dispute based on several different interpretations. Some authorities tend to restrict its

natural range to Dhofar (Müller 1976:124; Van Beek 1960: 46, fig 11; recently Casson 1989:162, fig.6, 119; reproduced, for example by Abercrombie 1985:485).

Others suggest a much wider distribution (Groom 1981:99; Monod 1979; Thulin and Warfa 1987). Hepper suggests a distribution covering Dhofar and the east Hadhramawt (1969:66). The authoritative study by Miller and Morris, suggests a range extending from Hasik in Dhofar to Habban in central Yemen (1988:78). Breton supports this hypothesis by noting that recent botanical research has shown that frankincense trees grew in the Hadhramawt, in Wadi Du'an, Wadi Hajjar and in the hinterlands of Mukalla (Breton 1990:114).

More specifically, in terms of habitat, *Boswellia* has been reported in three varieties based on ecological adaptation. Specifically in Dhofar, a coastal variety is found on the Salalah plain and the adjoining western hills. There is some question as to when the plant was introduced here. Some consider it a recent transplant (Hepper 1969:67; Miller and Morris 1988:78).

Local tradition states that the best oleo-resin came from trees originally growing in a belt in the arid zone behind the monsoon mountains, »beyond the reach of monsoon rain, but within reach of the cool winds which blow steadily during this (monsoon) season.» (Miller and Morris 1988 :78. Harvesting is practiced from April to June , and it consists of an initial incision in the bark by mean of a special iron knife in order to collect the gum, followed by several subsequent incisions until the final harvest, after which the tree is allowed to rest until the next year. After exuding from the incision, the gum, which is pale green to amber in color, is collected, stored and then brought to ports for shipment.

The gum could be differentiated by season. for instance J: *sa'haz xarfi* was the best quality harvested during the monsoon season from the eastern growing areas wich were beyond the monsoon reach.

The gum was used fresh or dried in various ways. In the earliest times such frankincense, as was wrested from this inhospitable terrain seems to have been reserved for divine worship and was considered to be sacred to the gods. It was buried during sacrificial ceremonies, and was offered in the temples, severe penalties being prescribed to punish anyone who attempted to remove it or to tamper with it in any unsuitable way.

In those ancient days frankincense commanded fabulous prices, its value being equated to that of gold. The Book of the Dead of the Ancient Egyptians (who believed frankincense to be the sweat of gods, fallen to earth) recommended the use of incense in many of the mortuary rituals and in ceremonial purification.

It was also important medicinally and it was used in the treatment of almost every disease by Greek and Roman physicians and as a fumigant to combat disease and evil odors. Remedies employing frankincense also appear in the Syriac Book of Medicine, in the texts of the Muslims practitioners of the classic period, and in Indian and Chinese medical writing.

Greek sailors were generally the source that produced earlier descriptions of the country that produced frankincense and the other scented gums. The mountains which were described by Ptolomy in his geography as the »mountains of Ophir» are now thought to be the same as the mountains of Saphar and to refer to Dhofar. As already mentioned, archaeological finds in the region have confirmed the presence of the frankincense gum trade.

### 3.4.a) ii) The Wadi Dawkah

In the region of Dhofar, Wadi Hogar, Wadi Andoor and Wadi Dawkah represent the most significant areas where frankincense trees grow (*Boswellia Sacra*). Their natural setting is intact.

The Wadi Dawkah area has been chosen for nomination considering its nearness to the national road and thence its easy accessibility for visitors. In the future the Omani authorities intend to classify at the national level also the Wadi Andoor and Wadi Hogar areas as a frankincense natural park and eventually to nominate them to the World Heritage List. No other comparable cultural environment significant for the frankincense trade exist in the region. as the most of the frankincense trees of the south Arabian region have almost disappeared today.

Wadi Dawkah is one of the north draining wadis that starts in the area of the high escarpment mountain north to Qairoon Hiritti center, about 80 km north of Salalah just behind the mountain belt. The upper lands behind the north facing cliffs, in which the wadi has its origins, receive little benefits of the monsoon rains, and are scattered with trees of *Acacia Ethaica*, *Commiphora Habessinica*, *Euphorbia Baldamifera* and *Grewnia*. Moving toward the desert, the vegetation becomes gradually sparser.

The vegetation of Wadi Dawkah frankincense park is mainly represented by frankincense trees growing in its flat bed. The portion of the Wadi Dawkah identified as a cultural landscape for nomination to the World Heritage List, falls approximately between latitude 17° 20' - 17° 23' N and longitude 54° 03' - 54° 05' E.

Other species, as *Acacia Tortilis*, *Merua Crassifolia*, *Acacia Ethaica* and *Silvadora Persica* are found in the northern part of the wadi and on the edges of the surrounding slopes.

### 3.4.b. History of the Frankincense Trade

Human presence in southern Arabian peninsula has been attested from the beginnings of the lower Palaeolithic.

During the Acheulean phase of the Lower Paleolithic ancestral populations presumably occupied much of the south-western Arabian shield during the favorable monsoonal pluvials (Nayemm 1990: 36-45).

According Zarins's report, Neolithic inhabitants of Dhofar conducted long-range trade involving eastern Arabia and Mesopotamia.

The data considered by Zarins fall into four categories.

First, lithic typology suggests the east Arabian Populations had ties to the Dhofar region. Fasad points have been found in Dhofar as well as the Jabrin area (Potts 1990:34).

The proliferation in Period II of bifacial tanged points (Potts 1990:47) occurs both in Dhofar and east Arabia.

Second, the strongest evidence of trade networking comes from marine shells found in Dhofar and Rub al-Khali neolithic sites. They certainly indicate close links to the Arabian Sea littoral. The trade in such shells covered distance ranging up to 500 km.

Third, even more impressive is the trade network organized around obsidian in southern Arabia/ east Africa. Obsidian retouched flakes, a few formal tools, and waste have been found on Rub al-Khali sites, up to Asir range, into the central Nejd as far as Dawadmi and Riyadh (Edens 1988:37; Zarins et al. 1982:pl.5/C; Zarins 1989,1990) at distances exceeding 1 000 km.

Based on this data set and the paleo-climatic/geologic evidence, Zarins concludes that the Dhofar neolithic inhabitants participated in a trade network which linked Dhofar to areas to the west, the Rub al-Khali, eastern Arabia (especially Jabrin, al Hasa) and ultimately Mesopotamia.

It is known from written evidence that, by the late phases of period Neolithic III, frankincense was imported into Mesopotamia. That the frankincense came from Dilmun is supported by the term "Shim.Dilmun".

Accordingly, Prof. Zarins concludes that overland trade was feasible and in place, linking southern and eastern Arabia via the Rub al-Khali and the Jabrin /Al Hasa oasis complexes, by period Neolithic II ( ca. 5 000 B.C.) and the extension of the Ubaid-Early Dynastic I presence in eastern Arabia may have reflected a great interest in aromatics.

Travel and trade by sea also originated in the Gulf by period II as « Ubaid maritime traders » with origins in specific towns such as Uruk and Ur (Oates et al 1977) came into contact with populations along the entire Arabian Gulf.

Moreover, Prof. Zarins attests that the trade in aromatics was certainly in place in eastern Arabia (Dilmun) by the middle of the third millennium BC. and that, by the Early Dynastic times (ca 2500 B. C.) extending through the early Bronze Age, sea-faring boats linked with the Indus valley, the Emirates, Bahrain, eastern Arabia and Sumer.

Cuneiform texts describing both frankincense and myrrh have been found dating to the Middle Assyrian, Neo- Assyrian, and Neo- Babylonian Periods.

The Sumerian term for frankincense "SHIMGIG" was continuously used in the Old Akkadian Period (2300-2100 B.C.).

From the Ur III Period (ca. 2100 B.C.) the trade in resins/aromatics is documented.

Merchants had devised a Standard Accounts list which included an aromatics/resin portion (Snell 1982 table 2, p.31 and pp.30-32). In Balanced Merchant Accounts from Old Babylonian Larsa, we see the continuation of this terminology ( Leemans 1960:152,157-158). In the Mari texts of Iasmah-Addu (1810-1780 B.C.) and later Zimri-Lim (1768 B.C.), the term is usually l'.GI'S ka-na-ak-tim and translated «Oliban» (frankincense) by Bottero. (ARM VII/13-14,17,25,27,39,84; cf.Bottero1957:178; ARMXXI/115;cf. Durand 1983:120 n.1 on a variant). However the term « labanatû » occurs only twice in very late first millennium B.C. Neo-Babylonian context.

In Egypt, historical mention of incense only begins with the Fifth and Sixth Dynasties. Harkhuf (ca.2200 B.C.) talks of incense being brought from Nubia to Egypt. From this period through the New Kingdom (c. 1100 B.C.) a variety of textual and visual material confirms that incense was brought to Egypt from Punt/God's Land-locations in the southern Red Sea (Shipwrecked Sailor, Henu Account, Hatsheput's Deir el Bahri relief, Papyrus Harris, etc.). Actual frankincense has been identified only from the Tutankhamun's tomb (Lucas 1962 :90,92-93) and other tombs restricted to the 18<sup>th</sup>-20<sup>th</sup> dynasties.

Of specific interest is the fact that Saleh has identified the GNBTYN people, mentioned in a Thutmose III text ( 1490-1456 B.C.) as the later south Arabian group known from classical sources as the Gebbanitae (Saleh 1972: 376; Groom 1981:29; Lucas1962:93; Beeston 1972)

The Iron Age A often is defined in south Arabia as inextricably tied to the aromatics trade, particularly in relationship with the complex states of south-west Arabia (Doe 1971: 55;Robin 1994:23). The trade, which, as above mentioned, originated much earlier, continued uninterrupted across Dhofar through this period. The evidence linking principal markets to the west is largely classical-historical (Doe1971: 30-59; Groom 1981: 55-95).

Artifacts found outside of east Arabia for the Iron Age A Period bring clues to the question of incense trade. Incense burners are known from occasional finds in northern Oman (Potts 1990: 378, Yule/Kazenwadel 1993 267 fig.8).

Cuboid incense burners are well known from Mesopotamia. From the west, incense burners are well known from south Arabian sites as well as sites associated with the Jebel Tuwayq route (Zarins et al. 1979:pl.24/160-162) Pre-Seleucid samples are suggested by C14 dates from the Najran surroundings which go back to the mid-first millennium B.C.

The Iron Age B Period (325 B.C.-650 A.D.) can be considered as the apogee of the incense trade and business.

In addition to the archaeological records from Arabia, historical classical authors both from Greek and Latin sources developed the clearest picture yet available.

By the time of Herodotus, c. 400 B.C., the southern portion of Arabia came under increasing scrutiny by the Greeks and later the Romans, due to its apparent monopoly of frankincense and myrrh.

In the following centuries until the mid-first millennium A.D., we can note the reports, descriptions and maps of Pliny, Theophrastus, Diodorus Siculus, Strabo, the anonymous author of the Periplus and Ptolemy, who remarked how the local people in the southwestern region of Arabia had accumulated such wealth, harvesting and trading the resins from frankincense and myrrh trees. These products were so highly valued that they were incorporated into Arab, Greek, Jewish and Roman religious rites alike. Prodigious amounts were reported to have been consumed.

The accounts of these authors give us brief descriptions of the geography and the regional states and cities of the area which controlled the products and their trade (see summaries in Van Beek 1958:142; 1960:72-3; Groom 1981:55-115; Doe 1971: Fig 2). Concerning Dhofar, the authors describe the sea trade in aromatics which originated at Moscha Limen or Syagrus which operated as coastal collection points (Albright 1982).

From these, the incense was shipped east to the Gulf, Persia or India or west to Eudaemon Arabia and the Red Sea. The land route led from Dhofar westward to such city states as Shabwa, Timna and Marib and thence northward to Najran along western Arabia either to Gaza, or eastward to the Wadi Sirhan or the Gulf region.

Was there a link from Dhofar directly north across the Rub al-Khali to the trade emporia of eastern Arabia and the Gulf? Based on Strabo's remark that a journey from Gerrha to the Hadhramawt required forty days, Van Beek suggested that a direct route existed. (Van Beek 1958:145, 150 Vs. Groom 1982:99). With the establishment of Gerrha by Babylonian exiles c. 700 B.C. on the shores of the Gulf in the vicinity of Qatar/ Bahrain, the question arises whether such a route across the Rub al-Khali ever existed in the Iron Age Period.

Ptolemy's map and table of coordinates, reconstructed by scholars (**Fig. 67**) places correctly the frankincense growing region (Libanophoros = Liban producing) behind the Sachalitae Region and Gulf (i.e. the Salalah plain).

This identification and location are certain for two reasons: 1) The frankincense region known today corresponds to the Salalah region. One of the principal wadis of the Salalah plain has the name Sahalnoot/ Sachalot. 2) From one of the Major first century south Arabic gate inscriptions found at Khor Rori, the region is mentioned as Sakalan (Pirenne 1975:82,85,89,95; Jamme in Albright 1982: 42-45) On the north side of the Sakalan plain, Ptolemy clearly indicates the tribe of Iobaritae, or Ubarites (summary Tkatsch 1934).

The evidence from the Periplus makes it clear that Moscha was a port solely for the king's shippers and the only foreigners allowed were the Indians who wintered there. Moscha was a subsidiary collecting point and a designated safe harbor for the king of Shabwa only (Casson 1989: 172-173). All of the evidence placed together suggests Moscha was Sumhuram/Khor Rori.

The Early Islamic Period dates demonstrate the participation of the region in the frankincense and horse trade as well. Archaeologically, the material from Shisr supported by C14 dates makes it clear that the Mahra people with the help of the Arab nomads participated in the trade of horses either across the Rub al-Khali or skirted its western boundaries. The early Islamic Period trade is represented as well by frankincense finds inland at Shisr.

Abbasid Period finds have been associated with the pilgrimage linking large portions of interior Arabia. Ibn al Mujawir notes in 1221 that a road existed between Raysut and Baghdad and caravans used to bring Baghdad fabrics and take back Indian products from Raysut. He also stated that a road existed between Mirbat and old Taqa which eventually went to Kufa in Iraq also branching to the al Hasa and Qatif oases.

It is clear from a distribution study that the northern Indian Ocean rim participated in the seafaring activities of the Abbasid Islamic Period. From Iraq through the gulf, Abbasid barbotine ware has been reported from the Indian subcontinent, Sri Lanka and as far east as Malaysia (Whitehouse 1968:14; 1979:881; Carswell 1979).

The Abbasid Period Arab presence in China is also well attested (Jun-Yan 1980:92-98), and it is supported by the Chinese records.

From the Zhu Fan Ji chronicles of the southern Sung Period (Records of the foreign People), the Chinese state that sailing westward, they they would find Ma-lo-ba (Mahra land) passing by way of Weng-man (Oman and Nu-fa -(Dhofar) (Jun-Yan (1880: 101). In the context of horse rearing, Wu-ba (Mirbat) is mentioned as well (Ibid. p.101, Wheatly 1959:47-49). The frankincense trade from this period is well documented. The Chinese traded extensively for Ju Hsiang (white milk) (Ju-Yan 1980:101)

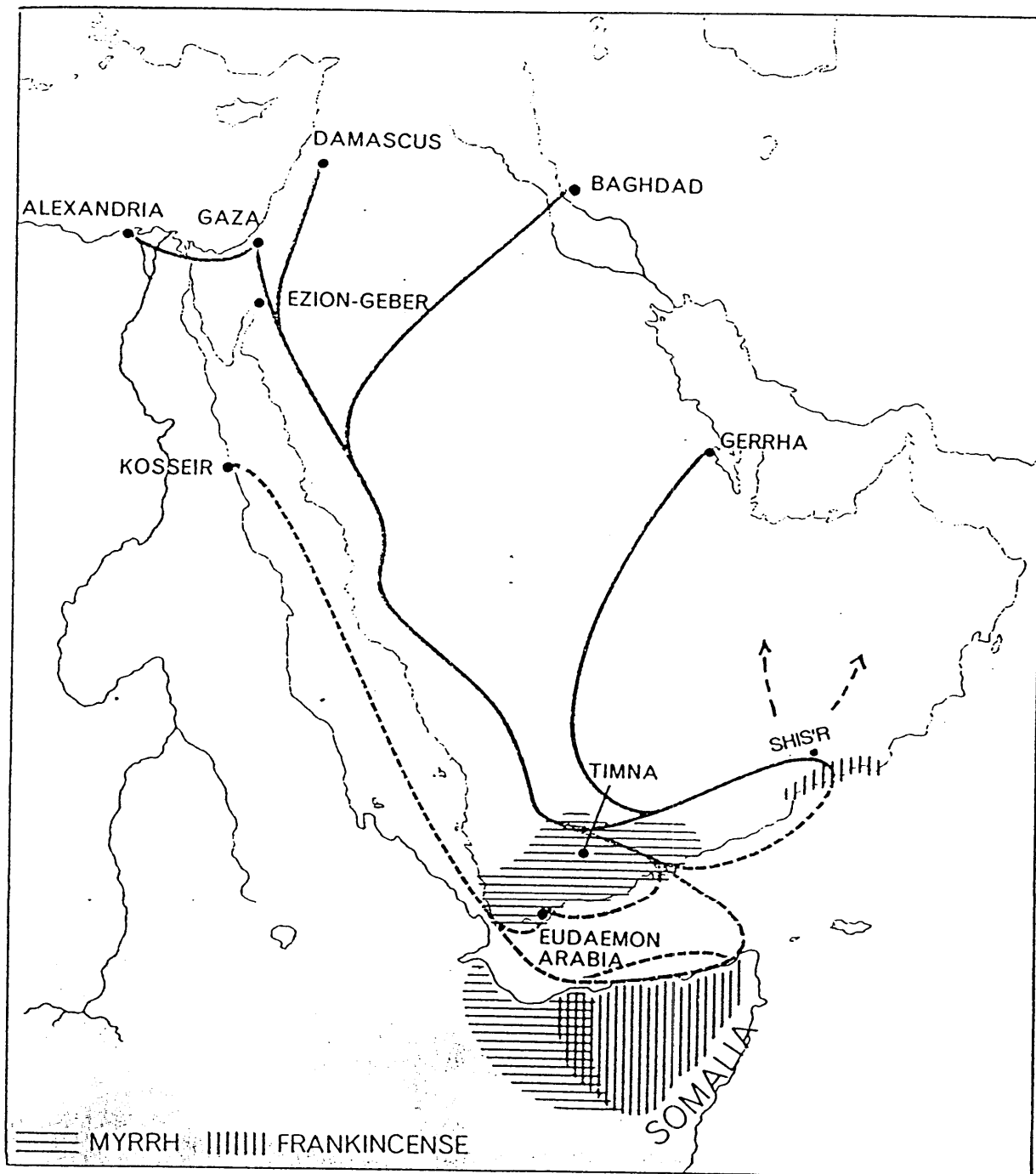
From Socotra (Sedov 1988:91) to the Red Sea, the ware has been found on the Arabian side and on the African side

In 1285, Marco Polo describes al Mansura (al Balid) on the coastal plain as engaging in both horse and white frankincense trade (Latnam ed.1982:271; Costa 1982:114-5)

At al Balid in the house of area H, F. Albright reported the recovery of almost 50 kg. of frankincense.

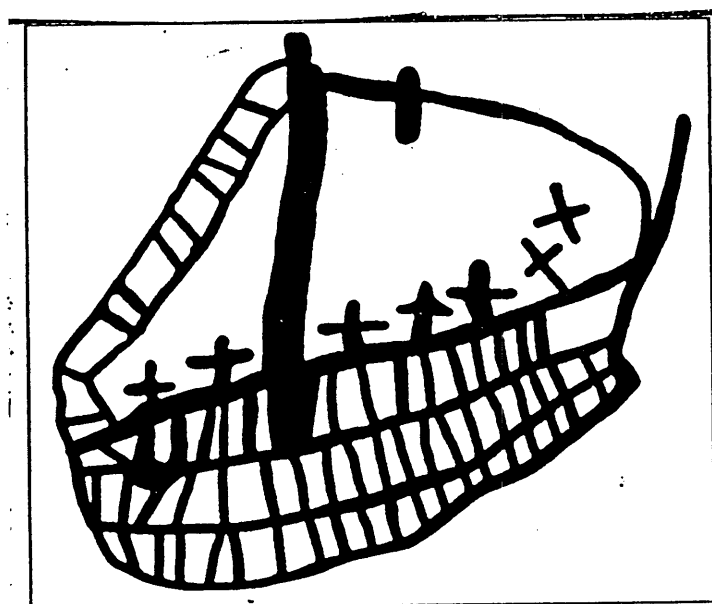
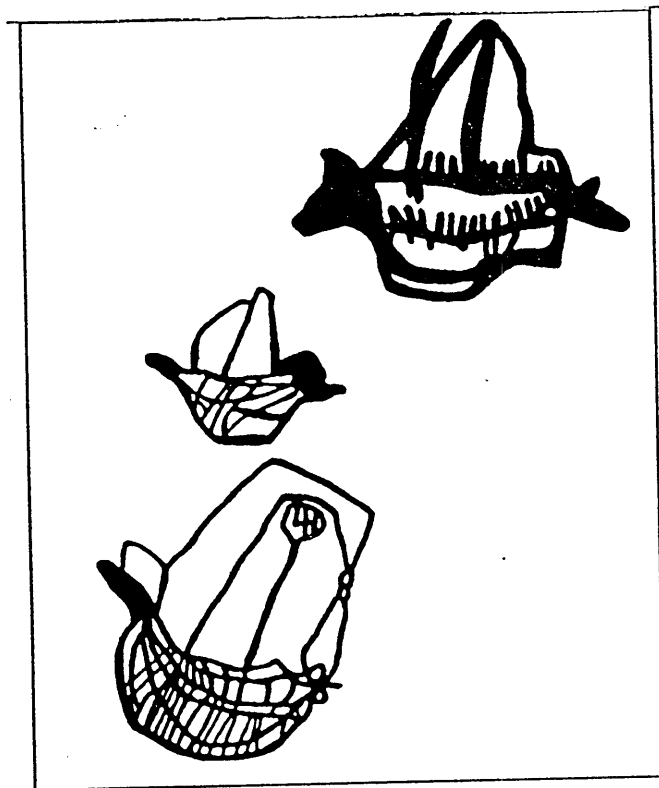
By 1450 A.D. the Turkish and Portuguese invasions brought the network organized since ancient times to a standstill. With the collapse of the ancient markets both the societies and products were forgotten.

In the early nineteenth century when scholars discovered that the resin trees were restricted to a small portion of the Dhofar region of southern Arabia (Thulin and Warfa 1987: Hepper 1987:109), investigations began to focus on the impact this product had had not only within the region itself, but throughout the Middle east and beyond.

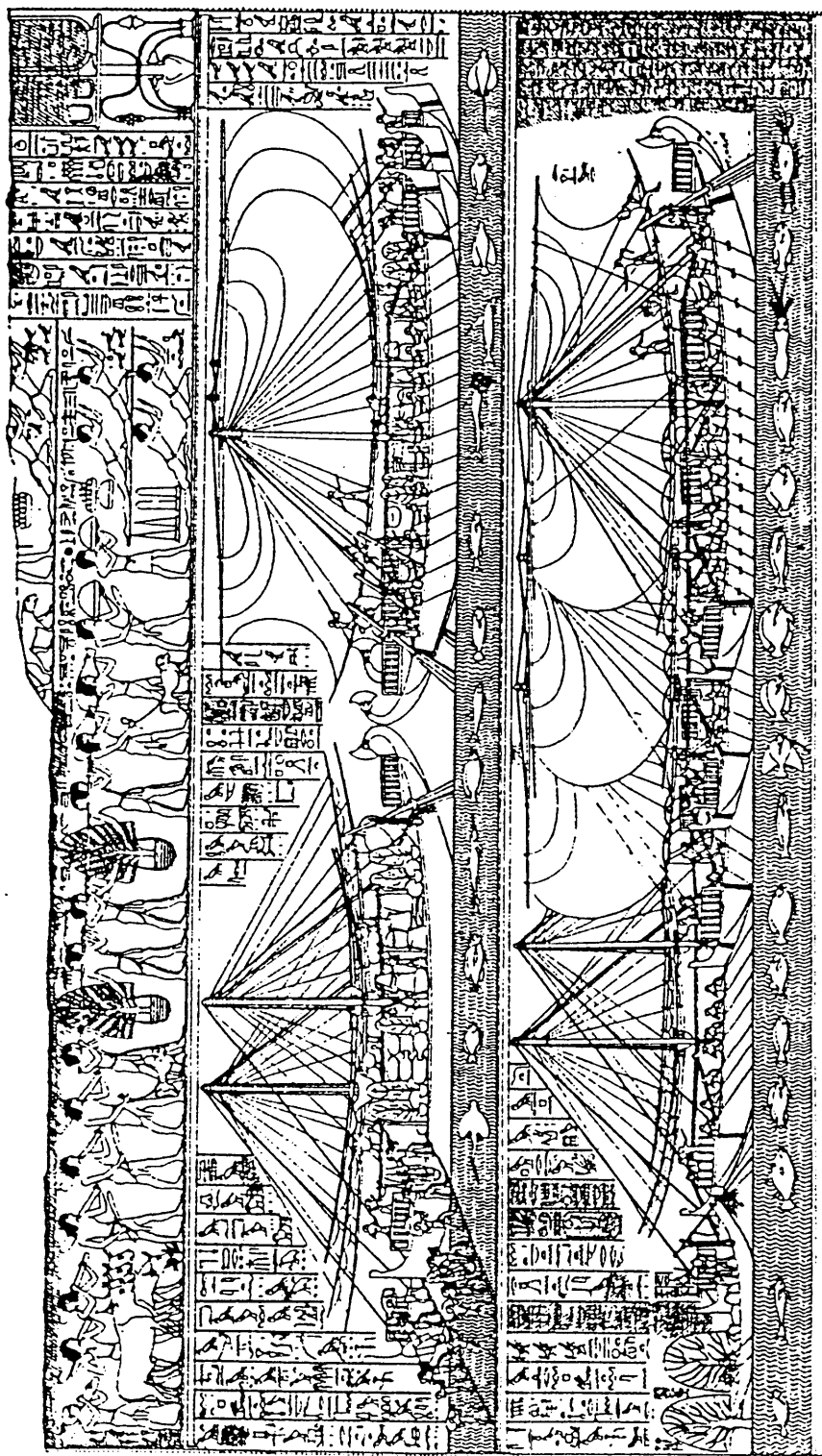


**Simplified Iron Age Land and Sea Trade Routes from the Incense-Producing Areas (After Van Beek 1960).**

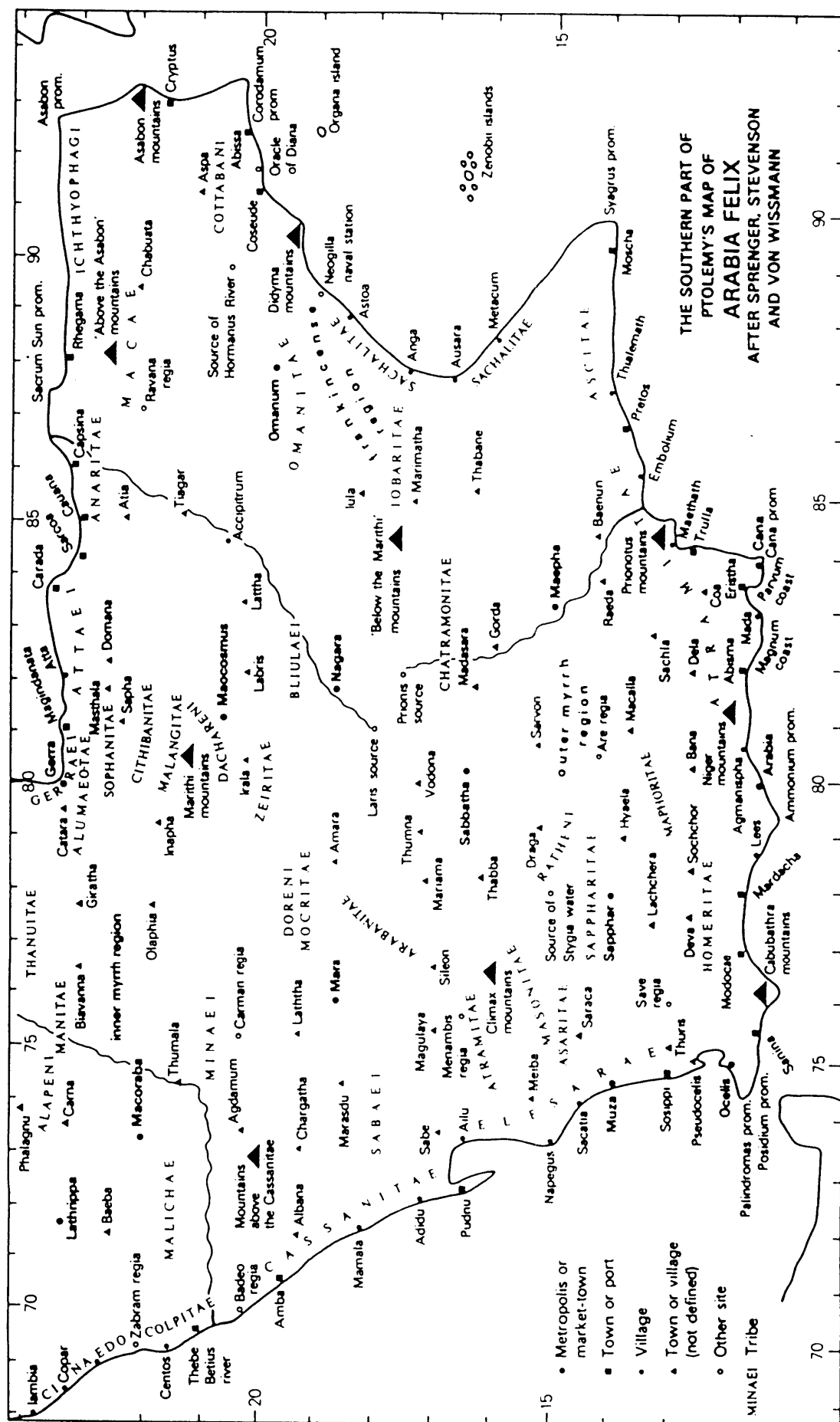


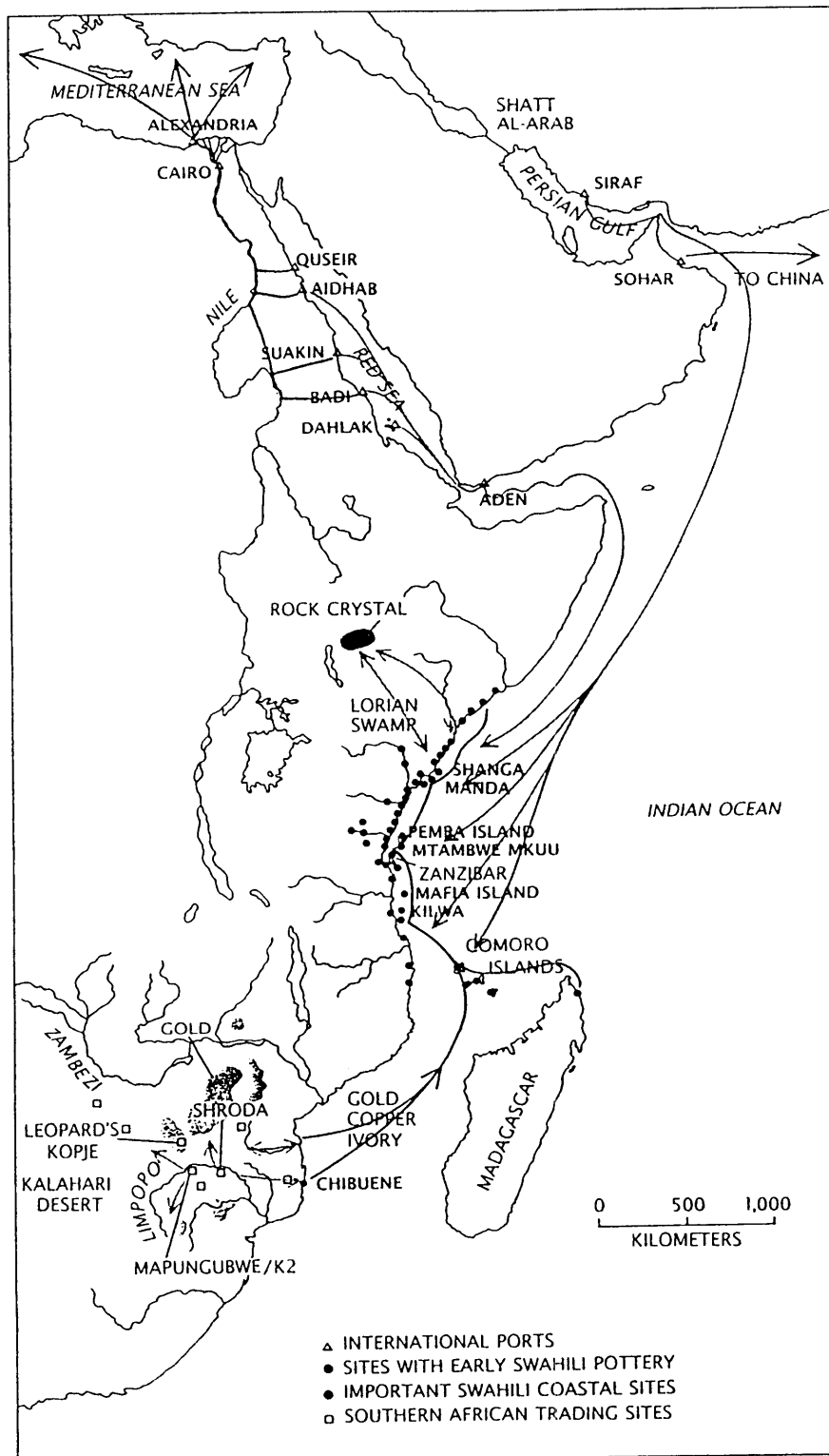


**Iron Age B Ships Depicted in Dhofar Hill Shelters (after Al- Shahri 1994**



# The Punt Fleet of Hatshepsut (1503-1482 B.C.) (After Save-Soderbergh 1947:fig. 1).





**Early Islamic Sea Routes Linking Arabia to East Africa (after Horton 1987)**

## Bibliography

- |                             |   |
|-----------------------------|---|
| Groom, N. 1981              | Frankincense and Myrrh, Longman, Harlow.  |
| Miller, G / Morris, M. 1998 | Plants of Dhofar, p.78-80,298-304, Oman   |
| Salah, E. 1999              | Report on Frankincense Tree in Dhofar, Oman   |
| Van Beek, G. 1958           | Frankincense and Myrrh in Ancient South Arabia, Journal of the American and Oriental Society 78,n°3, S 141-152, Baltimore |

### 3.c. Form and date of most recent records of property

#### 3.c.i) Shisr

Archaeological survey carried out in 1990 - 1995 by Prof Yuris Zarins.

#### 3.c.ii) Khor Rori

Archaeological survey carried out by the University of Pisa, under the direction of Prof. Alessandra Avanzini (1997)

#### 3.c.iii) Al-Balid

Archaeological survey, restoration work and presentation project carried out by Prof. Michael Jansen (Aachen University, 1995 - 99).

#### 3.c.iv) Frankincense Park

Identification of boundaries by joint Omani UNESCO mission 1999, and inscription on the national inventory

### 3.d.Present state of conservation

#### 3.d.i) Shisr

The archaeological remains have been recently consolidated under the supervision of the Ministry of Information and with the advising of the Aachen University mission.

The rock on which the archaeological relics are located needs conservation works .

The natural environment of the site, including neolithic surrounding remains, is intact

#### 3.d.ii) Khor Rori

The archaeological remains have been excavated by the mission of the Pisa Archaeological Department (1997). Conservation work is foreseen in the near future.

There is no ongoing building development in the area of the khor, the flora and fauna of which is still intact.

2 km eastward of the khor, quarrying is active. Any such exploitation will be forbidden in the limits of the nominated buffer zone

### **3.d.iii) Al-Balid**

Archaeological excavation and restoration is ongoing on the remains, under the direction of Prof. Jansen; Urban History Department, Aachen University.

The setting of the site consists of the natural shore on the south side, agricultural fields on the east and north sides and of a low density settlement on the west side.

### **3.d.iv) Frankincense Park**

The natural environment of the park is intact.

## **3.e. Policies and programmes related to the presentation and promotion of the property**

### **3.e.i) Shisr**

The water supply is a part of the problem of the site conservation. Continued use over a long period has depleted the resource and degraded the rock. Countering of this process is part of the action plan that the Omani authorities are establishing in order to preserve the site and develop its cultural tourism potential.

The Ministry of Information, under the advising of the Advisory Archaeological Board, has entrusted a geological engineering company of establishing the restoration project of the rock on which the archaeological relics are located.

The revitalisation project of the area foresees to stop the exploitation of the historical spring , by exploiting other water sources in the surrounding area for the needs of local inhabitants and for agricultural use.

Moreover, the project foresees the revitalisation of the existing palmgrove and the creation of a small archaeological museum in the existing traditional building near the fortress.

### **3.e.ii) Khor Rori**

Considering the importance of this exceptional ancient settlement and the enchantment of its historical and environmental landscape, consisting of the seacoast, the khor, the surroundings hills and the waterfalls watering the inlet during monsoon season, the Omani authorities consider as a priority the establishment of a comprehensive conservation and restoration project of both the archaeological and natural features of the whole site of Sumhuram/Khor Rori. In doing so they intend to assure the possibility for the cultural and environmental ensemble to be explored by researchers and appreciated by visitors, testifying forever to the ancient history of the Sultanate of Oman.

An agreement has been recently signed with the Archaeological Department of the Pisa University in order to carry out further archaeological surveys and implement simultaneously the necessary restoration work.

### **3.e.iii) Al-Balid**

In 1993-94 al Balid was selected due to UNESCO evaluation as a special archaeological site to be developed for cultural tourism:

The special position of the site, with its vicinity to the city of Salalah, and the tourist hotel facilities, favours its development which comprises of excavation, conservation , landscaping and didactics. In the course of this programme, the Aachen University mission, in cooperation

with the Ministry of Information, excavated and conserved the remains of a large mosque and part of the city wall and of the citadel:

The programme, aiming at establishing this archaeological park due to open to public before December 1999, includes training of local qualified personnel for further employment.

Paved paths have been created and lighting installed in order to facilitate visiting .

An information centre, having access from the Sultan Al Qaboos road, is foreseen in the area north of the khor.

### **3.e.iv) Frankincense Park**

Delimitation of the boundaries with natural elements as stone piers is foreseen, together with the creation of an tourist information centre at the entry of park.

The access for visitors will be controlled.

## **4. MANAGEMENT**

### **4.a. Ownership**

**4.a.i) Shisr:** property of the Sultanate

**4.a.ii) Khor Rori:** property of the Sultanate

**4.a.iii) Al-Balid:** property of the Sultanate

**4.a.iv) Frankincense Park of Wadi Dawkah:** property of the Sultanate

### **4.b. Legal status**

**4.b.i) Shisr:** archaeological site registered on the national cultural inventory

**4.b.ii) Khor Rori:** archaeological site registered on the national cultural inventory

**4.b.iii) Al-Balid:** archaeological site registered on the national cultural inventory

**4.b.iv) Frankincense Park of Wadi Dawkah:** natural site registered on the national natural inventory

### **4.c Protective measures and means of implementing them**

For all the sites:

**Royal decree n° 6/80 on the protection of the National Heritage;**

**4.c.i) Shisr,**

**4.c.ii) Khor Rori**

**4.c.iii) Al-Balid:**

The Omani Government will provide the registration act on the national cultural inventory, before the next session of the Bureau of the World Heritage Committee.

**4.c.iii) Al-Balid:**

Urban development master plan of Salalah, identifying the archaeological area as a nature conservation area

**4.c.iv) Wadi Dawkah Frankincense Park:**

The Omani Government will provide the registration act on the national natural inventory, before the next session of the Bureau of the World Heritage Committee

#### 4.d. Agency with management authority

**For all the sites:**

**National Committee for the Archaeological Survey in the Sultanate of Oman**

constituted by :

- Minister of Information - Chairman
- Ministry of High Education
- Ministry of Foreign Affairs
- Ministry of National Economy
- Ministry of the Palace Affairs
- Undersecretary for Cultural Affairs in the Ministry of Heritage and Culture
- Governor of Dhofar Province
- Archaeological Advisory Board ( UNESCO Dr. Hideo Noguchi, Prof. Michael Jansen; Aachen University, Prof. Paolo Costa, Ravenna University, Prof. Michael Mc Donald, Oxford University).

#### 4.e. Level at which management is exercised

**National level:** National Committee for the Archaeological Survey in the Sultanate of Oman

**Regional level:** The Omani Government will appoint a regional director for the archaeological sites of the Dhofar Region

**Provincial level:** Governor of Dohfar province- Salalah

#### 4.f. Agreed plans

**For all the sites:**

The Oman Government will adopt the relevant conservation plans and tourism development plans in the near future.

**4.f.iii) Al-Balid:** Urban development master plan

#### 4.g. Sources and level of finance

**For all the sites:**

Ministry of National Heritage and Culture

**budget (6 576 000 US\$)**

#### 4.h) Sources of expertise and training in conservation and management techniques:

**For all archaeological sites**

Archaeological Advisory Board constituted by:

Dr. Hideo Noguchi, UNESCO

Prof. Michael Jansen , architecture historian, Aachen University;

Prof. Paolo Costa, archaeologist , Ravenna University

Prof. Michael Mc Donald, philologist, University oh Oxford

**4.h.a. Shisr** Cooperation between national qualified personnel and Aachen University mission , under Prof.. Michael Jansen's direction; with the contribution of the Raymond Lemaire Restoration Centre, Leven, Belgium



**4.h.b) Al-Balid** Cooperation between national qualified personnel and Aachen University mission , under Prof. Michael Jansen's direction; with the contribution of the Raymond Lemaire Restoration Centre, Leven, Belgium

**4.h.c) Khor Rori** Cooperation between national qualified personnel and Pisa University mission, directed by Prof. Alessandra Avanzini.

#### **4.j. Property management plan**

The Omani Government will present the property management plan for all the sites in the next future.

### **5. FACTORS AFFECTING THE PROPERTY**

#### **5.a. Development pressure:**

**5.a.i) Shisr:** being located in a desert area there is no risk of development or environment pressure. The activities of locals should respect the archaeological setting

**5.a.ii) Khor Rori:** being located in a natural environment, with no ongoing activity, there is no risk of development or environment pressure at the present time. Development or environment pressure could threaten the area in the future in case the proposed buffer zone should not be respected.

**5.a.iii) Al-Balid:** being flanked on its west side by an urban settlement, there are risks of building encroachment and environment pollution in case the nominated buffer zone should not be respected.

**5.a.iv) Wadi Dawkah Frankincense Park:** being located in a desert zone there is no risk of development or environment pressure

#### **5.c. Natural Disasters**

##### **5.a.i) Shisr**

The whole site, is located on a geological fold which runs just across the cave on top of which the archaeological structures lie.

The water supply is a part of the problem of the site conservation. Continued use over three or four thousand years has depleted the resource and degraded the rock.

**5.a.ii) Khor Rori:** None

**5.a.iii) Al-Balid:** None

**5.a.iv) Wadi Dawkah Frankincense Park:** None

**5.d. Tourism pressure danger:** non existing for all the sites;

#### **5.f. Number of Inhabitants within the property and the buffer zone**

**5.f.i) Shisr:** no inhabitant in the property. 200 inhabitants in the buffer zone

**5.f.ii) Khor Rori:** no inhabitant in the property, no inhabitant in the buffer zone

**5.f.iii) Al-Balid:** no inhabitant in the property, no inhabitant in the buffer zone

**5.f.iv) Wadi Dawkah Frankincense Park:** no inhabitant in the property, no inhabitant in the buffer zone

## **6. MONITORING**

### **6.a. Key indicators for measuring state of conservation**

Conservation and restoration works being necessary for the protection of the archaeological sites of Shisr and Khor Rori, monitoring key indicators will be established once those works will be implemented.

In the case of al-Balid , the archaeological remains have been already partly restored and the implemented restoration work can be assumed on the future as key indicator of the state of conservation of the site.

The flora and the fauna of Wadi Dawkah frankincense park is presently intact.

### **6.b.Administrative arrangements for monitoring properties**

The Government will adopt regular annual system of monitoring the condition of the properties.

### **6.c. Results of previous reporting exercises**

None.

## **7. Documentation**

### **7.a. Photographs, slides**

#### **7.a.i) Shisr**

Pictures

N° S.1.p Satellite view of the Shisr area

N° S.2.p Aerial view of the site

N° S.3.p Aerial view of the site

N° S.4.p Arrival to Shisr from the South

N° S.5.p The remains of the inner tower

N° S.6.p The remains of the inner tower

N° S.7.p The rocky outcrop and the remains of the inner tower

N° S.8.p Three-dimensional view of the site (Aachen Urban History Department)

N° S.9.p The traditional building inside the fenced area

N° S.10.p Shisr Village

N° S.11.p Geological fold in the surrounding area

N° S.12.p The palmgrove

N°S.13.p Flints tools found in the surrounding Neolithic sites

N°S.14.p Flints tools found in the surrounding Neolithic sites

Slides

N° S.1.s Satellite view

N° S.2.s Aerial view

N° S.3.s Aerial view

N° S.4.s Aerial view

- N° S 5.s Aerial view
- N° S.6.s Aerial view
- N° S.7.s Aerial view
- N° S.8.s Aerial view
- N° S.9.s Aerial view s
- N° S.10.s Arrival in Shisr from the south
- N° S.11.s The village
- N° S.12.s The geological fold in the surrounding area
- N°S.13.s The site
- N°S.14.s The site
- N°S.15.s The site
- N°S.16.s Three- dimensional view of the site
- N°S.17.s The surroundings
- N°S.18.s The palmgrove
- N°S.19.s The flint findings in the surrounding Neolithic sites
- N°S.20.s The flint findings in the surrounding Neolithic sites

### **7.a.ii) Khor Rori**

#### **Pictures**

- N° K. 1.p View from the fortress toward the khor
  - N° K.2.p View from the fortress toward South East
  - N° K.3.p The fence and the guard post
  - N° K.4.p The fence protecting the site
  - N° K 5.p The access to the archaeological site on the North-West
  - N° K.6.p The gate area
  - N° K.7.p Islamic Inscription in the gate wall
  - N° K.8.p Central area
  - N° K.9.p Central area
  - N° K.10.p Central area
  - N° K.11.p South area
  - N° K.12.p South area
  - N° K.13.p Abutting walls in the south area
  - N° K.14.p The East wall
- See also pictures in Roberto Orazi's publication (In annex)

#### **Slides**

- N° K. 1.s The fence and the guard post
- N° K.2.s The fence protecting the site
- N° K.3.s The access to the archaeological site
- N° K.4.s The access to the archaeological site
- N° K 5.s The gate tower
- N° K.6.s Islamic inscription
- N° K.7.s The central area
- N° K.8.s The central area
- N° K.9.s The central area
- N° K.10.s The well
- N° K.11.s South area
- N° K.12.s South area
- N° K.13.s South East area
- N° K.14.s South East view

N° K.15.s South west view  
 N° K.16.s South west view  
 N° K.17.s South west view

### **7.a.iii) Al-Balid**

#### **Pictures**

N° AB.1.p Aerial view from the West  
 N° AB.2.p Aerial view of the Great Mosque  
 N° AB.3.p The Great Mosque  
 N° AB.4.p The Great Mosque: minaret and ablution area  
 N° AB.5.p The Great Mosque: the courtyard  
 N° AB.6.p The Great Mosque: the Qibla wall  
 N° AB.7.p The citadel  
 N° AB.8.p The citadel  
 N° AB.9.p The citadel  
 N° AB.10.p The citadel  
 N° AB.11.p Small mosque ruins  
 N° AB.12.p Cemetery  
 N° AB.13.p Cemetery  
 N° AB.14.p Decorated column

#### **Slides**

N°AB.1.s Aerial view from the West  
 N°AB.2.s Aerial view from the South West  
 N°AB.3.s Aerial view from the East  
 N°AB.4.s Aerial view from the South East  
 N°AB.5.s Aerial view of the inlet from the North  
 N°AB.6.s Aerial view of the inlet from the East  
 N°AB.7.s Aerial view of the East area  
 N°AB.8.s Aerial view of the central area  
 N°AB.9.s Aerial view of the Great Mosque  
 N°AB.10.s Aerial view of the Great Mosque  
 N°AB.11.s The Great Mosque  
 N°AB.12.s The prayer hall of the Great Mosque  
 N°AB.13.s The prayer hall of the Great Mosque  
 N°AB.14.s The Qibla wall  
 N°AB.15.s Columns in the mosque surroundings  
 N°AB.16.s Excavations in the citadel  
 N°AB.17.s Excavations in the citadel  
 N°AB.18.s A cemetery

### **7.a.iv) Wadi Dawkah Frankincense Park**

#### **Pictures**

N° WD.1.p Aerial view of the area  
 N° WD.2.p Aerial view of the area  
 N° WD.3.p Aerial view of the area  
 N° WD.4.p Aerial view of the area

- N° WD.5.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.6.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.7.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.8.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.9.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.10.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.11.p The bed of the Wadi Dawkah and the frankincense trees
- N° WD.12.p The bed of the Wadi Dawkah and the frankincense trees
- N°WD.13.p Camels in the bed of the Wadi Dawkah
- N°WD.14.p The bed of the Wadi Dawkah and the frankincense trees
- N°WD.15.p Frankincense tree (*Boswellia sacra*)
- N°WD.16.p Frankincense tree (*Boswellia sacra*)
- N°WD.17.p Trunk of frankincense tree
- N°WD.18.p Incision in the bark in order to collect the gum

#### Slides

- N° WD.1.s Aerial view of the area
- N° WD.2.s Aerial view of the area
- N° WD.3.s Aerial view of the area
- N° WD.4.s Aerial view of the area
- N° WD 5.s Aerial view of the Wadi Dowkah
- N° WD.6.s Aerial view of the Wadi Dowkah
- N°WD.7.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.8.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.9. The bed of the Wadi Dawkah and the frankincense trees
- N°WD.10.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.11.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.12.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.13.s The bed of the Wadi Dawkah and the frankincense trees
- N°WD.14.s Frankincense tree (*Boswellia sacra*)
- N°WD.15.s Frankincense tree (*Boswellia sacra*)
- N°WD.16.s Frankincense tree (*Boswellia sacra*)
- N°WD.17.s Frankincense tree (*Boswellia sacra*)
- N°WD.18.s Frankincense tree (*Boswellia sacra*)
- N°WD.19.s Incision in the bark in order to collect the gum
- N°WD.20.s The incision in the bark

### 7.c. General bibliography

- |                     |  |
|---------------------|--|
| Aga-Oglu, K. 1948   | Ming Export Blue and White Jars in the University of Michigan Collection. In: The Art Quarterly, 2:201-217 |
| Albright, F.P. 1953 | The Himyaritic Temple at Khor Rori (Dhofar) Oman. In: Orientalia XXII (3): 284-7                           |
| Albuquerque         | The Commentaries of the Great Affonso D'Albuquerque, I,II. Transl. W. de G. Birch.                         |

Hakluyt Society, LIII, London

- Avanzini, A. 1996      La Missione Italiana nel Dhofar (1997). In: Egitto e Vicino Oriente XIX: 181-241
- Avanzini, A. 1997      Missione Italiana nel Dhofar (M.I.D.) Preliminary Report on the 1997 Campaign. Pisa (Manuscript)
- BASOR                  Bulletin of the American School of Oriental Research. New Haven
- Beeston, A. 1976      The Settlement at Khor Rohri. JOS 2:39-42
- Burnell, A.C. 1885      The Voyage of John Huyghen van Linschoten to the East Indies. London
- Carter, H.J. 1846      The Ruins of El Balid. JRAS 16:187-99
- Casson, J. 1989      The Periplus Maris Erythraei. Text with Introduction, Translation and Commentary. Princeton
- Chittick, N. 1974      Kilwa. An Islamic Trading City on the East African Coast. Nairobi
- Cleveland, R.L. 1959      Preliminary Report on Archaeological Soundings at Sohar (Oman). In: BASOR 153:11-19
- Cleveland, R.L. 1960      The Amerivan Archaeological Expedition to Dhofar. BASOR 159:14-26
- Comfort, H. 1960      Some Imported Pottery at Khor Rohri (Dhofar). In: BASOR 160: 15-20
- Cortesao, A.T. 1960      Portugaliae Monumenta Cartographica. Lisbon  
Da Mota, A.T.
- Costa, P. 1979      The Study of the City of Zafar (al Balid). In: JOS Vol. 5: 111-151
- Costa, P. 1985      The Architecture of Salalah and the Dhofar  
Kite, S. Littorial. In: JOS vol. :111-150
- d'Erico, E. 1983      Introduction to Oman, Military Architecture of the Late 16th, 17th and 18th Centuries. In: JOS vol. 6
- Dames, M.L. 1812      The Book of Durarte Barbosa. London  
(Ed.)



- de Cardi, B. 1975            Archaeological Survey in Northern Oman, 1972.  
In: EW 51-1: 9-75
- Dinteman, W. 1993        Forts in Oman. Dubai
- Encyclopaedia Islamica 1934        Leiden
- Galderi, E. 1975            Masterpiece of Omani 17th Century  
Architecture. In: JOS vol. 1
- Gibbs, H. 1957            Ibn Battuta. (Reprint 1993 New Delhi)
- Guest, R. 1935            Zufar in the Middle Ages. In: Islamic Culture  
IX (3): 402-10. Hyderabad
- Guy, J.S. 1990            Oriental Trade Ceramics in South-East Asia.  
Ninth to Sixteenth Century with a Catalogue  
of Chinese, Vietnamese and Thai Wares in  
Australian Collections.
- Hansman, J. 1985        Julfar, an Arabian Port. Its Settlement and  
Far Eastern Ceramic Trade from the 14th to the  
18th Centuries. London
- Hourani, G.F. 1951        Arab Seafaring in the Indian Ocean in Ancient  
and Medieval Times. Princeton University  
Studies, XIII. New Jersey
- Jamme, A. 1967            Two New Hadrami Inscriptions from Zofar.  
Bibliotheca Orientalis XXIV:145-8
- Jansen, M. 1999g        The Archaeological Park al- Balid, First  
(Ed.) Interim Report. Aachen(in Print)
- Jansen, M. 1999h        Computer Documentation al Balid. Aachen  
Santana, M.
- JOS                        Journal of Oman Studies. Muscat
- JRAS                      The Journal of the Royal Asiatic Society of  
Great Britain and Ireland. London
- Miles, S.B. 1966 (2)        The Countries and Tribes of the Persian Gulf.  
London
- Miller, A.G. 1998        Plants of Dhofar. The Southern Region of Oman.  
Morris, M. Traditional, Economic and Medicinal Use. Oman
- Phillips, W. 1967        Oman: A History. London
- Phillips, W. 1971        Unknown Oman. Beirut

- Pirenne, J. 1975            The Incense Port of Moscha (Khor Rohri) in Dhofar. *JOS* 1:81-96
- Sasson, J. 1998            Civilizations of the Ancient Near East. New York
- Serjeant, R.B. 1963        The Portuguese off the South Arabian Coast. Hadrami Cronicals. Beirut (Reprint 1974)
- Tampoe, M. 1989           Maritime Trade between China and the West: An Archaeological Study of the Ceramics from Siraf (Persian Gulf) 8th to 15th centuries A.D. In: *BAR International Series* 555
- Thomas, B. 1932           Arabia Felix: Across the Empty Quarter of Arabia. London
- Whitcomb, D. 1975        The Archaeology of Oman: A Preliminary Discussion of the Islamic Periods. In: *JOS* 1: 123-57
- Whitehouse, D. 1968      Excavations at Siraf: First Interim Report. In: *Iran* VI
- Whitehouse, D. 1973a     Sasanian Maritime Trade. In: *Iran* XI: 29-49
- Williamson, A.
- Whitehouse, D. 1973b     Chinese Stonewares from Siraf. In: *Asian Archaeology*: 241-54
- Whitehouse, D. 1977      Maritime Trade in the Arabian Sea: the 9th and 10th Centuries. In: *SAA* 2: 865-885
- Whitehouse, D. 1979      Islamic Glazed Pottery in Iraq and the Persian Gulf: The 9th and 10th Centuries. In: *Anali dell'Istituto Orientale di Napoli*, 39, 1:45-61
- Whiteway, R.S. 1899      The Rise of the Portuguese Power in India 1497-1550. Delhi
- Yule, H. 1903            The Book of Ser Marco Polo, the Venetian. London



**8. Signature on behalf of the State Part**

Dr. Husa Bin Jaafar BIN HASSAN  
Ambassador  
Permanent delegate of OMAN to UNESCO

30. June 1999