PAOLO BIAGI and RENATO NISBET

SOME ASPECTS OF THE 1982-1985 EXCAVATIONS AT THE ACERAMIC COASTAL SETTLEMENT OF RH5 AT QURM (MUSCAT-SULTANATE OF OMAN) *

PREFACE

Most of the prehistoric sites found on Ra's al-Hamra were discovered by R. Jäckli in the early Seventies (Tosi 1975). The cape lies a few kilometres north west of Muscat (fig. 1). It consists of a calcareous Tertiary terrace stretching towards the sea in one of the most interesting ecological zones of the Oman coast, at the eastern end of the flat Batinah beach and the beginning of the rocky coastline which extends southwards as far as Ra's al-Hadd.

The sea of Ra's al-Hamra is still nowadays strongly exploited by local fishermen. At least 11 sites (fig. 2) have been recognised at different times by various surveys carried out by the Italian and German expeditions (Durante, Tosi 1977; Uerpmann pers comm 1983).

The sites excavated so far are those of RH4 (Durante, Tosi 1977: 141), RH5 (Biagi, Torke, Tosi, Uerpmann 1984), RH6 (Durante, Tosi 1977: 158) and RH10 (Tosi pers comm 1984). They all lie on the already mentioned Tertiary terrace with the exception of RH6 which is in the mangrove at the mouth of Wadi Aday.

The site of RH5 actually looks like an oval shaped mound extending north-south, some 90 metres long an 45 wide. Its surface is covered with greenstone, flint, jasper and quartzite artefacts as well as with marine and mangrove shells. The excavations at the site began in 1980 and continued

* Department of Historical, Archaeological and Oriental Sciences. University of Venice. Department of Anthropology and Archaeology. University of Turin.

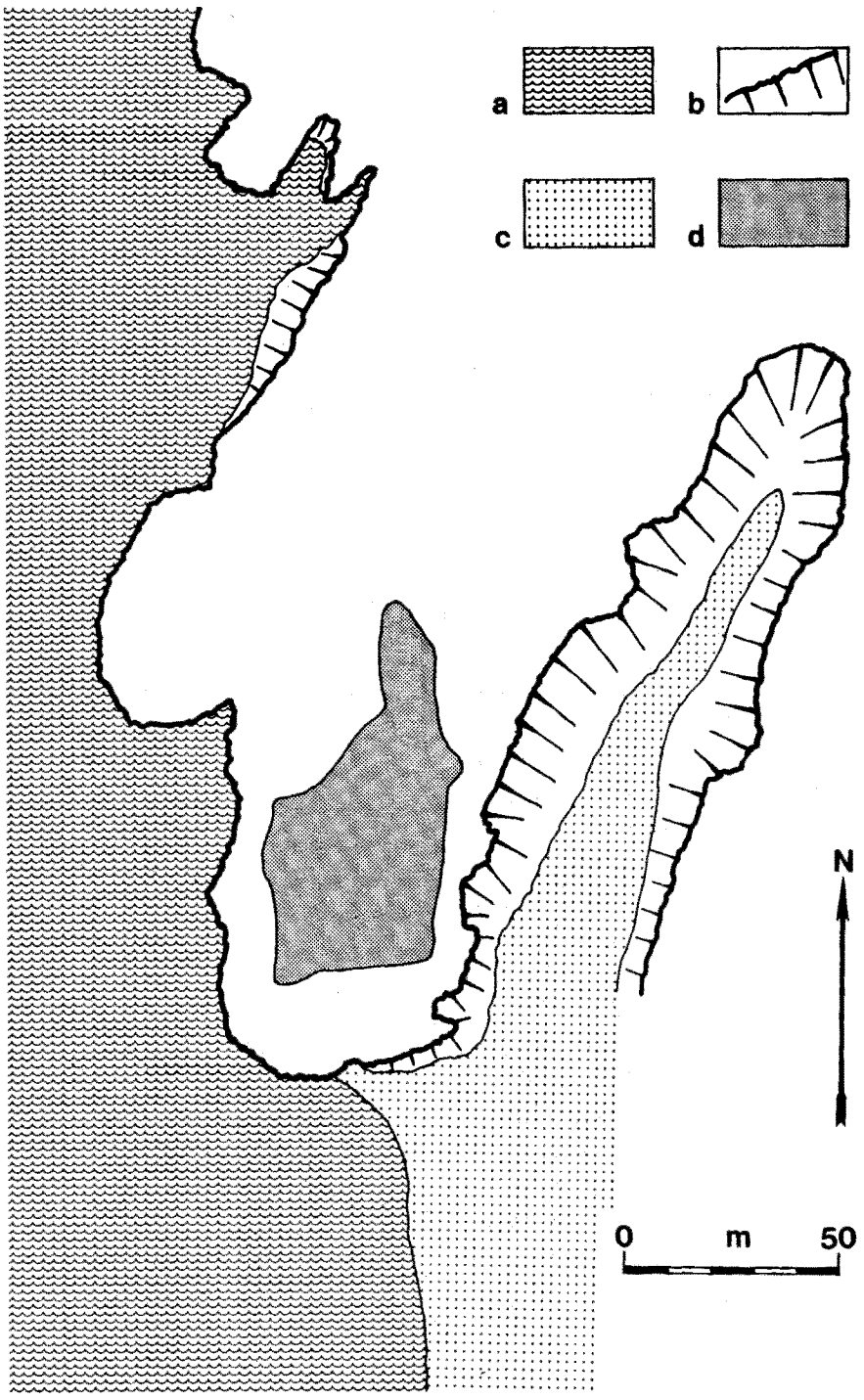


Fig. 1. – Ra's al-Hamra. *a*) Indian Ocean, *b*) Tertiary terrace, *c*) Batinah beach, *d*) Shell/fish mound of RH5.

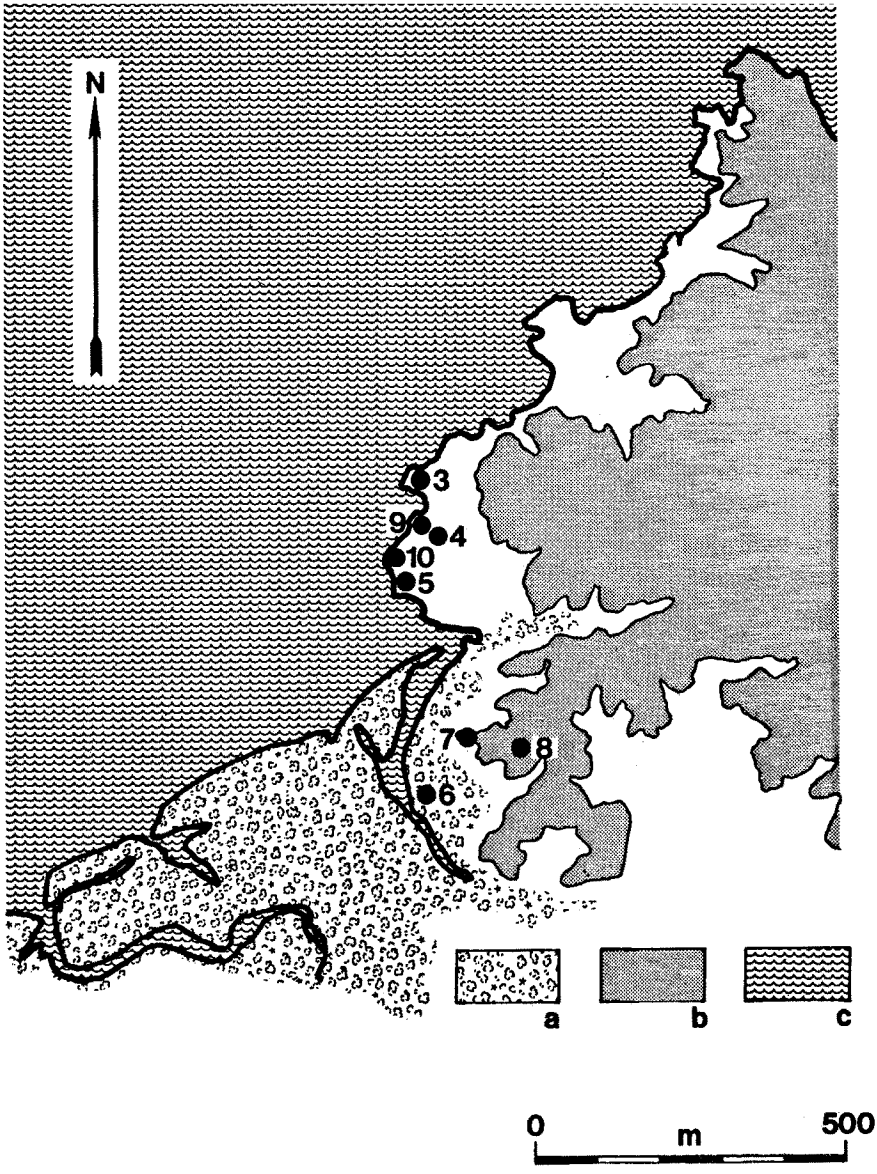


Fig. 2. – Ra's al-Hamra. Location of the prehistoric settlements indicated by the black point. *a*) Mangrove swamp and beach, *b*) Lands above 10 metres, *c*) Indian Ocean.

until January 1985. They brought to light the remains of several settlements and a cemetery of more than 220 individuals (Coppa, Macchiarelli, Salvatori, Santini 1985; Biagi, Salvatori 1986; Santini 1985).

THE EXCAVATIONS

During the winter of 1982-1983 an east-west trench was opened in order to understand the settlement stratigraphy and to start a detailed excavation in the thickest part of the deposit. The accurate diggings carried out in the winters of 1983-1984 and 1984-1985 revealed the existence of at least seven main phases of habitation. The top of the sequence (fig. 3) was characterised by a few pits and three postholes whose uppermost part had been eroded by natural agents. Pit HWE/B yielded a few sherds of a black burnished carenated pot with conical neck and no handles, the inside bottom of which was partly covered with bitumen incrustations (Cleuziou, Tosi n.d.). The lowlying stratigraphy was characterised by an anthropic layer rich in structural remains called **1** and by a layer of shells some 20 cm thick, **2**, lying above a series of thin charcoal levels separated by sterile ones interpreted as different moments in the development of layer **3**. Another layer of marine and coastal swamp molluscs was lying beneath layer **4**, separating it from layer **5**, very rich in postholes.

Several pits were discovered in layer **5a** as well as postholes and one C shaped canal. All the pits were circular in shape. Some of them were as deep as to reach the calcareous bedrock. Layer **5b** produced the most ancient structures consisting of three shallow pits, some postholes and part of a C shaped canal (fig. 4). They all were dug out into the bedrock.

The functional variability of the pits can be argued thanks to the study of their industrial and faunal assemblages and the nature of their fillings.

Particularly interesting in this respect was the excavation of layer **5a**. Here some of the pits were extremely rich in stone instruments such as hammers, anvils and waisted weights, some others contained only chipped stone artefacts or fillings of fish bones and shells with rare made-by-man material.

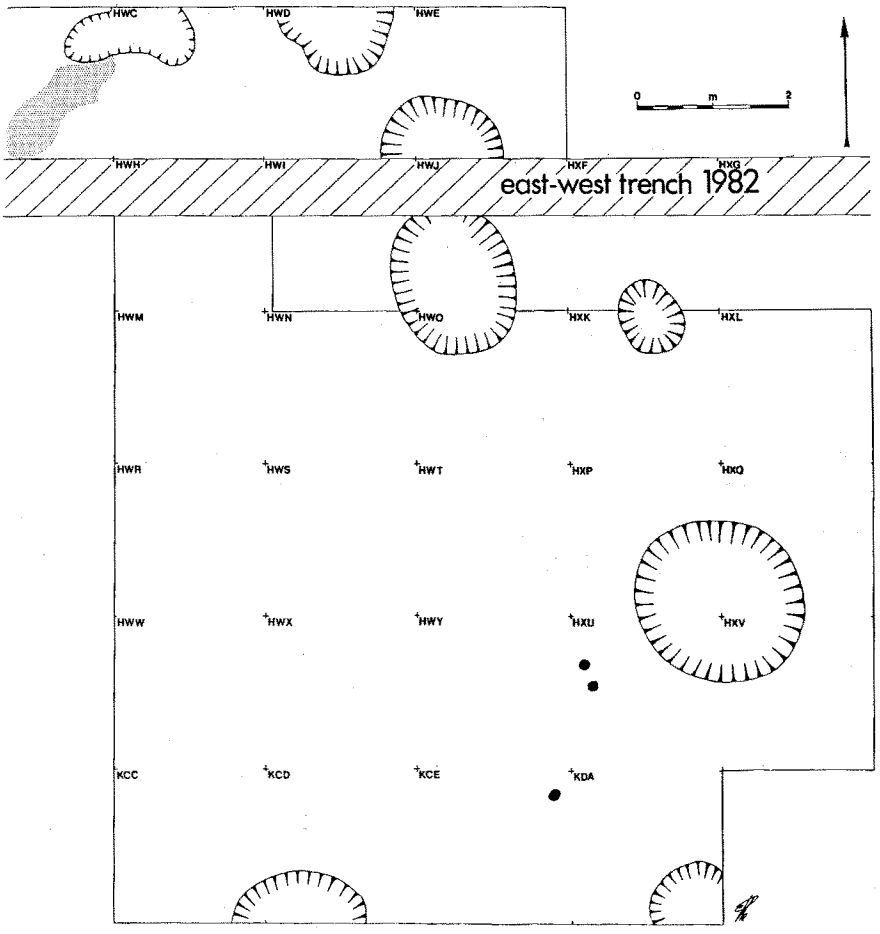


Fig. 3. – RH5. Plan of the excavation. Layer **0**.

An accurate examination of the bottom filling of these structures showed that they should have been opened well before their refilling as testified by a few centimetres thick level of pure beach sand often found at their bottom. This phenomenon has already been observed in the rubbish pits of many European Neolithic settlements (Buttler 1934; Lüning 1982) where their primary function should have been different from the secondary one (Bagolini, Balista, Biagi 1977). The periodisation of the settlement sequence of RH5, on the basis of the preliminary results of

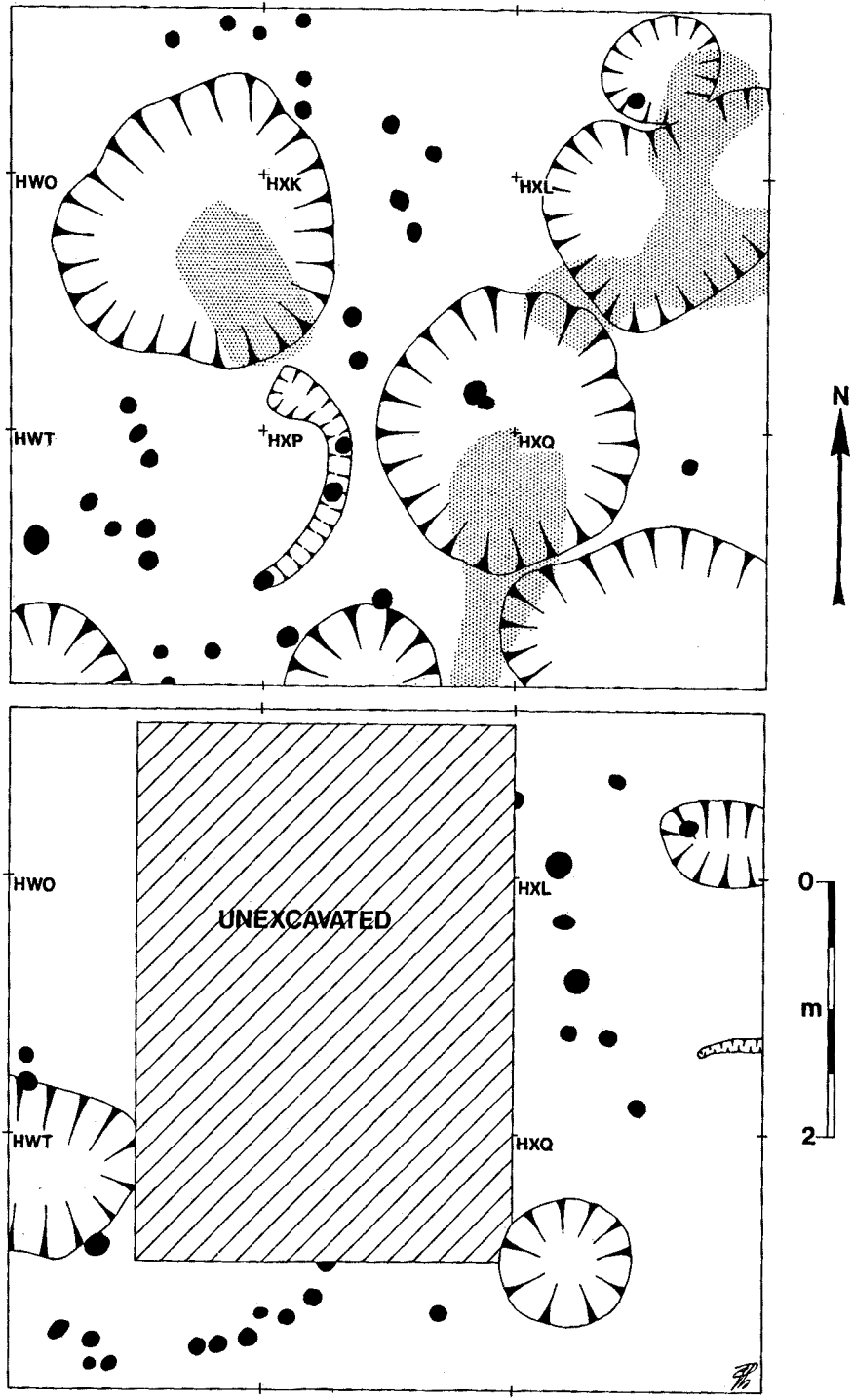


Fig. 4. – RH5. Plan of the excavation. Layer **5b** (below) and layer **5a** (above).

the latest campaign, should be as follows:

Layer **5b**: 1st settlement phase.	Bln-3149: 5480±60 (3530 BC)
Layer **5a**: 2nd settlement phase	
Layer **5**: 3rd settlement phase	
Layers **3d**, **3c**, **3b**: 4th settlement phase.	Hv-13198: 4835±70 (2885 BC);
	Bln-3147: 4920±50 (2970 BC).
Layers **3a**, **3**: 5th settlement phase.	Bln-3146: 4800±60 (2850 BC);
	Bln-3145: 4750±60 (2800 BC).
Layers **1b**, **1**: 6th settlement phase.	Bln-3144: 4900±50 (2950 BC);
	Bln-3143: 4880±60 (2930 BC);
	Bln-3168: 4840±60 (2890 BC);
	Bln-3141: 5030±60 (3080 BC);
Layer **0**: 7th settlement phase.	Bln-3140: 4760±100 (2810 BC)

It must be underlined that the above mentioned sequence seems to be valid only for the investigated area and cannot be extended to the entire site. Regarding the hut structures recovered, layer **1** produced a C shaped alignment of postholes which might be interpreted as part of a circular hut the eastern part of which was eroded by natural agents. Similar alignments have been recognised on the bedrock of layer **5b**. Many of the postholes dug out in to the various levels had one or more wedges on their walls, sometimes consisting of vertically positioned waisted weights and more rarely of marine mammal vertebrae.

Material culture

Many of the artefacts from RH5 are strictly connected with the exploitation of the marine resources of the Indian Ocean, both fishing and molluscs collecting and the hunting of marine mammals and turtles.

Fishing hooks from marine shells are rather common to the whole stratigraphy, while gorges polished from bone make their appearance at a rather late stage in the development of the series (figg. 6, 7). On the other hand, waisted weights are well known throughout the entire sequence. They consist of flat beach pebbles with bifacial notches at both the long sides.

A preliminary study of the chipped stone industry shows that the raw material exploited for making artefacts consisted mainly of jasper. The most typical instrument of RH5 was the «chisel» chipped from short blade or flake with well visible wear traces at the point (Gebel pers comm 1983; Biagi, Maggi, Nisbet, n.d.). This peculiar chipped stone industry seems to have been connected with highly specialised activities carried out at the site.

ARCHAEOBOTANICAL REMAINS (fig. 8).

Preliminary considerations on the vegetation surrounding the site and on the exploitation of the arboreal species have been possible thanks to the systematic collection of charcoal pieces from the archaeological

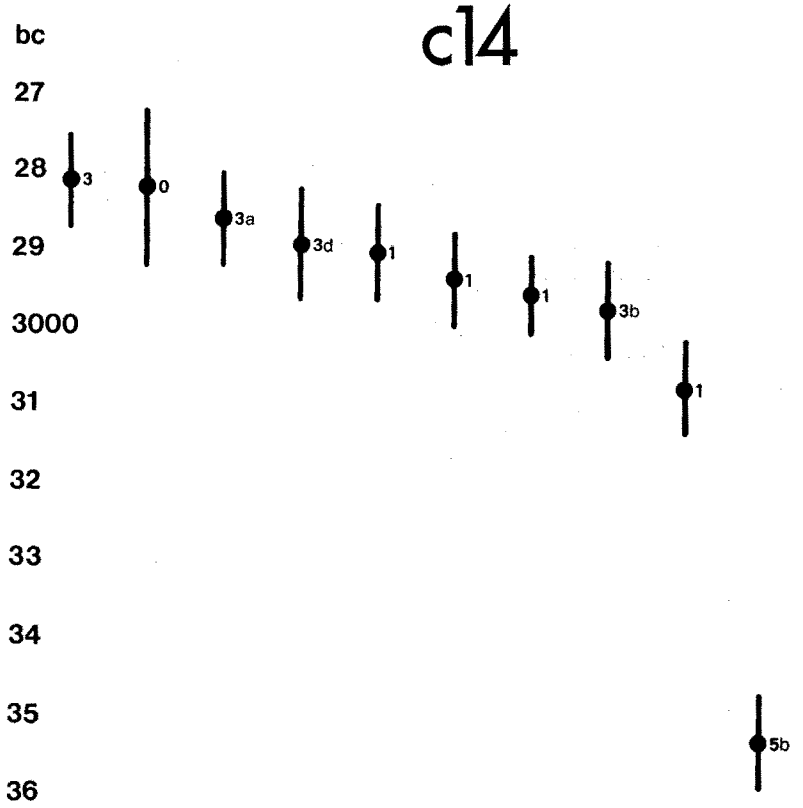


Fig. 5. – RH5. List of the radiocarbon dates to date available from the settlement site.

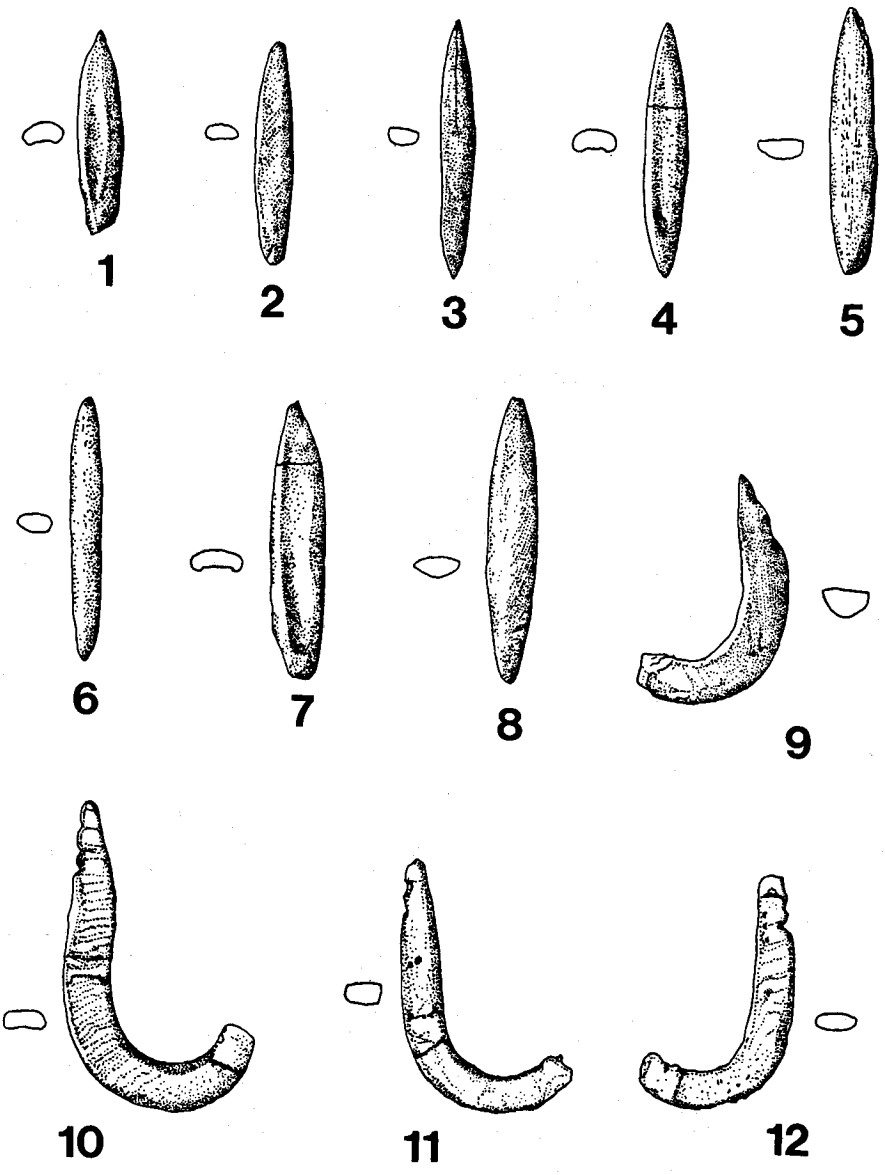


Fig. 6. – RH5. Fish hooks from shell (9-12) and gorges from bone (1-8) from various layers.

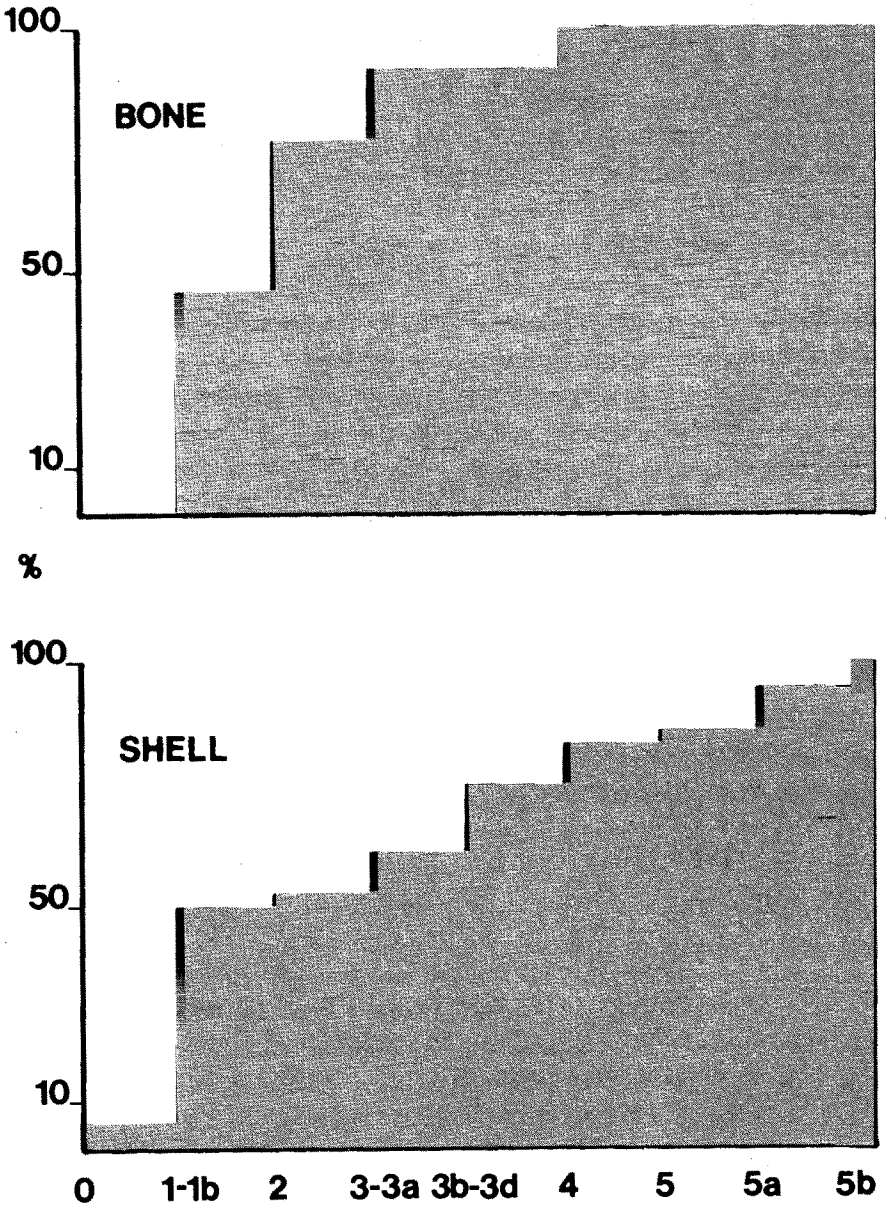


Fig. 7. – RH5. Cumulative diagrams of the shell (below) and bone (above) fish hooks.

levels. A more complete recovering was made during the last excavation season when a flotation machine was in use for one month.

Only 98 charcoal pieces have been identified so far. This number is considered to be insufficient to build up a valid picture of the ecological and climatic variations of the area in a period of some 700 radiocarbon years. Anyway the simple presence/absence of certain species gives some indications of the environment and economy of the fisher/gatherers of the Qurm area. Today four main ecological/vegetational belts can be recognised in the territory surrounding Ra's al-Hamra:

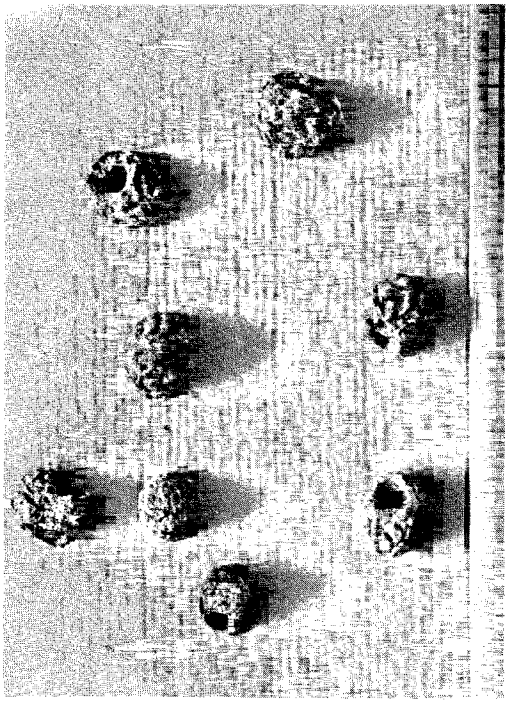
1) Tertiary calcareous terraces located along the coast. Their vegetation comprises small woody bushes including *Anabasis setifera*, *Abutilon pannosum* Schlecht., *Hammada salicornica* and *Salsola rubescens* as well as herbs like *Centaura pseudosinaica* and *Convolvulus prostratus*.

2) Sandy dunes with *Halopeplis perfoliata* Bge. ex Schweinf along the low coastland.

3) Coastal mudflats with a paralic swamp environment dominated by a mangrove forest whose main component is *Avicennia marina*.

4) Calcareous or sandy slopes with a loose vegetational cover of *Acacia* sp. Charcoal identifications have demonstrated that some of the environments surrounding the site were present when the first prehistoric fishermen settled on the cape. In fact the most ancient traces of anthropisation known from layer **5b** gave charcoal pieces of *Avicennia marina*, *Tamarix* sp. and *Zizyphus* sp..

A hearth from the overlying layer **5a** produced evidence of *Avicennia marina* and *Zizyphus* sp.. The same association has been ascertained in layer **5**. *Avicennia marina*, *Tamarix* sp. and *Chenopodiaceae* (possibly *Suaeda* sp.) come from layer **3c**, whilst *Avicennia marina*, *Tamarix* sp., cf. *Anabasis*, *Zizyphus* sp. and *Acacia* sp. have been recognised in layer **1**. The same species and small shrubs still growing locally have been found in the uppermost levels. These preliminary identifications show the continuous presence of the mangrove at the mouth of Wadi Aday, probably indicating a strong stability both in the coastal morphology and in the hydrological balance at least in the last five or six millennia. The same persistence of mangrove swamps has sometimes been demonstrated elsewhere by C14 datings as in the case of Southern Florida (Scholl, Stuvier 1967) of by archaeological speculations in coastal Peru (Pic-



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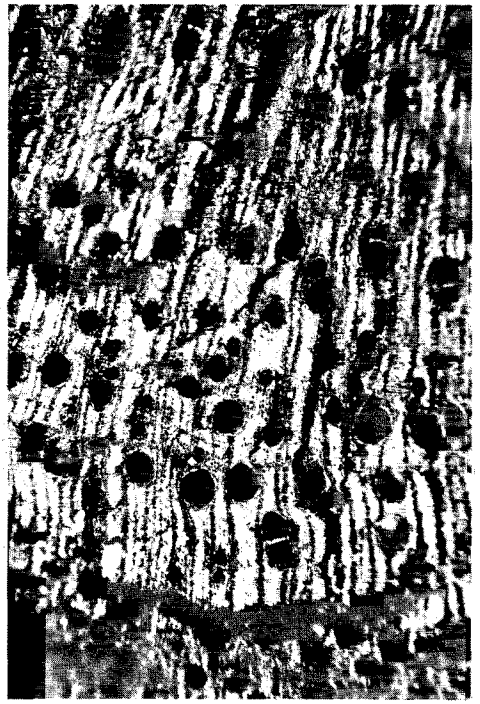

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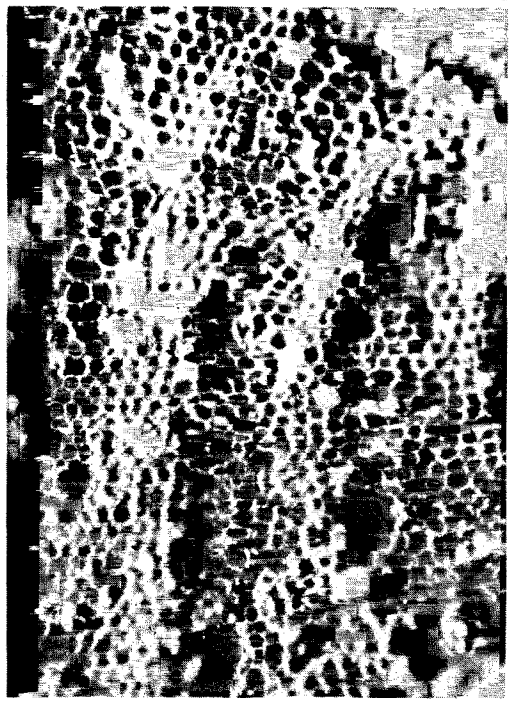

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Fig. 8. – RH5. Charred remains. *Zizyphus* sp. stones from layer **2** (× 1.7 ca.) (1), *Zizyphus* sp., transverse plane, from layer **3c** (× 30) (2), *Chenopodiaceae*, transverse plane, from layer **3c** (× 160) (3), *Avicennia marina* L., transverse plane, from layer **5** (× 60) (4)

kersgill, Smith 1981). The presence of charcoal pieces determined as *Acacia* sp. is extremely scarce, but it must be considered that the wood from this spiny tree is fibrous and very difficult to cut without the help of metal instruments.

Tamarix, and the *Chenopodiaceae* found in the charcoal samples are small trees or bushes still growing at Qurm. They probably furnished small sized wood for fire. An unsolved problem concerns the wood utilised for buiding the houses. Among the arboreal species present in the charcoal record only *Zizyphus* sp. has branches sufficiently long to be employed as posts. However this species has been recorded in very small quantities. It can be argued that its presence is strictly connected with the consume of its edible berries dozens of which were collected during excavation.

Avicennia might have been used for building but its cutting down necessarily implies the use of stone or metal axes which are totally absent at the site. The archaeobotanical assemblage also includes a high number of *Zizyphus* sp. seeds and fruits. They have been collected throughout all the sequence and this, with the data already known from Hili (Cleuziou, Costantini 1980; Cleuziou pers comm 1985), supports the hypothesis of a protodomestication of this tree.

Considerations

As strongly demonstrated both by the faunal and plant remains and the material culture assemblages, the shell/fish midden of RH5 had an almost absolute sea oriented economy. Fishing and coastal swamp and marine molluscs collecting were the main activities exploited at the site. The hunting of marine turtles was also important. While herrings and sardines might have been caught in some seasons very close to the shoreline by fine-meshed nets and baskets (Bintliff 1977: 117), tunnies, dolphins and other large marine mammals necessarily need the use of a boat to be hunted (Yesner 1980; 1981: 156). The use of fish hooks is attested by shell and gorges bone specimens. These latter are also known from Mediterranean neolithic and preneolithic coastal settlements like the Arene Candide cave (unpublished Genoa Museum) and Cap Andreas in Cyprus (Le Brun 1981: 195). Fishing nets might have been employed for

the hunting of marine turtles with a technique still in use along the coasts of the Indian Ocean (Frazier 1980: 331; Smith 1985: 331). Ethnographic parallels also exist in north western California as shown by Kroeber and Barrett (1980: 83).

Net weights are well documented throughout the whole sequence of RH5 and have also been collected in most of the Oman coastal sites surveyed in the last four years. These instruments are very common to some island and coastal mediterranean neolithic settlements like Saliagos in the Egean (Evans, Renfrew 1968: Pl LI) where the prehistoric diet was based on the capture of tunnies or where fishing was a complementary strategy and Leucate Corrège, in France (Guilaine, Freises, Montjardin 1984). Evidence of terrestrial domesticated and wild mammals occurs with the first traces of occupation in layer **5b**. Sheep/goats and cattle were reared, gazelles were hunted for meat; while there is evidence of equids and felins bones. Birds bones are extremely rare as are the rodentia.

It is difficult to say whether the settlement was occupied seasonally or all year round (Rowley-Conwy 1981) before a complete identification of the fish remains and an analysis of the marine shells by oxygen isotope (Deith 1983). However the abundance of *Zizyphus* sp. stones and fruits suggests that the site was certainly inhabited at least during the summer. What is interesting to observe is the absolute absence , of polished stone instruments with a cutting edge like adzes, axes and chisels which are thought to be necessary for making fishing boats and hut foundations.

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PAOLO M. COSTA and MAURIZIO TOSI

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