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**Department of Archaeology,  
Durham University**

# **THE ANCIENT BEADS OF BAHRAIN:**

**A Study of Ornaments  
from the Dilmun and Tylos Eras**

**- Volume I -**

**Waleed M. Al-Sadeqi**

## **The Ancient Beads of Bahrain:**

### **A Study of Ornaments from the Dilmun and Tylos Eras**

**Waleed M. Al-Sadeqi**

#### **(Abstract)**

This work represents the first in-depth study of the ancient beads of Bahrain ever attempted. It examines a select group of such beads, comprising a sample of 4,813 specimens recovered from various archaeological sites in Bahrain by means of excavation, in order to isolate their most essential features; that is, those aspects of the beads most crucial to an archaeological understanding and appreciation of ornaments of this sort. It then proceeds to describe and analyze these essential features whilst at the same time constructing a bead typology particular to the Bahrain Islands, something which had never existed before and which is made available through this work for the first time. Using both the essential features and the typology produced by them, the study then employs these as avenues through which it examines not only the cultural and socio-economic development of the Dilmun and Tylos eras (i.e., the Bronze and Iron Ages on the Bahrain Islands), but also the important role played by beads as markers of such development throughout these overarching chronological epochs.

**The Ancient Beads  
of Bahrain:  
A Study of Ornaments  
from the Dilmun and Tylos Eras  
(Vol. I of III)**

**Waleed Mohamed Abdulrahim Al-Sadeqi**

**Submitted for the degree of PhD in Archaeology**

**Department of Archaeology**

**Durham University**

**2013**



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# **PART I:**

# **BACKGROUND**

# CHAPTER 1

## **An Introduction to the Ancient Beads of Bahrain**

“May the land of Tukriš hand over to you gold from Ḫarali, lapis lazuli . . . . May the land of Meluḫa load precious desirable cornelian . . . . May the land of Marḫaši yield you precious stones, topazes . . . . May the wide sea yield you its wealth” (ETCSL, 2006a: t.1.1.1.49A-49P). Thus does the Sumerian myth of “Enki and Ninhurzag”, dating to the 3<sup>rd</sup> millennium BCE and inscribed upon cuneiform tablets, address the fabled land of Dilmun. The text brings to mind the wealth borne from shores near and far, and even from the sea itself, the bounty of the known world, to the land that was Dilmun. This was the legendary status held by Dilmun in its heyday: a place of plenty, a place blessed by the gods, a place that was the centre of economic activity in a region that participated in the trade between great nations such as Mesopotamia and the Indus.

Great wealth brings prosperity, and prosperity in turn brings luxury. One of the principal icons of luxury is personal adornment. Much of the jewellery associated with Dilmun, whether necklaces or bracelets, bangles or the minute ornaments found in embroidery, consisted of beads. And these were made of such materials as “gold”, “lapis lazuli”, “cornelian”, “topazes”, and such things as the sea provided, mentioned in the translated passage quoted above (see Pl. I). But where in Bahrain, as the heart of Dilmun is known in modern times, is the evidence of such luxury and the abundance called upon in the ancient Sumerian texts? What about the contribution of beads to social and economic life in the later portions of Dilmun’s long history or that of its subsequent guise as Tylos in the millennium before Islam? To answer these questions and others, one must look to the very beads that belong to the Dilmun and Tylos eras.



**Pl. I.** Some Early Dilmun beads of carnelian, highlighting one of the materials mentioned in the passage from the "Myth of Enki and Ninhurzag" quoted at the start of this introduction.

Over a century of archaeological work on Bahrain has produced numerous bead finds. The earliest excavation to do so was that of Colonel Prideaux in 1906-07 (Prideaux, 1984: 118). Sometimes the number recovered from a single archaeological context amounted to hundreds of beads. However, even with such examples of the wealth and adornment of Dilmun and Tylos, very little has hitherto been known about the ancient beads of Bahrain. Most such finds have been mentioned briefly in excavation reports, but then left to the confines of the museum storeroom. In some cases, they have been catalogued, photographed, and illustrated as part of a finds assemblage from a particular site (e.g. Ibrahim, 1982: 83-85, Pl. 56; Moon, 2005: 181-187, Figs. 5.9-5.11; Srivastava, 1991: 30-32, Pls. XLI-XLII). However, those that have been so treated are a minority compared to the vast numbers of beads that have escaped such treatment.

Certainly no in-depth analysis of Bahrain's ancient beads has yet been undertaken, and what attempts have been made towards commenting upon them has mostly been a matter of

description or else off-hand assumptions about connections with the Indus or elsewhere through the medium of particular materials such as carnelian. When something more was attempted, it often resulted in brief discussions of a particular type of bead, usually etched carnelian, and its archaeological manifestations on a regional level (e.g. De Waele and Haerinck, 2006; Lombard, 2000d: 178-187; Reade, 1979). No attempt has been made to look specifically at all the different varieties of beads found in Bahrain or what they mean in the context of antiquity upon the Islands.

Beads, however, are an extremely rich source of information about a particular culture. Given that they are not only wealth and status symbols, but also connected with personal use and trade, their implications are far-reaching. The best means of studying their implications would be through a bead typology particular to ancient Bahrain. Since no such typology yet exists, we will endeavour through the course of this study to examine Bahrain's beads in greater depth than has so far been possible and by so doing begin to assemble a veritable typology of Bahraini beads. Along the way, much light will be shed upon the various spheres in which beads participated in the days of Dilmun and Tylos, both within Bahrain and in relation to its ancient neighbours and trading partners. The role of beads in understanding the development of social complexity in Dilmun and Tylos as well as the economic environment of Bahrain's past and its interactions with other nations will be explained further. Even certain cases of minutiae such as possible interpretations of the significance of beads in the Snake Sacrifices of the site of Qala'at al-Bahrain will be explored.

Essentially, the beginnings of an in-depth study of Bahrain's ancient beads will be put forward (and not the final word on the subject, it should be emphasized). The bead typology produced by this work, specific to Bahrain in the Dilmun and Tylos eras as well as their subdivisions, will serve a need by creating a schema upon which to study Bahrain's beads. Its basic outlining in this work will, of course, substantiate and support additional analysis of the role played by beads in ancient Bahrain. The end result of this will be an understanding not only of the beads themselves and all contingent factors, but also their place in the Dilmun and Tylos eras and how this provides a greater perspective on Bahrain's social and economic development both within the archipelago and in association with its neighbours (the two are, of course, interrelated).



## **Goals of This Study**

The main aims behind this study may be set out as follows:

- 1) To achieve an analysis of the different aspects of the archaeological beads of Bahrain.
- 2) To apply the information gained from Bahraini beads to elucidating what we already know of the cultural and socio-economic development of Bahrain in the Dilmun and Tylos eras (an archaeological narrative) as already explored by other means (for instance, mortuary culture).
- 3) To develop a bead typology particular to Bahrain that will be of use not only in the analyses undertaken in this work, but to future projects attempted by archaeologists.
- 4) To visit the archaeological narrative of “aim 2” from the standpoint of the Bahrain Bead Typology to obtain an even greater understanding of the cultural and socio-economic development of Dilmun and Tylos.

## **Organization of This Work**

This work may be broadly divided into two portions. The first of these (of which this introduction is a part) will subsequently involve background information on the study of beads in archaeology as well as a presentation of the methodology behind the work undertaken. It will also include all explanatory information required for a full understanding of the dataset involved and the application of the methodology. The second and larger portion will concern itself with the fulfillment of the later aims of the methodology through actual analysis. Since the dataset being studied is a particular corpus of archaeological beads, the analysis will be focused on this corpus, contingent of course with the needs of the methodology and directed towards achieving the aims set out by it.

Amongst the sections to comprise the first portion of this work, Chapter 1 being this introduction, Chapter 2 will provide a brief overview of the archaeological study of beads since its inception, with the final part of the overview focusing on the Arabian Gulf region. Chapter 3 will outline the methodology employed by the study behind this work. Chapters 4 and 5 will respectively explain the major features of the ancient Bahraini beads used in analyzing the Dilmun and Tylos bead sample behind this study and set out the chronological system (and sub-system) that has been applied to said sample. The latter will be essential both

to placing the Bahraini beads in temporal contexts and understanding the archaeological narrative that is so central to second half of this work. Chapter 6 will conclude the initial part by providing an overview of the sites and types of burials from which the Bahraini beads were drawn, thus offering further contextual background (this time bearing on provenience) to facilitate subsequent analysis.

Chapter 7 will begin the second portion by introducing and analyzing the preliminary aspects of the Bahrain bead sample; that is, focusing on context, chronology, and quantity. It will then undertake an archaeological narrative of the Dilmun and Tylos eras solely from the standpoint of these aspects. Chapter 8 will add to the above aspects the additional features of material, colour, and diaphaneity. Together with the analysis already achieved in Chapter 7, in a cumulative fashion, it will then revisit the archaeological narrative to determine what additional light can be shed upon it after having involved these additional features. Chapter 9 will add to the above an analysis of beadmaking processes, perforation types, and bead shapes as they apply to the Bahrain sample. It will also explain the actual structure of the Bahrain Bead Typology, brought together through an amalgamation of several of the features already covered. The archaeological narrative will then be revisited in a cumulative fashion once again, but this time focusing not only on the aspects detailed in the chapter (such as beadmaking processes, etc.) but doing so primarily through an appreciation of the actual Bahrain Bead Types derived from the typology. Chapter 10 will provide concluding material, including an overview of what has been gained from an analysis of the various features of the Bahrain bead sample behind this work as well as the Bahrain Types themselves. There will also be an explanation of how our study of the beads has enriched our understanding of the Dilmun and Tylos eras on Bahrain as well as the socio-economic development of Bahrain throughout these. Finally, the role of beads in such understanding and development will be elucidated, so that these small finds may be acknowledged for what they truly are: markers holding intrinsic information on archaeological cultures such as those of Dilmun and Tylos, and crucial to our appreciation of them.

## **A Note on Figures, Plates, and Illustrations**

Owing to the organization outlined above, the figures, plates, and tables accompanying this work will not be provided throughout in a single sequential order. Rather, the first half of the text will have a particular sequence for these, whilst each of the three large

chapters of the second half (subdivided into sub-chapters) will have their own. The purpose behind this arrangement lies in making the numerous illustrations of each of these three chapters (because of their size) manageable and the numbers of the figures, plates, and tables of each aligned more specifically with the various sections subdividing them. The final chapter of the second half will also have its own sequence of figures, to avoid any confusion with those of the preceding three or the first part of this work.

## **CHAPTER 2**

### **The History of Beads in Archaeology: Ornaments Worldwide and in Bahrain**

Before we begin properly examining the beads of Bahrain or outlining the methodology associated with doing so, it is important to review, even if in brief, the previous work done on archaeological beads in general. This is essential, in order to place our work in the broad context of the tradition of bead studies, and also to appreciate what it is bringing to the archaeology of Bahrain. It will then be possible to move on to examining how beads have featured in Bahraini archaeology over the course of over a century (i.e., since the first ancient bead was recovered on the Islands by an excavator in 1906/07) (see Prideaux, 1984: 113, 123). In the next few sections, therefore, we will examine the contributions made by various individuals who have shaped bead studies and, in the process, delineate how such studies have developed over the course of the 20<sup>th</sup> century and beyond

#### **A Review of the Archaeological Study of Beads**

##### **- Horace C. Beck and the Beginnings of Bead Studies**

In 1913, a man by the name of Horace C. Beck, who had spent his life thus far working for R. and J. Beck, a family firm that specialized in optical apparatus, retired due to ill health (Hutchinson, 2003: xv). Following this, Beck began systematically examining beads and making copious notes as to their different styles and make. His own expertise with glass and optics was a great help in his endeavour to shed light on these ornamental objects (Hutchinson, 2003: xv).

The result of Beck's systematic work was his monograph entitled "The Classification and Nomenclature of Beads and Pendants" (1928). It contained a detailed categorization of bead types with which he had come into contact; a categorization, it may be added, which was quite extensive (Beck, 1928; Van der Sleen, 1973: 16). Moreover, Beck's monograph also made for the definition of such terminology as would come to embellish bead studies and provide it with a jargon all its own (Liu, 2003: 1). The charts that were included amongst the

pages of this publication were also of great import, in that they “brought some standardization to the chaotic or undisciplined manner in which beads were described,” as Robert Liu has explained (2003: 1).

Amongst his other writings, Beck’s various papers are of particular note. These include, amongst others, his examinations of beads from Asia and Rhodesia as well as his analysis of certain etched carnelian specimens (1930; 1931; 1933). Moreover, his *Beads from Taxila* (1999), a volume recently reprinted, has shed great light upon the materials and make of beads excavated from the specific site in question.

On the whole, Beck’s contributions to bead studies were monumental; and this despite being self-taught with regard to these small objects (Liu, 2003: 1). His influence in this domain has far outlived him (i.e., he died in 1941). In fact, up until the 1970s, Beck’s monograph (in two unauthorized printings), along with a prominent handbook authored by W.G.N. van der Sleen, were the only readily available works on beads for archaeologists, ethnographers, and bead-enthusiasts alike (Liu, 2003: 1).

#### **- Charles Leonard Woolley and the Ur Typology**

Well-known for his contributions to Near Eastern archaeology and his work at such sites as Tell el-Amarna, Carchemish, and Eridu, Sir Charles Leonard Woolley is best remembered for his excavations of the ancient Mesopotamian city of Ur (see Darvill, 2008: 508; Woolley, 1922; Woolley, 1934a; Woolley, 1934b). As part of his seminal publication describing these excavations, he included a typology of beads he had developed for employment in the field by archaeologists, deeming the extensive typology already developed by Beck as being too complex for practical use (Woolley, 1934b: 366-375). Whilst Beck’s system has remained the standard model in the archaeological study of beads, Woolley’s alternative has also proved influential. It has even been employed in at least three publications relating to the archaeology of Bahrain (see Crawford, Killick, and Moon, 1997: 111-112; Ibrahim, 1982: 83-85; Moon, 2005: 182, 186).

## **- W.G.N. van der Sleen: His Handbook**

Previous trends in bead studies that range from the archaeological and ethnographic to the analysis of materials used in the manufacture of these small objects were drawn into the work of a man who was to make notable contributions to such studies.

Dr. W.G.N. van der Sleen, this remarkable contributor, amassed a sizable collection of beads and travelled to various countries, some far apart, in the hopes of better understanding the different specimens that came to his attention. In illustrating his travels, one might mention his sojourn at Carthage in Tunisia, where he examined beads of glass and faience of Punic origin (see Van der Sleen, 1973: 65-67). His visit to Bali, where he discovered “typical Indian-red beads”, can also be deemed another example (see Van der Sleen, 1973: 99). He also spent some time in Amsterdam, where he studied the work of a 17<sup>th</sup> century glass-factory that produced beads in abundance, and Venice, where he observed firsthand the contemporary production of glass beads by certain techniques that were (in his time) gradually disappearing from use (see Van der Sleen, 1973: 13, 108-115).

Amongst his works on beads of different sorts, his papers specifically devoted to “trade-wind” beads (1956; 1963a) – called such by him due to their wide distribution by means of merchant ships whose commerce spanned South-East Asia, the Indian Ocean, and the East African coast – and a 17<sup>th</sup> century glass-factory in Amsterdam (1963b; 1963c) stand out. Other articles by Van der Sleen include those covering a variety of African and Indian Ocean beads (1955; 1958) as well as his examination of a bead collection in the Musée de Nîmes in France (1960).

Of course, whilst a great deal of his written work seems to concentrate on trade-wind beads (also known as Indo-Pacific drawn glass beads) and the Amsterdam factory, his overall familiarity with the subject of his handling led him to produce a most useful text entitled simply *A Handbook on Beads* (1973). The volume was prepared by the Committee of the J.I.V. as the first in its series of monographs on the production and collections of glass-materials (Harden, 1973: 11). Van der Sleen, being “a collector and traveller who had gathered and studied beads in almost every country in the world”, was commissioned by the Committee to prepare the text in question (Harden, 1973: 11). The author himself, however, does state in the introduction to that work that, in meeting with people interested in beads during his travels, he was informed of “the need of a Handbook where the few things known about this material were collected, and that is why I began the writing of this book” (Van der

Sleen, 1973: 13). His work was invaluable in its own right and was one of the few publications on archaeological beads, along with the earlier of the two unauthorized reprints of Beck's monograph, that were widely available during the 1970s (Liu, 2003: 1).

#### **- Julian Reade and the Mesopotamia-Indus Commercial Beads**

In a small work published by the British Museum and focusing on the role played by beads in the commercial relations between Mesopotamia and the Indus, Julian Reade provided a specialized typology of the specimens he was dealing with (see Reade, 1979). These were primarily carnelian and etched carnelian beads. Owing to this material focus, Reade's work may be deemed especially important to Bahrain in particular, since the Islands took part in the maritime trade between the two regions emphasized in his text (see Weisgerber, 1986: 139). However, because his text revolves around certain materials, does not take into focus more recent discoveries in bead and Near Eastern archaeology (having been published in 1979), and is not specifically geared towards an examination of Bahraini beads, a proper study of the Islands' specimens is still required, which requirement the present work attempts to meet.

#### **- Peter Francis, Jr.: His Contributions and the Centre for Bead Research**

Early on in his life, Peter Francis, Jr. developed an interest in beads and this led him to study numerous specimens from around the world, travelling extensively to do so (Francis, 2002: vii-viii). He founded the Center for Bead Research, this being in 1979, and became its director (Francis, 2002: vii). He also put together and ran TheBeadSite.com, which became a hub for archaeological bead research on the internet (see Francis, 2013). His publications include *Beads of the World* (1999) as well as *Asia's Maritime Bead Trade: 300 B.C. to the Present* (2002), both of which are major textbooks in their field. His articles, on the other hand, comprise a multitude of a few hundred, spanning subjects as diverse as the study of Early Islamic commerce via beads at four emporiums of that era (1989) to bead manufacture at the Indian site of Arikamedu (1991). Peter Francis, Jr. was consulted for his expertise by many individuals, archaeologists included, who have worked with beads (Glover, Brock, and Henderson, 2003: xiv). In 2002, much to the dismay of the worldwide community of bead researchers, Peter Francis, Jr. passed away whilst on a study-venture to Ghana (Glover, Brock, and Henderson, 2003: xiv). "His monument," it has been stated, "lies in his books,

papers and in the memory of his numerous friends world-wide” (Glover, Brock, Henderson, 2003: xiv). This is indeed the case, as the work of the Center for Bead Research continues, much after the fashion of other institutions of its kind, and the influence of Peter Francis, Jr. remains unabated in its effect upon bead research.

## **The Ancient Beads of Bahrain Prior to This Study**

### **- Bead Archaeology and Bahraini Archaeology**

The above excursion into the history of bead studies had, for its primary goal, an illustration of the history of the discipline. This is especially important with regard to determining the development of the discipline prior to the present undertaking, which takes it in a particular direction: that of the archaeology of Bahrain. Nonetheless, the history of bead archaeology that has been given may be regarded as a sketch, a brief reckoning of notable individuals and their work. It is by no means complete. It does, however, serve the purpose of the present chapter and provides us with an overview of the discipline up to recent years. Having elucidated the same, this chapter will now turn to examining the recovery of ancient beads by archaeological ventures in Bahrain.

It is important to bear in mind that, prior to the work undertaken to prepare this volume, Bahraini beads were never adequately or extensively studied (that is, in any specialized fashion). Occasionally they were mentioned in connection with other aspects of beads in the Arabian Gulf or given brief treatment under the umbrella of jewellery (see De Waele and Haerinck, 2006: 33-34; Lombard, 2000d). For the most part, however, they remained relegated to collections of finds and were illustrated in works associated with excavations in Bahrain, but not analyzed beyond these.

In the following sections of this chapter, because of the explanation just given, we will not be examining any in-depth analysis made of beads in Bahrain but rather some of the archaeological ventures undertaken that have produced Bahraini beads. The chronological designations as well as the sites (see Chapter 3, Fig. 1 for the locations of these) to which reference shall be made will be presented more fully in Chapters 5 and 6 respectively. It should be borne in mind that the coverage of the following sections will not be comprehensive, but rather will include only the more prominent published efforts that have contributed beads to the present study.



## **- Beads in Bahraini Archaeology: The Earliest Reference and the Danish Expedition**

The first beads recovered from an archaeological context in Bahrain were two specimens discovered by Colonel F.B. Prideaux during his 1906-07 excavation of one of the Royal Mounds at the site of 'Aali (Prideaux, 1984: 113, 123). However, the earliest bead obtained in Bahrain that has since been properly documented was discovered by the Danish Expedition. The Expedition excavated on the Islands from 1954 to 1970, for another year in 1978, and has resumed its work there in the last decade (see Bibby, 1986a: 108; Andersen, 2003a: 7; Højlund and Andersen, 1994a: 9-12; Højlund *et al.*, 2005). The bead referred to was of agate, "pierced laterally", and was discovered at the site of Qala'at al-Bahrain in 1954 amidst the burial assemblage of a "bath-tub" coffin, so named because it was shaped thus (Højlund, 1997i: 145, Fig. 687). The burial was uncovered during the digging of a *sondage* by P.V. Glob in the central monumental section of the site that would eventually expand into the Danish Expedition's Excavation 519 (Bibby, 1996: 66-67; Glob, 1954c: 167-168; Højlund and Andersen, 1994a: 9-12; Nayeem, 1992: 115). With regard to Excavation 520, the investigation into that particular area of Qala'at al-Bahrain also yielded a number of intriguing specimens (Højlund, 1994c: 391-394, Figs. 1941-1984). Considering the entire site as a whole, the bead finds recovered by the Danish Expedition at Qala'at al-Bahrain may be summarized thus: 255 beads were discovered at the site, of which 214 were from Excavation 519 and 41 from Excavation 520 (see Højlund, 1994c: 391-394; Højlund, 1997b: 36; Højlund, 1997h: 134-144; Højlund, 1997i: 145, 154-157; Højlund, 1997k: 199).

The Danish Expedition also performed regular investigations of another site in Bahrain: the Barbar Temples (Andersen, 2003a: 7-21). A great many finds were thus obtained, and from amongst these a small number of beads (six, to be exact) representing such materials as limestone, carnelian, lapis lazuli, turquoise, and a tin alloy (Højlund, 2003b: 275, Fig. 726; Højlund, 2003c: 316-317, Fig. 815, Fig. 817, Figs. 820-822). The nearby North-East Temple yielded five more beads, all of carnelian with the exception of a single example of lapis lazuli (Højlund, 2003c: 316-317, Figs. 823-827).

Although the Danish Expedition did excavate at other sites on the Bahrain Islands, some of these quite notable (e.g. Umm es-Sejjur), their only other published excavation whose beads have been incorporated into our study is that of their "rescue" work upon a number of Dilmun burial mounds not far from where the modern village of 'Aali is situated.

Six mounds yielded beads in the northern of the two tumulus patches given rescue-attention, which was designated “Group A”. Of these, two beads were found in each of three mounds (215, 220, and 223 respectively), whilst each of the other three beads were found in individual burials (207, 211, and 214) (Højlund, 2007: 71, 76, 81, 83, 89, 91). The beads all belonged to the Early Dilmun period and were of carnelian.

#### **- Beads in Bahraini Archaeology: The British Contributions of the 1960s and 1970s**

In the 1960s, alongside the work of the Danish Expedition, Captain Robert Austin Higham undertook the excavation of a number of ancient burials in Bahrain, amongst them his Graves 36 and 42 which yielded 38 and 5 beads respectively (During Caspers, 1980: 13-15, 19, Pl. XXIII, Pl. XXIX, Pl. XL). The first group contained specimens of banded agate, amethyst, transparent quartz, and carnelian (amongst other materials), whilst the second was comprised solely of carnelian and banded agate beads. Captain Higham also undertook the excavation of a Tylos burial (Grave 46) at 'Aali that produced 75 regular beads, many of which were made of glass, as well as a bird-shaped pendant (During Caspers, 1980: 12-13, Pl. XXIII). All of the beads found by Captain Higham are currently housed at the British Museum, London (During Caspers, 1980: 2).

In 1968, another “amateur archaeologist”, Mrs. E.P. Jefferson, carried out the investigation of two Dilmun mounds in that region of the central island of Bahrain designated Hamala North (During Caspers, 1980: 2-6). One of the tumuli yielded two beads; both were of banded agate and could be ascribed, via their provenience, to that particular period in which the mounds originated (During Caspers, 1980: 6, Pl. VII). In 1969, Mrs. Jefferson donated the beads to the British Museum, London (During Caspers, 1980: 2).

In the decade following the excavations of Captain Higham and Mrs. E.P. Jefferson, additional bead finds were made that have since been published. The British Expedition carried out its work in Bahrain between the years 1973 and 1978 (Roaf, 2003a: 7). Its excavations at the Diraz Temple produced a number of beads dating to Early Dilmun (Roaf, 2003b: 28). In 1975, the British Expedition also uncovered beads from a site in Bahrain contemporary with the Late Ubaid period in Mesopotamia; three such beads, two of shell and one of fish otolith, were discovered at al-Marakh in the north-western part of the main island of Bahrain, at what evidently was the location of ancient marine exploitation (Roaf, 2003a: 8-9). These beads were found in Trenches J19, J20, and J21 respectively (Roaf, 2003a: 8-9).

## **- Beads in Bahraini Archaeology: The Arab and 1980-82 Excavations**

In the late 1970s, the suggestion of building a causeway linking Bahrain to Saudi Arabia provoked a pan-Arab effort in investigating a significant number of the burial tumuli at the site of Saar that would be removed by such construction (Ibrahim, 1982: 4). For two seasons, from March 1<sup>st</sup> to April 30<sup>th</sup> of 1977 (with four additional weeks assigned to the excavation of Mound 404) and for four months in lieu of the start of the second season on October 1<sup>st</sup>, the Arab Expedition opened 61 mounds as well as made a cursory examination of the Southern Burial Complex at Saar, which it had discovered in the course of its excavations (Ibrahim, 1982: 4, 7). In total, 118 beads were found in 16 different contexts in the course of the two seasons of excavation at Saar (Ibrahim, 1982: 36, 83-85, Fig. 46, Pl. 54, Pl. 56). Some of the materials involved were agate, carnelian, lapis lazuli, shell, and (in three cases) bronze. In his account of the excavations, Dr. Moawiyah Ibrahim, who led the Arab Expedition, employed Sir Charles Leonard Woolley's Ur typology to describe the beads (1982: 36, 83-85).

Between 1980 and 1982, a team led by Dr. M. Rafique Mughal visited Saar following the excavations referred to above as well as a similar one by the Bahraini Department of Antiquities (Mughal, 1983: 4). This new expedition undertook the proper examination of Saar's Southern Burial Complex (Mughal, 1983: 4-5). What was uncovered, however, was quite different from the burial mounds that had hitherto been the focus of excavations at Saar. A series of "honeycomb" graves, burials attached to the semi-circular wall of another and themselves possessing such a semi-circular "edge", were stumbled upon; these were of a date similar to the burial mounds of the Arab Expedition, as the finds discovered in them attest (Mughal, 1983: 17-21). Nonetheless, the significance of the renewed excavations at Saar (as far as the present study goes) lies in its contribution of at least an additional 92 beads (based on original excavation reports, though the published account mentions only 87) to the collection that had been obtained at Saar by Dr. Mughal's predecessors (see Mughal, 1983: 68-69, 75-108, 113-114, Figs. 28-29). The array of materials in which the 92 beads came included, amongst other substances, banded and regular agate, banded and regular carnelian, paste, and shell (Mughal, 1983: 68-69, 75-108, 113-114, Figs. 28-29).

## **- Beads in Bahraini Archaeology: The French and Indian Excavations**

Whilst the excavations at Saar were taking place at the end of the 1970s and the beginning of the 1980s, another important expedition was also examining various sites upon Bahrain. Amongst the burial fields examined by the French Archaeological Mission were those of Janussan and Umm Jidr (Cleuziou, Lombard, and Salles, 1981: 21; Frifelt, 1986: 127; Mughal, 1983: 3; Salles, 1986). At the latter, which is the southernmost burial field upon Bahrain, tumuli were opened and three softstone beads obtained; one was found in Tomb 1a, whilst two came from Tomb 1b of Mound 1 (Cleuziou, Lombard, and Salles, 1981: 25-26, 28, Fig. 15). The French Archaeological Mission also carried out other significant excavations in Bahrain during the 1980s, including an investigation of burials at the site of Karranah (during which a large number of beads were recovered) in 1986 and 1987 (see Appendices 1a-1b).

Many beads were also recovered by the Indian Expedition led by K.M. Srivastava, which excavated in Bahrain from December of 1984 to the end of May 1985 (Srivastava, 1991: 1-4). About 250 beads were collected from the rescue work of the Indian Expedition at Hamad Town, though only 115 were referred to and 44 depicted in the published account of the excavations (see Srivastava, 1991: 30-32, Figs. 58-59A, Pls. XLI-XLII). Of these, 76 were of terracotta, 18 of shell, with the rest including but not limited to such materials as agate, carnelian, transparent quartz, and steatite. Conspicuous was the fact that the vast majority of beads obtained by the Indian Expedition was of terracotta (i.e., fired clay). No other excavation has produced this kind of bead as an overwhelming majority.

## **- Beads in Bahraini Archaeology: The German Expedition and the London-Bahrain Archaeological Expedition**

In 1992 and 1993, a German archaeological expedition carried out excavations at Karranah, investigating a mound containing Tylos graves. Though a preliminary account of the German Expedition's work has been published, no beads from the endeavour has been specifically documented in it though a general mention of bead finds has been made (see Herling, 1994). The author of this volume has nonetheless been able to study the beads from Mound 1 at Karranah firsthand (i.e., they will be examined in this work).

Beginning in 1990, prior to the German Expedition's endeavour, and for an entire decade, another team dubbed the London-Bahrain Archaeological Expedition carried out

excavations at the site of the Saar Settlement in Bahrain. The Saar Temple, which dominated the site, was built of local stones set in plaster (Farid and Killick, 1997: 23; Killick, 2000: 93; Moon *et al.*, 1995: 142). In addition to its three buttresses, three pillars, and four altars (two within and two without), the Saar Temple provided the London-Bahrain archaeologists with a number of intriguing finds (Killick, 2000: 93-94; Killick and Crawford, 1997: 91; Nayeem, 1992: 192). Amongst them was a single “squashed” ovoid bead of bitumen, another of banded agate, and specimens of glass (Crawford, Killick, and Moon, 1997: 111-112; Moon, 1997: 63; Moon, 2005: 182, 186).

The London-Bahrain Archaeological Expedition also laid bare a large section of the area about the two main roads that converged by the Saar Temple (Crawford and Moon, 1997: 20). The area was apparently marked by a number of “blocks”, each for the most part containing “L-shaped” houses, as well as a well and a warehouse (Crawford and Moon, 1997: 20; Killick, 2005: 7; Nayeem, 1992: 165; Woodburn and Crawford, 1994: 89, 104). 100 beads were recovered from the Settlement proper (Moon, 2005: 180-187, Figs. 5.9-5.11). At times, a large quantity was discovered within a single building at the Settlement; such was the case with the 16 beads uncovered in Building 220 or the nine examples obtained from Building 224, these being respectively in Areas 331 and 316 of the Settlement (Moon, 2005: 182-187, Figs. 5.9-5.11). The beads were of banded and regular carnelian, banded and regular agate, clay, glass, transparent quartz, shell, and other materials (Moon, 2005: 180-187, Figs. 5.9-5.11). All Early Dilmun specimens, the beads are now stored at the Bahrain National Museum. In publication, they have been described (like most from the Saar Temple) using Woolley’s typology (see Crawford, Killick, and Moon, 1997: 111-112; Moon, 2005: 182, 186).

### **- Beads in Bahraini Archaeology: Following the Turn of the Millennium**

Though they had briefly resumed excavating at Qala’at al-Bahrain for a single season in 1978, it was not until 2004 that the Danish Expedition would see a proper return to Bahrain. In that year, it revisited the site of the Barbar Temples (Højlund *et al.*, 2005: 105). The bead specimens from that 2004 venture will not be examined as part of this work (see the next chapter), though three from the Danish Expedition’s 2007 excavations of elite burials at the site of Wadi as-Sail will be (see Højlund *et al.*, 2005: 122-124, Figs. 34-35; Højlund *et al.*,

2008: 149, Fig. 17). The three specimens include two of glass and a single mollusc shell bead (Højlund *et al.*, 2008: 149, Fig. 17).

In the last decade, in addition to the renewed Danish excavations, two volumes were released that focus on Tylos burial assemblages, primarily obtained through the excavations of the Bahraini Department of Antiquities and the Bahrain National Museum. The first volume (Andersen, 2007) details the pottery and glassware from various graves, analyzing them and providing a chronology of the burials based on such items. The second (Salman and Andersen, 2009) comprehensively covers the Hamad Town DS 3 and Shakhoura Tylos cemeteries of Bahrain. It is in the latter work that a great many beads, deriving from the Bahrain National Museum's excavations at the two afore-mentioned sites in the early 1990s, have been catalogued as part of the burial assemblages under study (see Salman and Andersen, 2009: 82-84, 111-141, 145-146). The beads represent different materials, such as carnelian and shell, though the most widespread of all is glass. These items form the largest selection of Tylos specimens published prior to what is being undertaken herein; however, they have not been analyzed but simply listed, described, and illustrated at best or else only summarily photographed.

#### **- Beads in Bahraini Archaeology: Continuing Work and Omitted Expeditions**

New ventures of discovery as well as bead specimens have been constantly provided by those who have delved into the country's past in recent years. This continues to be the case. The Bahrain National Museum, for example, still undertakes regular rescue excavations of burial mounds and recovers archaeological beads, much as it has since its inauguration in 1988, even as its predecessor, the Bahraini Department of Antiquities, had done since 1970 (see Ibrahim, 1982: ix; Rice, 2003: 5-6; Vine, 1993: 3).

There are also other visiting expeditions that have not been mentioned in the overview of "beads in Bahraini archaeology" provided above; their omission was primarily due to the scarcity of published material that sets their role clearly within the context of Bahraini archaeology. Such missions are exemplified by those from Australia, Tunisia, etc. Their beads, however, will be taken into consideration in this study.

# **CHAPTER 3**

## **Methodology**

### **An Outline of Methodology**

In this chapter, we will outline the basic methodology behind the Bahrain Bead Project; that is, our project to study the Dilmun and Tylos beads of Bahrain and achieve the aims set out in Chapter 1. We will also explain the direction that will be taken by the subsequent parts of this work. A brief overview of the methodology can be set forth in point form as a series of steps as follows:

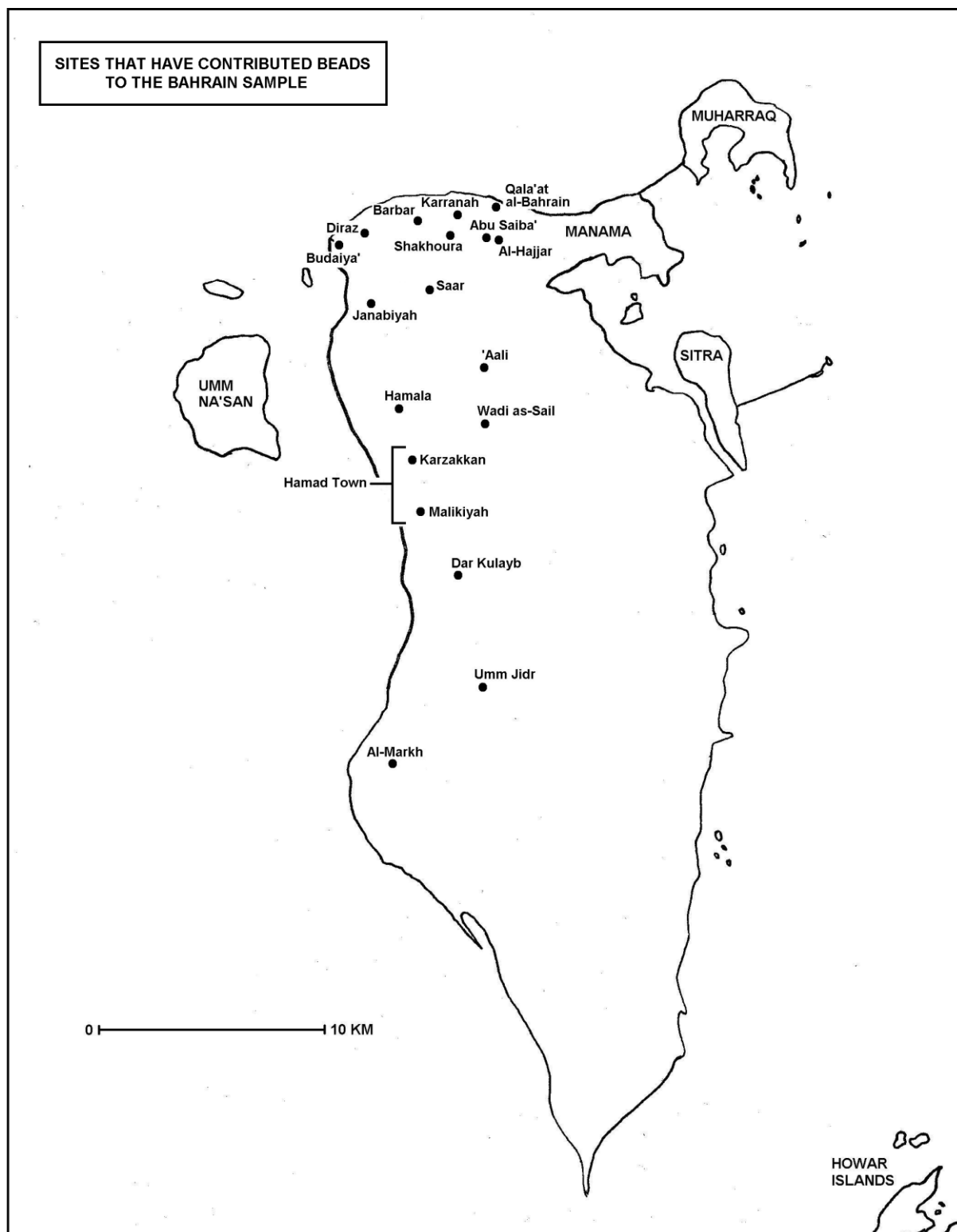
- 1) Isolate the major features required for understanding a corpus of archaeological beads amongst a collection of Dilmun and Tylos specimens.
- 2) Employ certain of these features in the development of a bead typology particular to Bahrain.
- 3) Analyze the features described in “step 1” above in order to obtain a greater understanding of the Dilmun and Tylos bead corpus.
- 4) Apply an understanding of the features in “step 1” to an archaeological narrative of Bahrain, organized chronologically, in order to clarify the role played by such features (and beads in general) in such a narrative alongside the cultural and socio-economic development of Dilmun and Tylos as exhibited by their beads.
- 5) Apply the bead typology obtained via “step 2” above to the same archaeological narrative of the Dilmun and Tylos eras, thereby better understanding the role played by bead types in the narrative alongside the additional light shed upon the cultural and socio-economic development of ancient Bahrain when tackled from the standpoint of these types.

### **The Bahrain Sample**

In order to fulfill the above steps, however, the first prerequisite is acquiring a “collection of Dilmun and Tylos specimens” as referred to in “step 1”. A sample of this kind,

unlike isolated cases, will provide a firm basis for any deductions made about the beads of Bahrain. It is granted that the scope of the present study will not allow for so great a sample as to cover every bead type or variation of type encountered on Bahrain, even if this were a possibility (as it most assuredly is not). Nonetheless, any sample, in order to be seriously considered, needs to be large enough to minimize the chances of error and put exceptions in their proper place and perspective. To this end, a sample of 4,813 beads was accumulated for study, spanning 17 sites across Bahrain (see Fig. 1). This total of 17 sites does not include the sub-sites that contribute to the size of each and which have also been taken into consideration in the analysis of the beads' proveniences. The corpus of beads obtained has been termed the "Bahrain sample" and will be referred to as such in most cases throughout this work.





**Fig. 1.** The locations of the 17 sites in Bahrain that have contributed beads to the Bahrain sample.

A “B-number” was assigned to each of the 4,813 beads in the Bahrain sample. These are Bahrain Bead Project numbers, and range from B1 to B4813. The B-number represents a particular bead’s place within the sample of such small finds from Bahrain, and can be employed to identify that bead within the sample. Beads can thus be adequately referred to by their numbers. Initially “C-numbers”, the “C” standing for the term “Collection”, were also employed to represent various groupings of beads, found together and seemingly indicative of bracelets or necklaces. However, since many of the bead collections studied were arbitrarily arranged – and this, for instance, has been noted by the British Museum with regard to the beads it holds from Captain R. Higham’s excavations – it was deemed unnecessary and unfeasible to continue this practice (see Pl. II).



**Pl. II.** The Tylos beads from Captain Higham's Grave 46, comprised mostly of glass specimens. They have been registered at the British Museum, London, under the number BM2693.

Moreover, all beads held by the Bahrain National Museum and studied firsthand, forming the majority of the sample of 4,813 beads, possess specific numbers according to the system employed to organize the finds at that museum. The use of these “A-numbers” has already been observed by Søren Andersen, representing an innovation at the time of his research though currently in full use at the Bahrain National Museum (see Andersen, 2007: 14). These A-numbers are attributed to distinct groupings of finds excavated together (i.e., find collections). In cases where A-numbers are not available (for instance, with beads from the British Museum or those with information obtained from publications rather than firsthand), alternative registration numbers have been noted according to the system used by the institution or publishing body in question. These registration numbers (A-numbers included) provide some indication of which beads were recovered alongside particular other specimens, thereby fulfilling the very role originally intended for the C-numbers referred to above. The usefulness of having indications as to which beads were found together makes for the possibility of studying such collections and obtaining further insight into the function and role of beads in ancient Bahrain.

The Bahrain sample may itself be divided into two categories: those of published and unpublished specimens respectively. The published specimens which are included in the sample amount to 910 beads. They cover most (though not all) of the archaeological beads of Bahrain that have hitherto been published; the exceptions are usually cases where only minimal information or a photograph with unreliable quality for further analysis has been published. Some exceptions, however, have also been made due to limitations on time and the need to finalize the parameters of the dataset being worked with so that analysis could be undertaken (e.g. some beads in catalogue of objects at the Bahrain National Museum as well as those recovered from the latest excavations at the Barbar Temples) (see Cleuziou, 1989: 35; Højlund *et al.*, 2005: 122-124, Figs. 34-35; Lombard, 1989: 79). The details of most of the published beads were obtained directly from the archaeological publications themselves, since in many cases it was impossible to track down specific beads for firsthand examination.<sup>1</sup>

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<sup>1</sup> The published beads were derived from the following: Cleuziou, Lombard, and Salles, 1981: 25-26, 28, Fig. 15; Crawford, Killick, and Moon, 1997: 111-112; During Caspers, 1980: 6, 12-15, 19, 39, 40-41, Pl. VII, Pl. XXIII, Pl. XXIX, Pl. XL; Højlund, 1994c: 391-394, Figs. 1941-1984; Højlund, 1997b: 36, Fig. 95; Højlund, 1997e: 73, Fig. 301; Højlund, 1997h: 134-144, Fig. 633, Fig. 642, Fig. 645, Fig. 648, Fig. 651, Fig. 653, Fig. 654, Fig. 656, Figs. 659-660, Fig. 662, Fig. 665, Fig. 669, Fig. 677, Fig. 679, Fig. 681; Højlund, 1997i: 145, 154-157, Fig. 687, Figs. 723-724, Figs. 727-728; Højlund, 1997k: 199, Fig. 850; Højlund, 2003b: 275, Fig. 726; Højlund, 2003c: 316-317, Fig. 815, Fig. 817, Figs. 820-827; Højlund, 2007: 71, 76, 81, 83, 89, 91, Fig. 115, Fig. 133, Fig. 149, Figs. 157-158, Figs. 180-181, Figs. 187-188; Højlund *et al.*, 2008: 149, Fig. 17; Ibrahim, 1982:

Again, however, exceptions exist. Certain collections, for instance, such as the beads excavated by E.P. Jefferson, Captain R. Higham, and the British Archaeological Expedition were examined firsthand and their details noted alongside similar information provided for other beads in the Bahrain sample (see During Caspers, 1980: 6, 12-15, 19; Roaf, 2003b: 28). Most of the published beads (that is, 837 out of the 910 specimens), however, were covered adequately enough in their respective publications to allow them a level of detailed information comparable to their counterparts that were looked at firsthand. Those that were not so covered were included along with what information was available on them from the published sources. When information of a certain sort was lacking, this was noted.

Unpublished beads that form part of the sample from Bahrain, all of which were examined firsthand, add up to the remaining 3,903 beads of the 4,813 total; that is, they form the great majority of the Bahrain sample. They are as complete in their recorded details as possible. The only cases in which this is lacking are those that deal with certain aspects of the beads which were decidedly included as a factor to examine “during”, rather than “before”, the sampling of the beads. Attempts have been made to obtain this sort of information for beads sampled prior to the decision to include such factors by other equally reliable means where possible. Such means have included resorting to photographs of the said beads, or other related details that have been recorded and which might shed light on the factors being sought. However, if the required information proved still elusive, then this lack was simply noted for the beads in question. It should also be pointed out that excavation reports stored at the Bahrain National Museum were examined for some of the unpublished beads (as well as published ones) stored at that institution in order to obtain as much background information regarding them as possible.

## **Isolating and Studying the Essential Features of Bahrain’s Beads**

The putting together of a sample of ancient beads from Bahrain, however, is essentially a means of not only studying individual specimens or collections thereof, but also of reaching an understanding of the different types of beads involved. In other words, it is a means to a typology. But in order to arrive at a typology, it is necessary to first isolate the

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36, 83-85, Fig. 46, Pl. 54, Pl. 56; Moon, 1997: 63; Moon, 2005: 180-187, Figs. 5.9-5.11; Mughal, 1983: 68-69, 75-108, 113-114, Figs. 28-29; Prideaux, 1984: 113, 123; Roaf, 2003a: 9; Roaf, 2003b: 28; Salman and Andersen, 2009: 82-84, 111-141, 145-146, Figs. 150-154, Figs. 241-243, Figs. 268-270, Figs. 289-293, Figs. 305-311, Fig. 321, Fig. 332, Tab. 29, Tab. 38, Tab. 50; Srivastava, 1991: 30-32, Figs. 58-59A, Pls. XLI-XLII.

major features required for an understanding of the beads according to “step 1” of our methodology above. Of course, these cover various factors that set a bead apart from similar ones. These are what would be called to mind when attempting to discuss a certain bead as opposed to others.

<b>FACTORS OF RELEVANCE TO BEAD DESCRIPTION</b>	
<b>ACCORDING TO HORACE C. BECK:</b>	<i>1. FORM</i> <i>2. PERFORATION</i> <i>3. COLOUR</i> <i>4. MATERIAL</i> <i>5. DECORATION</i>
<b>ACCORDING TO W.G.N. VAN DER SLEEN AND PETER FRANCIS, JR.:</b>	<i>6. MANUFACTURE</i> <i>7. SIZE</i> <i>8. DIAPHANEITY</i>
<b>ACCORDING TO THE BAHRAIN BEAD PROJECT:</b>	<i>9. DISTINCT FEATURES</i> <i>10. FUNCTION</i>

The problem of defining such factors was dealt with by Horace C. Beck, when he wrote, “To describe a bead fully it is necessary to state its form, perforation, colour, material, and decoration” (1928: 1). In certain respects, this might seem as thorough an account of a bead as might be required. However, after further consideration, both W.G.N. van der Sleen and Peter Francis, Jr. were able to pinpoint additional qualities in a bead that should be taken into account: these are, namely, a bead’s “manufacture”, “size”, and “diaphaneity” (Francis, 2002: 13-15; Van der Sleen, 1973: 16). To these suggestions, the author of the present study added two further categories that are of comparable importance: the “distinguishing features” (if any) and “function” of a bead. All the above factors, by means of which the items in the Bahrain sample have been screened, were incorporated either directly or otherwise into certain defined major or essential features. These features will be introduced in brief in the following chapter.

For now, it suffices to mention that all 4,813 beads, whether studied firsthand or through publications, were catalogued and recorded into a database organized according to the

features just mentioned. This allowed “step 1” of the methodology to be covered. The database itself has been appended to this work, so that the reader may examine for himself/herself the Bahrain sample (see Appendices 1a-1b).

## **Essential Features and the Development of a Bahrain Bead Typology**

Once the major/essential features of the Bahrain sample beads were recorded, some of them were then organized according to “form”, being a significant determinant of type amongst such ornaments (see Beck, 1928: 1). The system of defining a bead’s form, as used in this work, is called the Tripartite Method (see Chapter 9.4). It was developed for use with the Bahrain sample, but is inherently universal in its capacity for defining a bead’s size and 3-dimensional shape. Other important determinants of a bead’s type include material, as a perusal of most finds catalogues will reveal, as well as function and (where relevant) the presence or absence of etching. When these determinants were combined with Tripartite classifications, the resulting descriptive sequences produced Bahrain Bead Types, the basic constituents of a typology unique to the Islands. In this manner, “step 2” of our methodology was achieved.

## **Studying Bahrain’s Ancient Beads by Means of Essential Features and the Bahrain Bead Typology**

Returning to the major/essential features referred to above and organizing the Bahrain sample’s beads, these were subsequently compared to determine not only the nature of their presence in the sample but also any definite patterns they could provide, in and of themselves as well as alongside other such patterns obtained from other bead features. They were also studied according to context and chronology. The analysis of the different bead features so undertaken constituted an execution of “step 3” of the methodology outlined above.

The application of such an analysis, as well as the Bahrain Bead Types already touched on, to an archaeological narrative of ancient Bahrain, organized chronologically across the different periods covered by our bead sample, subsequently allowed a better evaluation of what we already know of the Dilmun and Tylos eras. Growth and decline, social complexity, economic prosperity and stagnation, all these were studied from the standpoint of the bead features and Bahrain Bead Types. Ultimately, a more detailed and developed

understanding of the role of beads in the Dilmun and Tylos eras as well as the socio-economic development of these archaeological cultures was attained. The requirements of “step 4” and “step 5” of the methodology were thus fulfilled.

## **CHAPTER 4**

### **The Essential Features of Beads**

An integral aspect of studying the beads in the Bahrain sample requires that they be examined from the standpoint of their most essential features. This was undertaken as part of recording each individual specimen, in order to carry out the various steps of the methodology outlined in the previous chapter. The exact records for each bead may be delved into in the dataset accompanying this study (see Appendices 1a-1b). For now, however, a brief presentation of each major feature may be useful so as to understand what is meant by them in the analysis half of this work.

#### **Background Information, Contextual Information, and Condition**

This basically covers the B-numbers and Registration Numbers (including A-numbers) of the different beads as well as the sites and contexts within sites from which they were acquired. The excavating mission/expedition or individual for each bead as well as the archaeological season during which and condition in which it was recovered are also relevant. In a sense, the information with which we are concerned here is a bead's position in the Bahrain sample, record-wise, as well as an account of where, when, how, and in what state it was archaeologically recovered.

#### **Chronological Period**

The period to which a bead belongs refers to the chronological era to which it has been dated according to the system devised for Bahrain (specifically, that based on the sequence of Cities at Qala'at al-Bahrain) (see the next chapter). Many of the beads in the Bahrain sample have been dated to one or another of the chronological subdivisions of Dilmun or Tylos (using the term "phase" with regard to subdivisions of the latter). Others have been dated to chronological ranges spanning different periods or subdivisions within these. The dating of a particular bead has been obtained either through related finds or an appreciation of its provenience. A provenience would be the context and layer from which a bead was recovered,



if from an urban site, or the structure and nature of a grave, if from a burial one. At times, the manufacturing method or form of a bead, if not parallels amongst other archaeological assemblages, has been used to obtain a more reliable or specific dating. The chronological system used in this work (alongside the sub-system used for the Tylos phases) will be explained further in the next chapter.

It is worth mentioning at this point, for the sake of clarity, that the dating employed for most published beads in the Bahrain sample follows that given directly or otherwise in the respective works in which they appear. Such dating was obtained through a consideration of stratigraphy (e.g. occupational layers at Qala'at al-Bahrain), provenience, and related finds (pottery, seals, and the like) and given either for the beads themselves or the contexts from which the specimens were recovered (e.g. During Caspers, 1980: 6, 12-15, 19, 39, 40-41; Højlund, 1994c: 391-392; Højlund, 1997i: 145, 152-159; Roaf, 2003b: 28). Only occasionally were other considerations employed. An example would be the Iron Age – or Tylos – dating for the beads from Captain Higham's Grave 46 by means of the glass content of the bead collection (see During Caspers, 1980: 13).

In the case of unpublished specimens, all of which were practically obtained from burial contexts and have since been stored at the Bahrain National Museum, much the same method as that outlined above has been used to date the beads; this has been done by the staff at the Museum and checked where possible by the author of this study through an examination of the original excavation reports accompanying the beads. The dating of the Museum's specimens has been mainly achieved through a consideration of the chronological period(s) of a site's use, the type of burial involved (i.e., provenience), and associated finds (e.g. pottery). At times, such dating has been additionally confirmed and made more specific by the author of this work through an examination of material, manufacture, or bead shape. For instance, the Tylos "collared" gold-glass beads in the Bahrain sample have been dated specifically to the era's Phases I-II (see Chapter 5 for an overview of the chronological system and sub-system with which we are concerned) since the use of the "segmenting" method of glass bead manufacture (necessary for the production of their "collars") was first employed with gold-glass in Roman times and did not remain in use beyond roughly the start of the 1<sup>st</sup> century CE (see Chapters 8.5 and 9.6) (see Lankton, 2003: 55, 67).

## **Material**

A bead's material, apart from its shape, is the other factor that represents it as a final, "finished" product of man's labour. Along with bead shape, as in the Bahrain Bead Typology (see Chapter 9.5), it represents what a bead is. All other factors associated with any specific bead, such as those referred to by Beck, Van der Sleen, and Peter Francis, Jr. and employed as part of the study of the bead sample from Bahrain, are but indicators of how it came to reach its finished state or how, during that process, it was modified from the norm of its type (see Beck, 1928: 1; Francis, 2002: 13-15; Van der Sleen, 1973: 16).

The materials found in the Bahrain sample may be separated into three respective categories, derived from the work of Francis: "mineral", "synthetic", and "organic" materials (see Francis, 1989: 23-30, Table 1). These categories differ somewhat from those originally suggested by Beck for materials, which he respectively termed "natural", "metal", and "artificial" (1928: 52-55). Whilst the mineral and organic categories are relatively straightforward in what they imply, the synthetic one deserves some clarification. Basically, it involves materials artificially produced, that is, in a man-made sense, through components obtained via the other two groups. Common examples of synthetic materials include faience, frit, and glass (see Francis, 1989: 26-30).

## **Colour(s)**

The colour of a bead was listed by Horace C. Beck as an important quality to be called to mind when describing such an item (1928: 1). In some cases, however, more than one colour is involved, as a hue combination adorns a particular specimen. The colour (or colours) of a bead relate directly to the material of which it is made (e.g. the "purple" of amethyst or the "yellow" of agate), even in certain cases of man-induced modifications (e.g. the red hue of carnelian). Other hues are more artificially produced, such as the whiteness of etching or the many colours attending glass beads.

Colour is related to the visual aesthetics of a bead, and so is one of its more essential aspects. The same may be stated of its relationship to ornaments in general, where the visual effect of a given piece is important. Of course, colour touches on the personal as well as (in some cases) culturally instigated preferences of a bead's user. It is associated thereby with fashion and comparable trends. At times, this has been true enough to impinge upon the

economic purpose of an item, for example where the black-and-white colour combination has been employed to manufacture glass imitations of similarly hued onyx (see Chapter 8.5).

## **Diaphaneity**

A bead's diaphaneity refers to the relative ability of its material to allow the passage of light. The three varieties identified in the Bahrain sample, based on suggestions by Peter Francis, Jr., are "opaque", "translucent", and "transparent" (see Francis, 2002: 15). Each bead in the Bahrain sample was examined, as far as was possible, to determine its diaphaneity. An analysis of this aspect of the beads is important as it reveals much not only about the quality or origins of a particular raw material (i.e., the difference, for instance, between an opaque carnelian specimen and a translucent one) but also such things as personal preferences, wealth, and commercial contacts in the environment in which a bead was worn or circulated.

## **Beadmaking Process**

Closely related to the subject of bead materials is that of manufacture. After all, the production method undergone by any bead is directly related to the material being dealt with by the beadmaker. The entire process of manufacturing a bead begins with the obtaining of raw material from some source or other. This may be from near at hand (i.e., a local source) or from afar (i.e., when raw material is obtained through trade). Materials may come from mineral sources, such as the carnelian mines located in the Khambhat region of India (see De Waele and Haerinck, 2006: 32; Francis, 2002: 103-111, 117, 180, 244; Insoll, 2005: 293, 295; Kenoyer, Vidale, and Bhan, 1991: 55-56, Fig. 1). In some cases, they may be harvested from organic sources, as had occurred with the shells that produced some of the ancient beads of Bahrain (see Chapter 8.2). Some materials are even artificially produced, as with the synthetic varieties, often requiring mineral-based constituents (see Francis, 1989: 26-30). Once the necessary raw material has been acquired, the mode of bead manufacture differs based on the nature of the substance in question. Each sequence of actions employed to turn the raw material into a finished product may be termed a "beadmaking process". The process that had been used to manufacture each bead in the Bahrain sample has been defined and recorded.

## **Decoration/Distinguishing Feature(s)**

There is a particular class of modification that is applied to a bead, but which is not part of the basic bead manufacturing methods already described. In a sense, such modifications are extensions of or additions to the basic production processes of beads. Moreover, they “specialize” a particular bead and make it “go beyond” the norm of its kind. They thus provide a bead with one or more “distinguishing features”.

Some of these distinguishing features were not directly treated as vital to bead definition by Beck, Van der Sleen, and Francis, albeit these scholars did discuss them (see Beck, 1928: 13; Francis, 1999: 51-53; Francis, 2002: 15; Van der Sleen, 1973: 40-49, Fig. 6). However, where such modifications impinge upon decoration or form a unique factor essential to diagnosing a bead type, then, naturally, they were treated as important by Beck and his successors (see Beck, 1928: 13, 46-48, 55-71; Francis, 1999: 51-53; Francis, 2002: 15; Van der Sleen, 1973: 40-49, Fig. 6). Indeed, “decoration” was part of Beck’s list of factors to consider for bead definition, given precedence over shape in certain instances, and Reade’s study of carnelian beads as well as Francis’ treatment of the “patterning of stones” spring to mind as notable examples of how others have also given it due attention (Beck, 1928: 1, 13, 46-48, 55-71; Francis, 1999: 52-53; Reade, 1979). Of course, since beads are items of inherently aesthetic value, with appearance and colour playing important roles in what they are, there need be no surprise in this.

## **Perforation Type**

As intrinsic as additional modifications are to appearance, a bead’s perforation is also of relevance to its shape. Sometimes, a bead’s perforation may even affect the nature or appearance of its ends, based on the perforation type employed (e.g. Francis, 2002: Fig. 2.1). There are, of course, different kinds of perforations. The general distinction that can be made is that between “single” and “double” perforations (though some beads, not amongst those encountered in the Bahrain sample, do possess “multiple” perforations) (Beck, 1928: 51-52, Pl. IV). Perforations may also be organized according to types within the above two categories, as described by Horace C. Beck (see 1928: 51-52, Pl. IV). This is the manner whereby the perforations of different beads in the Bahrain sample were classified.

## Size

The size of a bead was considered essential to its definition by Peter Francis, Jr. (2002: 13-15). Even though this particular factor was not namely given by Beck as a means to describe beads, amongst the others stated above, it was nonetheless implicitly present as part of his reference to bead form. After all, amongst the series of symbols used by Beck to define his “regular bead” shapes, the very first was employed as an indicator of size (Beck, 1928: 6-8).

In many cases throughout archaeological literature, and examples may also be noted amongst such literature devoted to Bahrain, bead sizes have been suggested in a subjective manner. Beads, in a sense, have been described as small or large based on the opinions of the archaeologists categorizing or publishing them. Examples include the London-Bahrain Archaeological Expedition’s E17:02:01 and 1133:03 beads (i.e., B620 and B629 according to the Bahrain Bead Project), which have been described as “short” and yet are of standard length, as well as the Arab Expedition’s “discoid” beads which are actually short ones, according to the guidelines provided by Beck and explained in Chapter 9.4 (Beck, 1928: 6-8; Ibrahim, 1982: 84; Moon, 2005: 182, Fig. 5.9c, Fig 5.9i).

## Cross-Sectional and Profile Shape

Whilst Beck did refer to the various shapes employed in describing a bead as either “longitudinal” or “transverse section” shapes, this convention has not been directly carried through to the analysis of Bahrain’s beads; at least, not in the case of the latter (Beck, 1928: 2-3, 5-6, Figs. 2-3, Pl. I-III). And certainly no four-symbol sequence has been employed for the said beads, as that would be nothing more than a return to Beck’s typology and the complexity that made it (in Sir Leonard Woolley’s opinion) impractical in fieldwork (Woolley, 1934b: 366-375). Rather, retaining the basics of Beck’s method, with its longitudinal and transverse section shapes, our study of the Bahraini beads refers to them differently.

In terms of transverse section shapes, Beck’s use of these comes from such shapes having been regarded in his monograph as identical to a bead’s cross-section (Beck, 1928: 2, Fig. 2, Pl. I). In fact, most beads, if sliced laterally to provide such a section, would display their transverse section shapes. Even more complex beads, as yet not encountered amongst the

ancient beads of Bahrain, and which may display an altered shape throughout the course of their lengths, would exhibit their transverse section shapes in cross-section at one or more points along their lengths. On the whole, however, the description “transverse section” has been dropped in favour of “cross-sectional shape” mainly for reasons of precision. Generally speaking, however, such cross-sectional shapes still retain the condition placed upon transverse sections by Beck of “being at right angles to the axis which has the largest area” (1928: 2). They have therefore been measured as such for Bahrain’s beads.

For longitudinal sections, a similar change has been employed with regard to the Bahraini beads. Whilst Beck defined a bead’s profile as “the line or lines bordering the longitudinal section, joining the two ends, or apexes of the bead”, it should be noted that, by his own admission, the outline of a bead’s longitudinal section is provided by one or more lines of this sort (Beck, 1928: 2). In essence, a bead’s profile lines therefore provide the shape of its longitudinal section, for which reason this section has been called a “profile shape” by the Bahrain Bead Project. This has been done not to negate Beck’s employment of the term “profile”, but rather for reasons of clarity and to acknowledge the above observation with regard to longitudinal sections. Beck’s standard definition of “profile” has still sometimes been employed, however, with regard to a “line . . . bordering the longitudinal section” rather than the longitudinal section as a whole (Beck, 1928: 2).

Beck’s terminology in relation to specific types of bead cross-sectional and profile shapes (i.e., his transverse and longitudinal sections) has been retained in working with Bahrain’s beads. In some cases, this terminology has been enhanced by the inclusion of additional types (previously non-existent and so needed) as well as variations on available ones (when encountered) (e.g. “septagonal” and “hexagonal lenticular” respectively). However, the cross-sectional and profile shape of a bead, when combined, allow us to define the bead’s “form”, one of the essential qualities required for the description of a specimen according to Beck (1928: 1).

## **Function**

Function, as a particular factor in bead categorization, was suggested as an “independent” one to consider by the author of this work. It was not regarded as such by Beck, Van der Sleen, or Francis, albeit many of the bead types suggested by Beck in his typology do treat bead function as one of their defining features. For example, Beck defined

“spacing beads” as part of his “Family A.3” (1928: 13). Such beads function as “dividers” that separate the different arrangements of beads in a collection (i.e., on a necklace or bracelet, for instance). This is their function: to be “spacers”. They are usually observed as having more than a single perforation running through them, and “the axes of the perforations are parallel” (Beck, 1928: 13).

Apart from spacers and the general “bead”, other distinct functions have been noted in the sample from Bahrain. Some items function as “microbeads”, being small and distinct from a particular defining size as well as often found in large quantities in a collection. Such beads emphasize sheer numbers.

Sometimes, an item may not actually be a bead, but rather a “pendant”. The distinction between “bead” and “pendant” seems to depend on how an item is perforated (Beck, 1928: 1). In many cases, if a bead blank is perforated in the usual sense, then it should be regarded as a bead. If, on the other hand, it is perforated close to one end so that the greater portion of the item is suspended when strung, then it should be classed as a pendant. In one case (B3862), observed in the bead sample from Bahrain, a bead originally perforated as such later had a second perforation made so that it could also be used (alternatively) as a pendant. Frequently, however, pendants have unique shapes that distinguish them from beads with common shapes. For this reason, Beck classed them alongside “special beads” (1928: 11-51). A few such pendants have been noted in the Bahrain sample (e.g. B592, B4133, B4134, and B4143, amongst others).

## **CHAPTER 5**

### **Dilmun and Tylos Chronology**

Having covered the essential features employed to analyze different aspects of the Bahrain sample, we will now examine the chronological system (and sub-system, in the case of certain Tylos specimens) used in this work as a framework to date the beads. It is important to be familiar with these so as to be able to appreciate temporal differences between various bead features and Bahrain Types in the second half of this study.

#### **Chronology and Pottery**

The beads of ancient Bahrain derive from various eras, defined by specific archaeological cultures. In standard practice, the difference between one culture and another is determined by sifting out the distinctive patterns in specific finds in the archaeological assemblage. Universally, the most reliable of these has been pottery, with sherds providing the most tell-tale chronological indicators (see Renfrew and Bahn, 2004: 125-126). Due to the frequency with which pottery is produced and subsequently discarded, along with a consideration of the rate at which pottery styles change, it is easy to comprehend why this has been so. Pottery does not remain in use for very long following its production before going out of circulation as discarded material; there is therefore no concern for a particular style remaining in use long after its designated chronological period, at least not without minute differences that are detectable (see Renfrew and Bahn, 2004: 125-126). Thus the rate at which disuse follows manufacture, along with minute alterations being introduced, makes for reliable temporal indicators. The world over, pottery styles have therefore been examined and, with a study of a particular typology of sherds, been arranged into a chronological sequence for dating purposes. In this regard, Bahrain is no different (Højlund, 2007: 11).

#### **Cities and Periods: The Chronology of Ancient Bahrain**

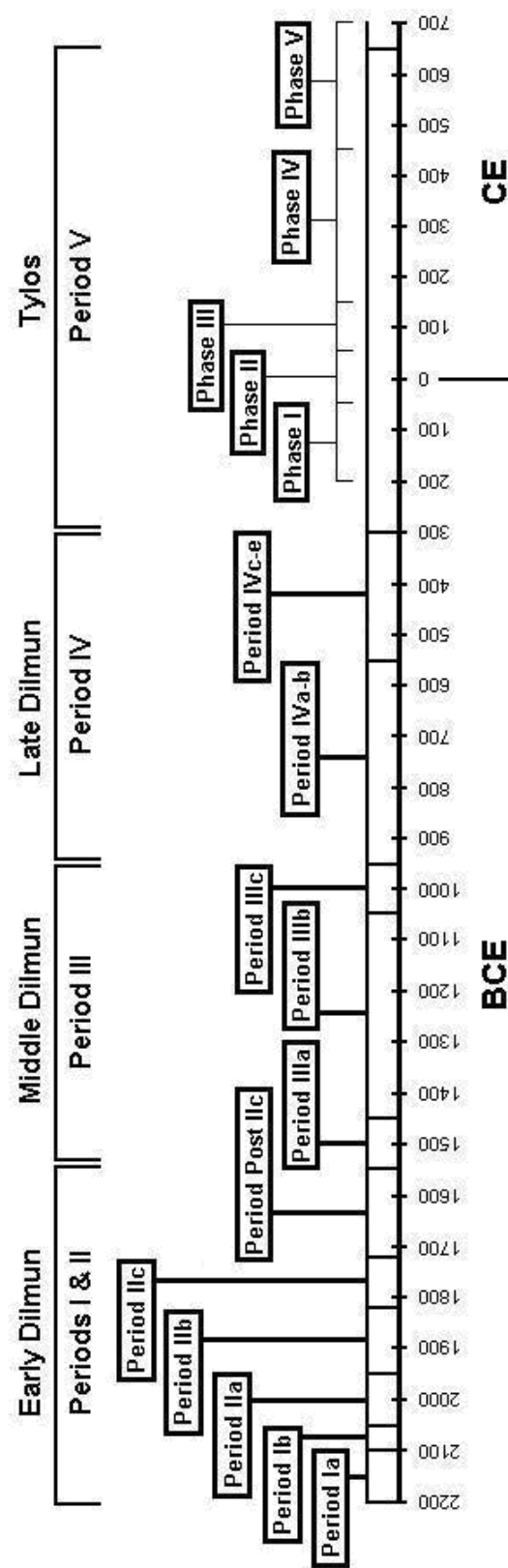
In 1954, the Danish Expedition headed by P.V. Glob and Geoffrey Bibby began their excavations at a large tell located on the northern part of what may be termed the main island



of Bahrain; this was the site of Ras al-Qala, also known as Qala'at al-Bahrain (Højlund and Andersen, 1994a: 9). The result of these excavations, which lasted for sixteen years alongside an additional season in 1978, was the uncovering of numerous structures and finds that would further our understanding of the cultures of ancient Bahrain (Højlund and Andersen, 1994a: 9-12).

Even more important for putting these finds into context was the discernment of archaeological “levels” at Qala'at al-Bahrain, based on pottery excavated from each (Højlund, 2007: 11). These sherds, and the formulation of a distinct sequence therefrom derived from the various levels, resulted in the realization that the urban site at Qala'at al-Bahrain represented not only one occupational layer, but rather six different and archaeologically distinguishable occupational layers (Andersen, 2007: 10). These were chronologically arranged, being termed Cities I through VI, with the oldest being buried at the bottom of the tell and the most recent nearest to the surface; a City VII may also be identified if one counts the Portuguese occupation of the site (Bibby, 1996: 108-111). Bibby himself made the observation that the Danish Expedition's *barasti* (that is, palm-frond) encampment atop the tell, from which it conducted its excavations, could be considered “City VIII” at Qala'at al-Bahrain, representing a new “phase of occupation” at the site (1996: 111).

Since the Cities at Qala'at al-Bahrain represent a more or less continuous occupation of the site throughout antiquity and into historical times, the result is a sequence that can be reorganized into general chronological “periods” (Crawford, 1998: 52; Højlund and Andersen, 1994b: 15; Rice, 1994: 151). These are the archaeological cultures that comprise Bahrain's antiquity; which, in fact, are exactly what the Cities at Qala'at al-Bahrain in their own fashion represent (Højlund and Andersen, 1994b: 15; Mughal, 1983: 3). It is the continuity inherent in the “period system” of chronology at Qala'at that makes it a useful temporal indicator, for which reason it has been used to study the beads in the Bahrain sample. The “period system” is therefore the main chronological structure behind the work of the Bahrain Bead Project (see Fig. 2).



**Fig. 2.** Timeline of the Dilmun and Tylos eras on Bahrain, along with the subdivisions of each according to the "period system" developed via the Cities at Qala'at al-Bahrain (see Højlund, 1997a: 27, Fig. 29; Højlund, 2007: 11-15, Fig. 3). The different phases subdividing the Tylos era according to a chronology of glassware in Period V cemeteries are also shown (see Andersen, 2007: 231; Salman & Andersen, 2009: 7, Tab. 1). It should be borne in mind that the limits of the eras and chronological subdivisions in this chart are approximates, and there is no inclusion of the Neolithic period or any era prior to the start of Early Dilmun.

The first four Cities at Qala'at al-Bahrain, representing Periods I to IV, may be correlated to three epochs that constitute the age of Dilmun. These have been designated as Early, Middle, and Late Dilmun respectively. They cover, in their entirety, a lengthy span of time indicating an extent of several centuries. Together, the three subdivisions of the Dilmun era represent the Bronze Age on the Bahrain Islands.

It should also be noted that the Dilmun periods on Bahrain (based on the Roman numeral system of the Cities) have been further subdivided chronologically according to the pottery distinctions at Qala'at al-Bahrain, aided by various stamp seals found at the site (Højlund, 2007: 11). Such additional subdivisions are distinguished alphabetically, an example being the Late Dilmun era (i.e., Period IV) subdivided into Periods IVa to IVe. The pottery and stamp seals from Early Dilmun sites, such as the Barbar Temples and Tells F3 and F6 on the island of Failaka off the coast of Kuwait, have greatly refined such subdivisions; particularly with regard to Periods I to III at Qala'at al-Bahrain (covering Early and Middle Dilmun) (Højlund, 2007: 11). This has also been the case with various other archaeological undertakings, especially on Bahrain, amongst which one may note the study of finds from the Saar Settlement, the French Archaeological Mission's work at the Karranah 1 cemetery, as well as a recent re-examination of materials excavated from Early Dilmun burial mounds and housed at the Bahrain National Museum (Højlund, 2007: 11).

The Tylos era followed the Early, Middle, and Late Dilmun epochs and ranged from c. 300 BCE to c. 650 CE (see Andersen, 2007: 13, 232-243, Tab. 1). Termed "Hellenistic-Sasanian", it was denoted at Qala'at al-Bahrain by a single occupational level; that of City V. Like its Dilmun counterparts, the Tylos era has also been organized according to a series of chronological subdivisions.

### **Tylos Phases: Chronological Subdivisions of Period V**

The subdivisions of the Tylos era, as derived from the site of Qala'at al-Bahrain, cover Early, Middle, and Late Tylos; the second of these has been further subdivided into Middle Tylos 1 and Middle Tylos 2 (Herling, 1994: 225; Herling and Salles, 1993: 167-175; Salman and Andersen, 2009: 12). The Tylos era represented by Period V at Qala'at has also been subdivided into Periods Va to Vd, marking distinct chronological segments based on pottery with a relative "uniformity" (Højlund, 1994b: 239).

Recent studies of the funerary material from Tylos cemeteries have also shed additional light on the chronology of the Hellenistic-Sasanian period on Bahrain. It has thus become possible to construct an alternative Tylos chronology, comprised of subdivisions termed Phases I to V, mainly by way of studying “imported glass”, alongside related pottery, from burials (Andersen, 2007: 231; Salman and Andersen, 2009: 7, Tab. 1). Whilst this is, in a sense, a “funerary chronology”, it is yet applicable to other contexts. One reason is that it covers nearly the entire span of the Tylos era; it begins about a century following the start of the Seleucid era, when Hellenistic influence first arrived on Bahrain, and covers all subsequent epochs till less than a century after the advent of Islam on the Islands (i.e., from c. 200 BCE to 700 CE) (Andersen, 2007: 231; Salman and Andersen, 2009: 7, Tab. 1). Another is that, being based partly on glassware in an era marked for its glassmaking and glassworking as well as innovations associated with these (as will be shown in the second half of this study), it is based to an extent on a material that is characteristic of the Tylos era and therefore appropriate as well as reliable in forming a chronology of the same (see Eisen, 1919: 92-101; Francis, 2002: 87-88; Lankton, 2003: 53-54, 63; Stern, 1999: 442). Owing to this reliability of the phase-based chronology, the fact that no Tylos specimen in the Bahrain sample can be specifically dated to before Phase I, and because the majority of the beads in the sample were recovered from funerary contexts much like the glassware and pottery behind this system, it has been used by the Bahrain Bead Project in place of the alternative letter-chronology (i.e., Va to Vd) to more precisely date Tylos beads (where possible) to particular subdivisions of Period V (see Fig. 2).

## **CHAPTER 6**

### **The Sites and Burial Types of Ancient Bahrain: Understanding Where the Beads Came From**

It is important to properly define the temporal and spatial environment from which a bead is drawn in order to study it properly. The previous chapter presented the chronological system (and sub-system, in the case of some Tylos specimens) used to determine the temporal origins of the beads. In terms of their spatial origins, it has already been remarked in this work that 17 sites have contributed to the Bahrain sample. In this chapter, we will embark upon a presentation of some of the sites, and augment our understanding of burial ones by considering the various funerary contexts that have provided beads.

#### **Urban Sites**

##### **A. Qala'at al-Bahrain**

The site of Qala'at al-Bahrain, overlooking the Arabian Gulf on the northern end of Bahrain (see Chapter 3, Fig. 1) and represented by a “700 m by 400 m” tell that “rises to a height of c. 8 m”, has been dubbed “the probable site of the ancient capital of Dilmun” (Højlund, 2000: 59). The site is especially important due to its having seen almost continuous occupation throughout the millennia between the start of Early Dilmun and the modern era (Crawford, 1998: 52; Højlund and Andersen, 1994b: 15). The six Cities (counting the Islamic layer) hidden beneath the tell have therefore provided us with the foundations of a chronological system by which to organize the Dilmun and Tylos eras on Bahrain (see the previous chapter). They have also provided us with a site that has undergone much change throughout the different eras of its occupation. To comprehend its development, it is therefore necessary to chart the changes that Qala'at experienced across these epochs. And to do so, we must examine the structures and finds uncovered in two excavations, numbered 519 and 520 respectively, carried out by the Danish Expedition at the site as well as those from a later venture at the same by the French Archaeological Mission.

Regarding the first City at Qala'at al-Bahrain, we may observe that it has been divided into two distinct phases, the earlier of which is represented only by sherds and other occupation debris embedded in *farush* (i.e., a limestone conglomerate) (Bibby, 1986a: 108-109; Højlund, 1994d: 466; Potts, 1990: 154-156). The second phase, succeeding the last, has been designated Ib and may be termed City I proper, because it truly represents the first marked habitation of the site of Qala'at al-Bahrain (Potts, 1990: 156-157). Such habitation is visible in the presence of structures, notably that of buildings, three wells, and two walls, one of which is beneath a later wall belonging to Qala'at's City II and another somewhat north of this last and foreshadowing its future construction (Crawford, 1998: 53; Højlund, 1994d: 467-468; Kervran, Hiebert, and Beyer, 2005: 40-41).

The humble settlement at Qala'at al-Bahrain, represented by level Ib thereat, burgeoned into a full-scale city at the start of Period II (see Chapter 5, Fig. 2) with, amongst other things, a very conspicuous feature: a mighty wall that surrounded the urban site on all sides and provided defense against invaders and other dangers to the inhabitants within (Bibby, 1996: 124-125; Crawford, 1998: 55, 65; Højlund, 2000: 60-61; Potts, 1990: 192). The buildings enclosed by the city wall at Qala'at al-Bahrain included some rectangular rooms, interspersed with streets following a regular grid-plan and ending in a well (Bibby, 1996: 124-125; Højlund, 2007: 125). Evidence has been uncovered in Excavation 520 of copperworking, including fragments of the metal and moulds (Hauptmann, 1994; Højlund, 1994c: 370-373, 378; MacLean and Insoll, 2011: 33; Northover, 1994). Fragments of copperworking crucibles and moulds have also been found respectively in the Period IIa and Period IIb levels of the Danish Expedition's Excavation 519 (Højlund, 1997c: 40; Højlund, 1997j; Potts, 1990: 317).

At some point during either Period IIb or IIc (see Chapter 5, Fig. 2), three similarly imposing structures dominated the central portion of Qala'at. Referred to collectively as the "palace", these were Buildings I-III; Buildings I and II opened onto a street, about 12 m long, that separated them from Building III (Højlund and Andersen, 1997: 16, 26; Oates, 1986: 433-434). The three buildings have been interpreted as warehouses, albeit not stand-alone structures but "part of a palace organization" (Højlund, 1997c: 41). The buildings were apparently reutilized in the Middle Dilmun era (i.e., Period III) succeeding City II at Qala'at.

It has been suggested that in Period III (see Chapter 5, Fig. 2) Buildings I-III "served as administrative components for production and storage within a larger organization, possibly headed by a Kassite governor" (Højlund, 1997f: 86). This is particularly visible in the presence of a great deal of Mesopotamian pottery types as opposed to local Barbar ware,

with this last being absent (apart from an intrusive case) in the Middle Dilmun IIIb1 level of the buildings, as well as the finding of the remains of burnt date stones, cylinder seal impressions of the Mitannian variety, and various cuneiform texts of an administrative nature (Eidem, 1997; Højlund, 1997d: 50-67; Højlund, 1997e: 68; Kjaerum, 1997: 81-82).

During Period IV, the Late Dilmun era (see Chapter 5, Fig. 2), the buildings of the palace were once again occupied. Early Dilmun stonework continued to be used as part of the Period IV complex, but there were several renovations of existing walls as well (see Højlund, 1997g: 88-90, 95-97, 103, Fig. 335, Fig. 338, Fig. 342; Højlund and Andersen, 1997: 17-26). The area associated with Building III was also extensively rebuilt (see Højlund and Andersen, 1997: 22-26).

Two Late Dilmun “pillar foundations” have been excavated in the same room of the palace that possessed the gate, and a “plaster platform” acted as a “threshold” whilst a “plaster staircase” led “to the roof or upper storey” (Højlund, 1997g: 89-90). Beneath this room, and embedded in the Middle Dilmun level, was found a snake burial belonging to the Late Dilmun period, and other such burials were also uncovered elsewhere in Excavation 519 by the Danish Expedition (Glob, 1957: 125; Højlund, 1997h; MacLean and Insoll, 2011: 30-32; Potts, 1990: 321). These have provided, between them, a significant quantity of Period IV beads that have been included in the Bahrain sample (Højlund, 1997h). Against the eastern wall of the room, the remains of a “chair-like altar base” (i.e., base 95) built of mortar and plaster was also excavated, along with fire layers around the same (Højlund, 1997g: 90). These have suggested a religious function, which has added to the interpretation of this part of the Excavation in the Late Dilmun period as a whole (Højlund, 1997g: 90; MacAdam, 1990: 64; Nayeem, 1992: 147; Oates, 1986: 432).

Other features of the Late Dilmun complex include gates, a courtyard, residential quarters, and even lavatories (Oates, 1986: 432-434; Potts, 1990: 317-318). Burials were also found in various parts of the Period IV palace complex (Højlund, 1997i; MacLean and Insoll, 2011: 34-35, Fig. 2.12; Potts, 1990: 319-320, Fig. 36). These were of the bath-tub and pot varieties, with a number of Period IV beads having come especially from the latter; these burials will be treated in more detail below.

It has been observed that the site of Qala’at al-Bahrain did not receive the “same level of interest” in the Tylos period as it did in the earlier Dilmun periods (see Chapter 5, Fig. 2) (Andersen, 2007: 232). In the Danish Expedition’s Excavation 519, Tylos era pottery was embedded amongst seashells in a layer that was 1-2 m thick (Højlund, 1997l: 213). There

were very few traces of architecture belonging to this period in Excavation 519, with “only a few disconnected walls . . . described and recorded” (Højlund, 1997l: 213). A few of the walls comprising the western portion of the Early Dilmun palace that was reused in the Middle and Late Dilmun periods also intruded into the Tylos layer and could have been in use during this last as well (Højlund, 1997l: 213).

In Excavation 520 of the Danish Expedition, whilst the city wall that had existed in earlier epochs was found only at “the bottom of the Hellenistic/Achaemenian level” in an abandoned and plundered state, to its north there were scanty indications of structures that continued on into unexcavated areas of the tell at Qala’at as well as under the Islamic fortress that bordered the seaward side of the site (Andersen, 2007: 232; Højlund and Andersen, 1994c: 49). The Tylos structures heading up to the fortress possessed “very strong walls and some considerable rooms”, much like their Late Dilmun counterparts (Højlund and Andersen, 1994c: 54). Behind Qala’at’s city wall, however, “Hellenistic finds are only weakly represented”, despite earlier conjectures as to their being of Tylos date (Højlund and Andersen, 1994c: 49). In fact, Hellenistic finds were only excavated in one location, and this was devoid of any Late Dilmun or Achaemenian occupational traces (Højlund and Andersen, 1994c: 52). This corroborates the similar scantiness of Tylos finds in the French Archaeological Mission’s excavations nearby (Boucharlat, 1986: 438-439; Kervran and Hiebert, 2005).

## **B. The Saar Settlement**

Covering an estimated expanse of about 2.3 hectares, the full extent of the settlement at Saar (see Chapter 3, Fig. 1) is thus far unknown though excavations at the site have found it to fall entirely, in a chronological sense, into the Early Dilmun period (Crawford, 1998: 67; Killick and Moon, 2005: 6; Laursen and Johansen, 2007: 143). A more accurate measure based on pottery would be its occupation between approximately 2,050 and 1,750 BCE, with C14 dating of “carbonalized materials from the settlement” confirming these limits (Killick and Moon, 2005: 6; Laursen and Johansen, 2007: 143). It was therefore solely an Early Dilmun Period II site (see Chapter 5, Fig. 2).

The Saar Settlement appears to have been composed of a series of structures built according to a grid-plan, thus emphasizing the urban planning that went into its construction, with two main intersecting roads that met in front of the Early Dilmun temple that marked the



highest point of the site (Crawford, 1998: 67, 69-70, 75; Crawford and Moon, 1997: 20-21; Killick and Moon, 2005: 6). Most of these structures were arranged in blocks, each of which contained several adjoining houses (Crawford, 1998: 67-68; Crawford and Moon, 1997: 20; Killick *et al.*, 1991: 134; Moon, 2000: 63; Nayeem, 1992: 165). These last were comprised of a roofed rectangular room, probably used for storage or sleeping, and another L-shaped area that appears to have had a ceiling made of thatched palm-branches (Crawford, 1998: 68; Crawford and Moon, 1997: 20; Killick, 2005: 7; Moon, 2000: 63-64; Woodburn and Crawford, 1994: 89, 104). In this second area of each house were found ovens, water basins, and pits or depressions usually containing jars likely used for storage (Crawford, 1998: 68).

Features of note at the Saar Settlement included a well, warehouse, kiln, and two circular structures that stood out conspicuously amongst the blocks of houses (Crawford, 1998: 67; Killick and Moon, 2005: 7). Another conspicuous aspect was the Early Dilmun temple that crowned the entire settlement (see below).

## **Religious Sites**

### **A. The Saar Temple**

Dominating the site of the Saar Settlement, the Saar Temple was built of locally-available stone set with plaster (Crawford, 1998: 76; Farid and Killick, 1997: 23; Killick, 2000: 93; Moon *et al.*, 1995: 142). It was built in Period IIb, and used for a century-and-a-half or even two centuries (see Chapter 5, Fig. 2) (Killick, 2000: 93).

The roof which covered the building was held up by three stone pillars, two of which were square and the third round though eventually provided with a “skirt” of plaster that gave it a square shape as well (Crawford, 1998: 76). The temple possessed two altars with “curved backs” which may have represented a “stylised crescent moon” or “bull’s horns” (Killick, 2000: 94). The soil around and upon both of these altars have been examined microscopically and via analysis, with the resulting conclusion being that the ash-layer present in them contains probable traces of offerings (Matthews *et al.*, 1997: 39-42). Outside the building stood two more altars, contemporary with the earliest phase of the temple’s existence, though they eventually increased in number to five (Crawford, 1998: 77; Killick, 2000: 94; Killick and Crawford, 1997: 91; Nayeem, 1992: 192).

The building itself was “trapezoidal” in shape, being about 17 metres long on its broader sides (Crawford, 1998: 75-76). It contained several buttresses against its northern and eastern walls, and a small room with a peculiar shape (i.e., Area 220) that may have been some sort of storeroom, since traces of grains have been found in studying the soil from it (Crawford, 1998: 76-77, Fig. 4.12; Farid and Killick, 1997: 43-46; Killick, 2000: 93-95; Woodburn and Crawford, 1994: 92). No satisfactory explanation has yet been given for the curious shape of this room, though various ones have been put forward in the attempt to do so (Killick, 2000: 93; Killick and Crawford, 1997: 89; Killick *et al.*, 1991: 114).

## **B. The Barbar Temples**

The site of the Barbar Temples involves three distinct structures, each built on top of its predecessor, within vicinity of the village of Barbar (see Chapter 3, Fig. 1) (Doe, 1986: 191; Glob, 1954b: 150; Højlund, 2003d: 330; Mortensen, 1956: 197; Rice, 1994: 34). The temples all date to the Early Dilmun period (see Chapter 5, Fig. 2). The abandonment of Temple III may have taken place in c. 1500 BCE if one considers pottery with Kassite traces having been found there, though the study of seals seems to suggest c. 1800 to c. 1600, which has been regarded as “more realistic” (Crawford, 1998: 75).

Temples I and II, like their Mesopotamian counterparts, were built on a two-tier basis, with the lower platform being roughly rectangular and the upper one “trapezoidal”; this last may not be entirely unlike the Early Dilmun temple at Saar, though an exact likeness is somewhat wanting (Andersen, 2003c: 81-109; Andersen, 2003d: 111-146; Crawford, 1998: 71; Crawford and Moon, 1997: 17; Mortensen, 1970: 394). Of the third temple, enormous and built upon the remains of the other two, hardly any traces have been recovered due to its having been devastated by stone-robbing (Andersen, 2003b: 26-31; Andersen, 2003g: 187-196; Glob, 1955: 192). Nonetheless, impressions on the soil indicate that it must have been truly deserving of the designation “monumental” in both its structure as well as the impressive appearance it once commanded, looking down from atop two platforms (Killick and Moon, 2005: 2).

Flanking structures have been noted for the first two temples: steps descending to an enclosure to the west in which could be accessed some sort of sacred spring, whilst to the east of the buildings a ramp led down to an oval-shaped area that contained altars, a canal for drainage, and a dark powdery substance deemed indicative of the carrying out of sacrifices

(Andersen, 2003e: 147-173; Andersen, 2003f: 175-185; Crawford, 1998: 71, 73; Højlund, 1999: 30-33; Potts, 1990: 203-204). A well also situated on the site was accessed by all three temples, with it apparently remaining contemporary and within reach of even the third temple (of which so little has remained). Whilst it has not yet been determined which deity or deities (this last being a possibility due to two semi-circular altars having been found within the sanctuary of the second temple) were worshipped at Barbar, a number of suggestions have been made (see Al Nashef, 1986: 352; Andersen, 1986: 175-177; Højlund, 2003d: 329-330; Lombard, 2000a: 88).

At this point, mention should be made of another temple constructed of limestone blocks found to the north-east of the Barbar Temples proper, and observed to have been contemporary with the third of these. The North-East Temple was devastatingly stone-robbled, much like the third of the nearby temples (Andersen, 1956: 186-188; Andersen, 2003h: 200-208; Andersen and Højlund, 2000: 90-91). It was built according to a two-tier plan, just like the Barbar Temples proper, with the upper measuring 24x24 m (Crawford, 1998: 75). Beads from the North-East Temple, like the Barbar Temples themselves, have been included in the Bahrain sample.

### **C. The Diraz Temple**

A third temple site that concerns the Bahrain sample is located near the modern village of Diraz (see Chapter 3, Fig. 1) (Killick and Moon, 2005: 2). Named after the same, the temple is represented by a small structure that apparently dates to the 3<sup>rd</sup> millennium BCE and the Early Dilmun period (see Chapter 5, Fig. 2) (Bibby, 1986b: 194; Crawford and Moon, 1997: 18; Roaf, 2003b: 25). The Diraz Temple consisted of three distinct areas: what appears to have been a “work area” of sorts to the west, a large central room with “two rows each of four pillars with a square altar between them”, and finally a smaller room to the east containing another altar (Crawford, 1998: 77-78).

Behind the second room containing an altar, a burial of the Neo-Babylonian period was discovered, identified via an Achaemenian bowl still *in situ* as well as “two stamp seals . . . dated to the middle of the first millennium BC” (Roaf, 2003b: 28). These artifacts as well as the nature of the burial suggest the contact existent between the Bahrain Islands and Mesopotamia in the Late Dilmun period (see Chapter 5, Fig. 2) and which should not be understated. However, it should be pointed out that there is no conclusive proof of a

relationship between the burial and the Diraz Temple and that one should be wary in making any such association (see Crawford, 1998: 78). If any such relationship existed, it could indicate a Late Dilmun reuse of part of the site for interment.

Nonetheless, finds from within the Diraz Temple proper seem to indicate that the original structure was a contemporary of the Barbar Temples (Roaf, 2003b: 25). Amongst these are pottery examples of the diagnostic Barbar ware (Crawford, 1998: 78). A Dilmun stamp seal has also been recovered, comparable to those from Saar as well as Qala'at al-Bahrain and belonging, on the basis of style, to Period II (see Chapter 5, Fig. 2) (Roaf, 2003b: 27, Fig. a). Other finds have also been obtained from the Diraz Temple site, though these have been mainly from without the building and constitute the remains of domestic rubbish (Crawford, 1998: 78).

### **Introducing a Marine Exploitation Site: Al-Markh**

This maritime exploitation site (see Chapter 3, Fig. 1) contemporary with the Mesopotamian Late Ubaid period was examined by the British Archaeological Expedition during two seasons; one in 1973/1974 and the other in 1975 (Roaf, 2003a: 7-8; Potts, 1990: 52). The excavations at the site provided a glimpse into its occupation, which covered two periods represented by two layers “each with a distinctive economic character” (Potts, 1990: 52). The number of fish-bones recovered from the site was enormous, with 140,000 having been examined from the later layer and 130,000 from the earlier one (Roaf, 2003a: 8). This seemed to confirm the nature of al-Markh as a site for marine exploitation, and clearly a “very specialised fishing centre” (Roaf, 2003a: 9). This was the case even in the later occupational phase, when “mammalian fauna, principally sheep/goat, now made up approximately one-third” of the site’s archaeological deposits (Potts, 1990: 52). Apart from fish-bones, shells, flints, pottery, and three animal-bone artifacts, three beads were also recovered from al-Markh (i.e., two of shell and one of fish otolith) (Roaf, 2003a: 8-11). Though predating the Dilmun era on Bahrain, these ornaments have nonetheless been included in the Bahrain sample (see Chapter 7.5).

## Burial Types

The vast majority of beads comprising the Bahrain sample were recovered from burial sites. In discussing the different funerary contexts found on the Bahrain Islands, a broad division may be made between those peculiar to the Dilmun periods or cultures and those distinctly Tylos in fashion. Whilst we may describe the various sites used for funerary purposes in the Dilmun and Tylos eras separately, much as we have done with the urban and other sites referred to above, the most representative styles of burials belonging to each transcend the boundaries between locale and locale. For this reason, it might be more useful to discuss the different varieties of burial contexts rather than give an overview of the cemeteries of ancient Bahrain.

### A. The Early and Late Types: Two Categories for Burial Tumuli

It has been suggested that “nowhere in the world do ancient burial mounds dominate the landscape as they do in Bahrain” (Højlund, 2007: 7). Roughly 25.9 km<sup>2</sup> of Bahrain was once covered by them, and a recent enumeration suggests there were originally at least 75,023 mounds in Bahrain (Laursen, 2008: 159).

The burial mounds themselves may be divided into two kinds: the Early Type and the Late Type. The former was usually devoid of capstones and has been described as “low, flat and uneven, characterized by rock-fill between the burial chamber and ring-wall” (Højlund, 2007: 17). The latter, on the other hand, “had a centrally-built chamber covered by cap-stones and was surrounded by a low ring-wall” (Højlund, 2007: 17). The former belongs to the Early Dilmun Period I (i.e., c. 2200 to c. 2050 BCE) whilst the latter was constructed in Period II (i.e., c. 2050 to c. 1550 BCE) (see Chapter 5, Fig. 2); some “overlap” in the construction of the two types between the periods has nonetheless been noted (Højlund, 2007: 17-18, 130, 136, Fig. 261; Højlund *et al.*, 2008: 143, 151; Laursen, 2008: 157-159; Lowe, 1986: 73-81, Fig. 12; Olijdam, 2010: 141).

Early Type burial mounds were constructed in the region skirting the limestone “central basin” of Bahrain (Laursen, 2008: 158). Examples that have contributed beads to the Bahrain sample include mounds in Wadi as-Sail and Hamad Town (see Chapter 3, Fig. 1). The Late Type mounds assumed more definite concentrations, solidifying into eight distinct cemeteries: the ‘Aali, Buri, Dar Kulayb, ‘Isa Town, Karzakkan, Malikiyah, Saar, and Umm

Jidr ones (Højlund, 2007: 18, Fig. 8). The number of cemeteries has also been recently suggested as ten rather than eight, but since this new enumeration is built upon a consideration of the points of “genesis” and positioning in relation to rocky “slopes” of the original eight mound fields (thus differentiating the Saar cemetery into Saar and Janabiyah ones, or the ‘Isa Town cemetery into ‘Isa Town North and ‘Isa Town South ones) rather than their final coalescence as distinct bodies, the original enumeration has been retained by the Bahrain Bead Project (see Laursen, 2010: 117-118, Fig. 2). It should be pointed out that the Karzakkan and Malikiyah cemeteries can together be regarded as forming distinct areas within Hamad Town (see Chapter 3, Fig.1 and Pl. III). Dar Kulayb, whilst forming the southernmost sector of the Hamad Town burial fields, has been treated by the Bahrain Bead Project as a separate site, to adhere to the recording tradition of the Bahrain National Museum and to avoid confusion by means of similar past treatment of the same (see Højlund, 2007: 117-118). Occasionally, the construction of Late Type burial mounds did stray beyond the confines of cemeteries and into adjacent areas in Bahrain; such incursions, however, are the province of only a few occurrences.



**Pl. III.** A view of some Late Type Dilmun burial mounds at Hamad Town.

## **B. The Royal Mounds at ‘Aali**

Likely developments of the Late Type tumulus described above, the so-called “Royal Mounds”, termed thus for their enormous size and monumental architecture, were located just south of the village of ‘Aali on Bahrain in the late 19<sup>th</sup> century (see Chapter 3, Fig. 1) (Højlund, 2007: 25; 49, 132; Laursen and Johansen, 2007: 145). In the intervening decades, the village expanded in size so that at present they surround the Royal Mounds (Højlund, 2007: 25; Laursen, 2008: 161).

It has been assumed that the Royal Mounds, being not only monumental constructions that are set apart but as well enormous investments of labour and wealth, likely represent the tombs of an aristocratic or elite group of individuals, if not royalty (Crawford and Moon, 1997: 16; Højlund, 2007: 124, 132-136; Laursen, 2008: 155-157, 159-162; Laursen and Johansen, 2007: 145). As a whole, a Period IIa-c dating (i.e., Early Dilmun) is acceptable for the Royal Mounds, based on their pottery and architecture (as well as one C14 dating of charcoal), though there is a leaning towards IIb-c (see Chapter 5, Fig. 2) (Højlund, 2007: 26-28, 122, 131-135). It is uncertain at present if any Royal Mounds were built in Period Post IIc in Bahrain (Højlund, 2007: 135). Apart from beads, finds from the Royal Mounds include ivory, copper, pieces of ostrich-egg shell, and pottery of both local and Mesopotamian varieties (Cleuziou, Lombard, and Salles, 1981: 30-31; Højlund, 2007: 26-28, 53-66).

## **C. The Subterranean Graves**

“Subterranean” graves, built below-ground, cut into the bedrock, and sealed with capstones, have been observed at al-Hajjar, Al-Maqsha’, Karranah, and Shakhoura (see Chapter 3, Fig. 1) (Crawford, 1998: 83; Olijdam, 2010: 142). It is notable that these tombs have no alcoves, unlike the ordinary and Royal tumuli (Olijdam, 2010: 151). “Small clusters” of such subterranean graves have been identified in a “broad band” covering most of the regions named above, and so this single-period mode of interment has been regarded as “the dominant burial type in the fertile and densely populated northern coastal plain” of Bahrain (Olijdam, 2010: 142).

The subterranean graves have been dated, on the basis of associated finds, to Period IIa-c on the Islands according to Qala’at chronology, with some even from Period Post IIc (see Chapter 5, Fig. 2) (Cleuziou, Lombard, and Salles, 1981: 31-32; Olijdam, 2010: 142,



147, Fig. 3). The several beads excavated from subterranean graves that have not seen reuse and studied as part of the Bahrain sample have been similarly dated alongside other items from the burial assemblages of such burials (Olijdram, 2010: 147-149, Tables 2-6). These items include human and animal remains, local and imported pottery, Arabian Gulf and Mature Dilmun IA seals, metal objects, and vessels coated with bitumen (Olijdram, 2010: 147-149, Tables 2-6). It has been suggested, however, that some of the subterranean graves (for instance, at al-Hajjar) were reused in Period III or even the Tylos era (see Chapter 5, Fig. 2) (Crawford, 1998: 83-84).

#### **D. The Burial Complexes at Saar**

The Burial Complexes are situated at the eastern extremity of the ridge overlooking the Early Dilmun settlement at Saar (see Chapter 3, Fig. 1) (Ibrahim, 1982: 25; Laursen and Johansen, 2007: 143; Mughal, 1983: 3, 10-11; Olijdram, 2010: 142). Three such complexes have thus far been identified (Olijdram, 2010: 142). Their graves were “built of roughly hewn stones and covered with stone slabs” (Mughal, 1983: 4). The most remarkable feature of these graves, however, was that they were distinguished by “curved, elongated and also angular” walls rather than true ring-walls, each built against the similar walls of other interments in the complex and measuring between 11 and 60 cm in width (Mughal, 1983: 9-13, 43, Table 7). These walls have also been described as “curvilinear . . . close to semi-circles” (Ibrahim, 1982: 26). The result of such architecture was a curious “interlocking” pattern of burial in which graves radiated outwards from a single, original interment which, unlike the others, possessed a “continuous” ring-wall (Crawford and Moon, 1997: 19; Ibrahim, 1982: 27; Killick and Moon, 2005: 2; Mughal, 1983: 11). The overall architecture of the Burial Complexes has naturally led to the tombs of both, which share the same basic pattern of construction, being labelled as “honeycomb” graves (Killick and Moon, 2005: 2, 4; Mughal, 1983: 11).

Whilst three graves (Burials 150, 150A, and 150B) have provided evidence of Period III reuse, most of the Burial Complexes have been firmly dated to a IIa-c chronological range with some postdating of the same (see Chapter 5, Fig. 2) (Højlund, 2007: 22-23; Mughal, 1983: 10-11, 21, 33-35, 64, Tables 3-5; Olijdram, 2010: 142, 147, Fig. 3; Potts, 1990: 312). Of particular note is the observation that multiple burials, which first appear in the Period Post IIc, take on a different guise in the complexes, where Post IIc interments were separated from

earlier ones “by a thick layer of sand” (Højlund, 2007: 127, 135, Fig. 261; Olijdam, 2010: 143-144). Some graves may indeed be older than Period II, owing to Arabian Gulf stamp seals and *série récente* steatite vessels having been found in them (Crawford and Moon, 1997: 19).

One of the three Burial Complexes was “small” and, though summarily investigated, deemed to harbor the graves of children (Ibrahim, 1982: 25, 28-29; Olijdam, 2010: 142, 144). “At least 60 child-size tombs” were encountered (Olijdam, 2010: 142). This seemed to isolate the age-group of the interments contained within the cemetery. However, the overall pattern of this third complex as well as the architectural plan of the graves within it closely followed those of its larger counterparts.

Finds from the Burial Complexes were generally similar and included skeletal remains, pottery of both “Barbar” and foreign make, fragments of baskets with bitumen lining, objects of copper and steatite, shells, and of course beads of various sorts (Højlund, 2007: 22; Ibrahim, 1982: 6, 28-29, 31-39, 68-89, Tables 1-5; Mughal, 1983: 4-5, 34-37, 61-69, Table 6; Olijdam, 2010: 147-149, Tables 2-6).

## **E. Bath-Tub Coffins**

Several clay coffins were excavated at Qala’at al-Bahrain that resembled the vessel which has served as their namesake. For this reason, they were called “bath-tub” coffins. The Danish Expedition, initially working at Qala’at from 1954 to 1970, discovered seven coffins of this sort in total: five in levels from Excavation 519 indicating the Late Dilmun reuse and rebuilding of the Early Dilmun palace situated in that area, and two from Excavation 520 behind the northern part of the city wall (Højlund, 1994c: 364; Højlund, 1997i: 145-152; Potts, 1990: 319).

The bath-tub coffins may be dated to Period IVd/e (i.e., Late Dilmun – see Chapter 5, Fig. 2) at Qala’at al-Bahrain and on the Islands, based on their position in the stratigraphy of Excavations 519 and 520 as well as the occasional associated find (Højlund, 1994c: 364; Højlund, 1997i: 145-152, 158-159; Potts, 1990: 320).

The dating of the coffins is further supported by two examples from Excavation 520 that possess ends which are respectively curved and straight (Højlund, 1997i: 159; Oates, 1986: 434; Potts, 1990: 320, Fig. 36). Coffins with such ends are known from 7<sup>th</sup> century BCE Nippur, in Mesopotamia, though they do not become the standard variety till the end of the

Neo-Babylonian period and the advent of the Achaemenian one (Højlund, 1997i: 159; Oates, 1986: 434). Other parallels from the Neo-Babylonian and Late Babylonian eras have been found at Assur, Babylon, Ur, and Uruk (Potts, 1990: 320). It has been suggested, however, that at least one if not more of the bath-tub coffins from Bahrain may post-date these and perhaps belong to “an advanced stage of the Achaemenian period”, here designated as Period IVe at Qala’at al-Bahrain (Højlund, 1994c: 364).

It has been assumed that bath-tub coffins were introduced into Bahrain from Mesopotamia, and could have represented the interments of a Mesopotamian section of Late Dilmun society (Lombard, 2000c: 119). Most of the coffins were devoid of grave furnishings, however, and only Coffin 1 from Excavation 519 produced a bead: this was a “flat, round, agate” specimen that was “pierced laterally” (Højlund, 1997i: 145, Fig. 687).

## **F. Pot Burials**

17 pot burials were excavated by the Danish Expedition working at Qala’at al-Bahrain between 1954 and 1970; these can be dated to Period IVe, having been deposited in “period IVd layers in abandoned houses” and post-dating these (see Chapter 5, Fig. 2) (Højlund, 1997i: 158). Like the larger interments, the dating of the pot burials was obtained through a consideration of their positions in Excavation 519, in relation to the architectural constructions about them, as well as via the style of the pots and other sherds found within them (Højlund, 1997i: 154, 158-159). 154 beads were recovered from the Qala’at pot burials (Højlund, 1997i: 154-157). However, these are not the sole representatives of this kind of interment on Bahrain, as many such burials from the Tylos era are also known (usually involving child interments) (Alsendi and Ibrahim, 2000: 144-145; Herling, 1994: 227; Herling, 2000: 138; Salles, 1986: 457).

## **G. The Tylos Period Graves of Bahrain**

Cemeteries belonging to the Tylos era have been excavated in several different parts of Bahrain, many of which have contributed beads to the Bahrain sample. Such cemeteries that concern us include those at Abu Saiba’, Hamad Town, Karranah, Saar, Shakhoura, and other sites (see Chapter 3, Fig. 1 and Chapter 7.6).

Tylos period graves “were most often built of stones set in mortar and plastered” (Salman and Andersen, 2009: 7). Alcoves, moreover, were completely absent and funerary assemblages were laid in the tombs alongside the interred remains (Salman and Andersen, 2009: 7). Orientation of the tombs followed an east-west alignment in the early centuries of Tylos, though they were later determined solely by practicality (Herling, 2000: 137-138; Salles, 1986: 452). Moreover, the placement of the deceased in the graves of the Tylos era differed from that of the Dilmun cultures, in which the dead were laid on their sides in a flexed position (Cleuziou, Lombard, and Salles, 1981: 30; Crawford and Moon, 1997: 16). The Tylos interments usually “were buried lying on their backs, their arms stretched out along the body, with the hands at hip level” (Herling, 2000: 139). Wooden coffins are also known from a small number of Tylos graves; three such coffins were discovered, for instance, in an investigation of a Tylos cemetery (i.e., designated DS 3) at Hamad Town (Salman and Andersen, 2009: 19, 183-184). Some of the graves have also provided indications of reuse (Herling, 2000: 138).

Though the Tylos period commenced with the arrival of Hellenistic influence into the region encompassing Bahrain and its surroundings, the oldest tombs attributed thereto and representing the beginnings of Phase I (according to the chronological subdivisions of the era – see Chapter 5, Fig. 2) “should not be dated earlier than the late third/early second century BC” (Andersen, 2007: 12). It has been assumed that prior to that time, Tylos burial practices on Bahrain were less visible and “elaborate”, and therefore have “left us with no evidence” (Andersen, 2007: 12).

During Phase I, however, whilst the internal architecture of the Tylos graves was clearly different from those of the Late Type Dilmun tumuli, as already noted, the tombs in themselves yet remained distinctly individual burials whilst still being surmounted by tumulus-like structures (Salles, 1986: 454-455; Salman and Andersen, 2009: 167, 171, 183). It was only in Phase II that the individual burial mounds of the Tylos era began to “coalesce”, with the distinction between them becoming invariably blurred (Salman and Andersen, 2009: 171, 183). In Phase III, additional tombs were introduced at the edge of the cemeteries (Salman and Andersen, 2009: 171, 183). Phases IV still had such tombs being constructed, though with “multi-chambers” appearing alongside the “simple cists” that were still being built (Salman and Andersen, 2009: 171, 183). Such seems also to have been the case during Phase V of the Tylos era (Salman and Andersen, 2009: 171, 183). Generally, a “gradual

change from individual to collective burials” appeared throughout Phases I to V of the Tylos era (Salman and Andersen, 2009: 173, 183).

Whilst some of the grave goods that accompanied Tylos burials in Bahrain possessed counterparts, in a general way, in the earlier Dilmun periods, new categories of items were also introduced; the wooden coffins already mentioned may be regarded as a case in point. Burial assemblages also included “funeral food” as well as “coins, and single beads placed in the deceased’s mouth” as “obols” (Herling, 2000: 139). Other finds derived from Tylos graves in Bahrain include jewellery pieces, shells, and items manufactured out of bone or ivory (Alsendi and Ibrahim, 2000: 145; Herling, 1994: 229).

Of particular interest is the glassware from the graves, which (alongside related funerary pottery) has laid the foundations of the phase system chronologically subdividing the Tylos era (see the previous chapter) and used above to chart the development of the era’s graves. With regard to the phases themselves, it is remarkable that different stylistic changes belonging to these have been noted that touch immediately upon Bahrain’s role in international commerce during this period. For example, apart from a “significant increase in the quantity of grave goods” in Phase III (i.e., c. 50 to c. 150 CE), it has also been observed that the glassware recovered from the burials of this time mostly came from workshops in the Eastern Mediterranean and must have arrived in Bahrain due to Tylos’ participation in “the international trade between the Roman Empire and India” (Salman and Andersen, 2009: 7). Moreover, in Phase IV, most of the glassware was brought to Bahrain after being produced in Mesopotamia or Iran (Salman and Andersen, 2009: 7). With respect to beads, and many from the Tylos era exemplify glass specimens, it can be stated from the start that they “are numerically by far the most common grave goods” (Salman and Andersen, 2009: 10).

# **PART II:**

# **ANALYSIS**

## **CHAPTER 7**

### **Spatial and Temporal Context of the Bahrain Sample**

#### **7.1 – Purpose**

Having provided a brief explanation of each of the essential features (see Chapter 4) crucial to the study of beads in the first part of this work, we are now in a position to embark on a descriptive and analytical coverage of these features as they appear in the bead sample from Bahrain. Doing so should tell us a great deal about the beads themselves. Once these features have been treated, we can then turn to an examination of the Bahrain Bead Typology itself and the Bahrain Bead Types that constitute it.

In this chapter, we will begin our coverage of the essential features by exploring the background information, contextual information, bead conditions, and chronological periods associated with the Bahrain sample. Our earlier presentation of the chronological system with which we are concerned as well as the sites and burial types pertinent to the Bahrain sample will be useful in this regard (see Chapters 5 and 6). We will also provide the first initial overview of the archaeological narrative of Bahrain's past, charting the progress of millennia based on previous archaeological studies of the Islands and observing how those aspects of the essential features being covered (i.e., the ones dealt with in this chapter, but primarily contextual information and chronological period, placed in their case against the backdrop of bead quantities) relate to this progress. This will be the basic scheme that will be used in the subsequent chapters of this work as well, each focusing on the descriptive treatment and (to a greater extent than this chapter) analysis of additional essential features and returning to the archaeological narrative to examine it from the standpoint of these in a "cumulative" fashion (i.e., building on information already covered in previous chapters but introducing the insights derived from the features it is immediately dealing with). Chapter 9 will, in addition to following the above framework, incorporate an analysis of the Bahrain Bead Typology, after which it will be possible to examine its archaeological narrative from the standpoint of the different Bahrain Bead Types as well.

By means of the process thus delineated, the Bahrain sample will be analyzed with regards to the essential features (of Chapter 4) and Bahrain Bead Types of its constituent

beads and these will be placed in relation to the broader chronological scheme of cultural and socio-economic development in Dilmun and Tylos. The process begins here, with an examination of the essential features that are the focus of this chapter.



## 7.2 – Approach to Sampling

In discussing background information, what is meant is all information pertaining to the actual sampling of the ancient beads of Bahrain. It is probably best to begin by reiterating that 4,813 individual beads have been catalogued, the bulk of these being currently stored at the Bahrain National Museum. Amongst the notable exceptions are those housed by the British Museum in London, which comprise the beads excavated by Captain R. Higham (119 specimens) and Mrs. E.P. Jefferson (two specimens only) (see *During Caspers*, 1980: 6, 12-15, 19, 39, 40-41, Pl. VII, Pl. XXIII, Pl. XXIX, Pl. XL). Moreover, two beads excavated by Colonel F.B. Prideaux during his 1906-07 excavations at ‘Aali have also been taken into account, despite very little information being available on these beads and none on their current whereabouts (see Prideaux, 1984: 113, 123).

Each of the 4,813 beads has been assigned a “B-number”, denoting its position within the sample of ancient beads from Bahrain. These run from B1 to B4828, with there being 15 numbers excluded from within the sample (due to changes made as part of the recording process). These account for the discrepancy between the total amount of B-numbers and beads within the sample.

Alongside the B-numbers, the original “A-numbers” attributed to particular collections of small finds (in this case, beads) have also been noted as representing the “inventory numbers” used by the Bahrain National Museum (see Chapter 3). Where an A-number is unavailable or else the bead specimen or collection concerned is better known by an inventory number assigned by a particular archaeological expedition and employed in its publications, such an inventory number has been noted instead. As a result, 413 individual inventory numbers have been noted for the bead sample (see Fig. 1). It was not possible to obtain such numbers for 275 specimens of the 4,813 total.



The 4,813 beads comprising 413 unique inventory numbers (and those specimens without such numbers) were excavated by 14 different archaeological ventures, including lone excavators; though it should be added that one of these comprised a joint venture between an archaeological mission from London and the Bahrain National Museum. This last endeavour has herein been considered as an independent team in its own right, despite assistance from the Bahrain National Museum. It should also be observed that there are 85 beads in the Bahrain sample without a determined excavator, as it was not possible for the author of this study to find information concerning the archaeological venture(s) behind them. However, it is very likely that one or more of the 14 teams referred to above may be responsible for recovering them.

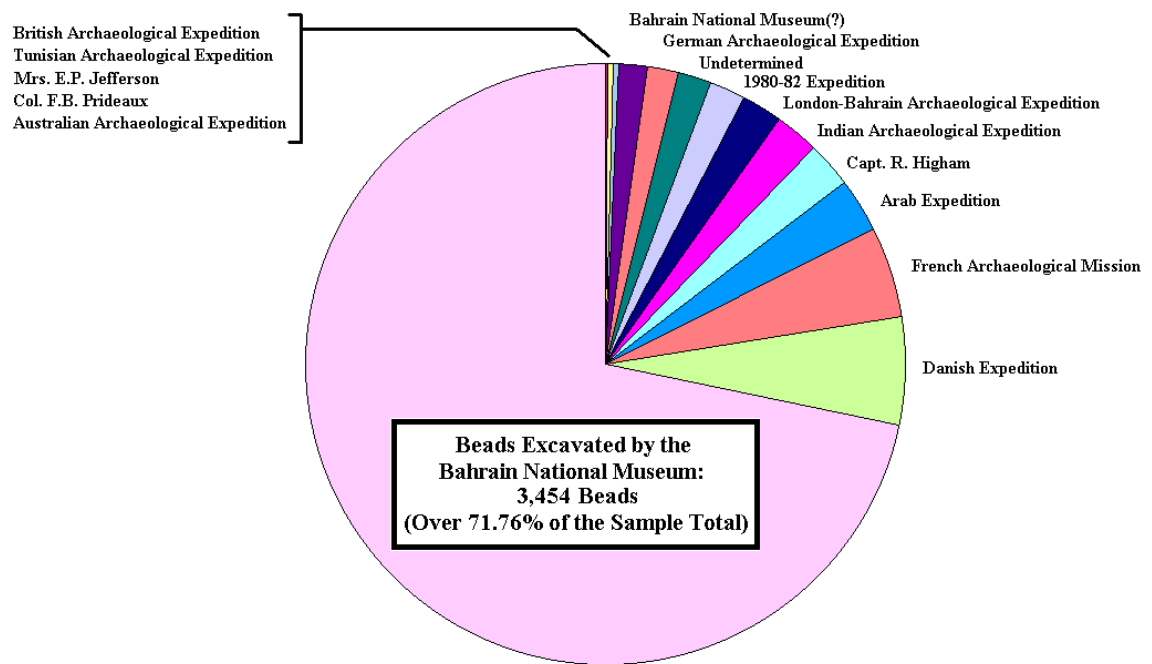
### **Archaeological Ventures and Individuals Associated with the Bahrain Sample**

- |     |   |
|-----|---|
| 1.  | The 1980-82 Archaeological Expedition to Saar |
| 2.  | The Arab Expedition                           |
| 3.  | The Australian Archaeological Expedition      |
| 4.  | The Bahrain National Museum team              |
| 5.  | The British Archaeological Expedition         |
| 6.  | Captain R. Higham                             |
| 7.  | Colonel F.B. Prideaux                         |
| 8.  | The Danish Expedition                         |
| 9.  | Mrs. E.P. Jefferson                           |
| 10. | The French Archaeological Mission             |
| 11. | The German Archaeological Expedition          |
| 12. | The Indian Archaeological Expedition          |
| 13. | The London-Bahrain Archaeological Expedition  |
| 14. | The Tunisian Archaeological Expedition        |

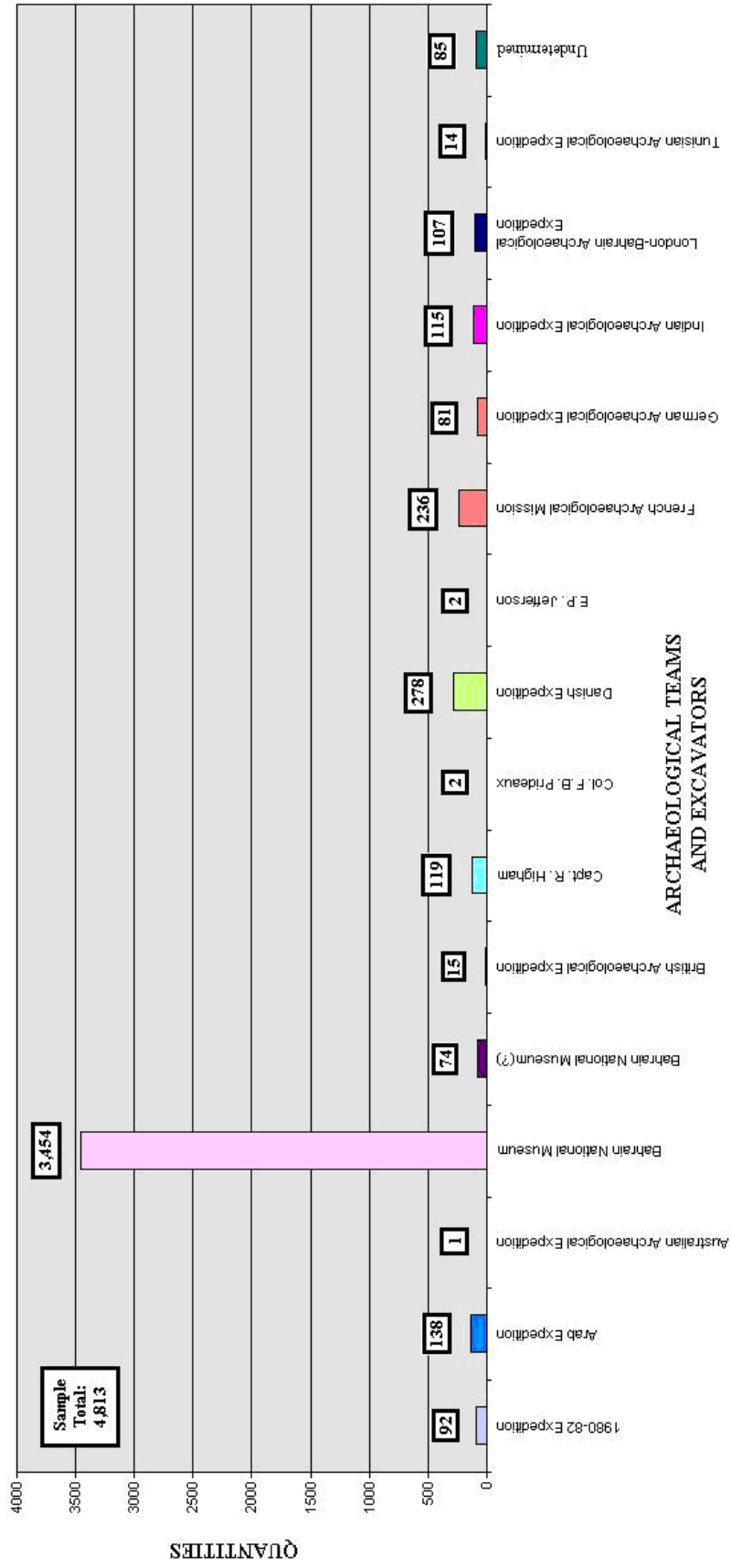
The greatest number of beads in the Bahrain sample was recovered through excavations organized by the Bahrain National Museum; this is only natural since we are dealing, after all, with beads from Bahrain's archaeological sites (see Fig. 2). 3,454 beads of the 4,813 total were excavated by the Bahrain National Museum or its predecessor in the Bahrain Antiquities Department (the efforts of the latter having been included above under the designation of the museum, since they are in effect one and the same). Only one bead in the Bahrain sample (B1612) was unearthed by the Australian Archaeological Expedition, and this

represents the other end of the spectrum of bead quantities provided by the archaeological ventures listed above (see Fig. 3).

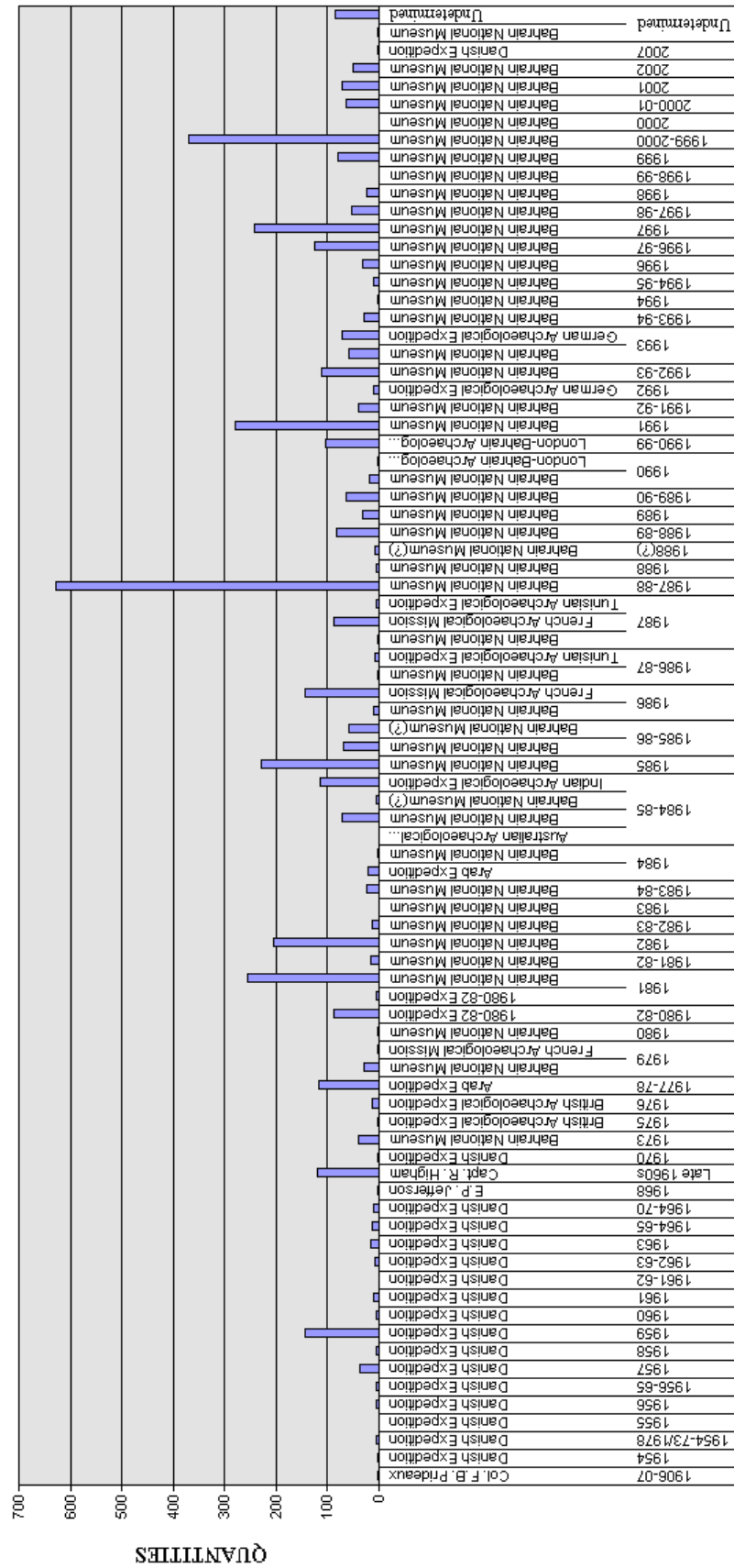
The beads themselves were obtained during various excavation seasons ranging from a 1906-07 season (as the earliest) to 2007 (as the latest) (see Fig. 4). The largest amount (627 beads) was obtained during the 1987-88 season by the Bahrain National Museum, followed by the second largest amount (370 beads) in 1999-2000. These amounts do not include those beads that could be regarded as part of an earlier or later season, but only those that fall securely into the season concerned.



**Fig. 2.** Pie chart graphically representing bead quantities as recovered by different archaeological teams and excavators and emphasizing the predominance of the Bahrain National Museum in this regard. Also included, under separate designations, are beads obtained by undetermined archaeological ventures and those suspected (without certainty) to have been excavated by the Bahrain National Museum.



**Fig. 3.** The different archaeological teams and excavators along with their respective contributions to the Bahrain bead sample total. Included are 74 beads suspected to have been recovered by a team from the Bahrain National Museum as well as 85 beads obtained by an undetermined archaeological venture.



# EXCAVATION SEASONS AND THE ARCHAEOLOGICAL TEAMS AND EXCAVATORS INVOLVED

Fig. 4. Graph showing the relative bead quantities comprising the Bahrain sample based on season and team/excavator.

### 7.3 – Archaeological Context

The 14 archaeological ventures referred to above obtained their beads from 17 different sites across Bahrain (see Chapter 3, Fig. 1). These sites included cemeteries belonging to the Dilmun and Tylos eras as well as other varieties of sites such as settlements and temples (see Chapter 6).

#### **Archaeological Sites Associated with the Bahrain Sample**

- |     |                    |
|-----|--------------------|
| 1.  | 'Aali              |
| 2.  | Abu Saiba'         |
| 3.  | Al-Hajjar          |
| 4.  | Al-Markh           |
| 5.  | Barbar             |
| 6.  | Budaiya'           |
| 7.  | Dar Kulayb         |
| 8.  | Diraz              |
| 9.  | Hamad Town         |
| 10. | Hamala             |
| 11. | Janabiyah          |
| 12. | Karranah           |
| 13. | Qala'at al-Bahrain |
| 14. | Saar               |
| 15. | Shakhoura          |
| 16. | Umm Jidr           |
| 17. | Wadi as-Sail       |

Of course, by associating the 14 archaeological ventures with them, it is not being implied that these 14 were the only teams or persons to excavate at the sites. What is being stipulated is that the archaeological work of these 14 at the sites listed above has contributed to the Bahrain sample. A breakdown portraying which teams/excavators have worked at which sites may be put together (see Tab. 1). However, what is more pertinent is an understanding of how the sites have contributed to the composition of the Bahrain bead sample.

A simple consideration of the quantities obtained from each site allows us to observe that the greatest amounts in the sample were derived from Hamad Town (1,179 beads), Saar

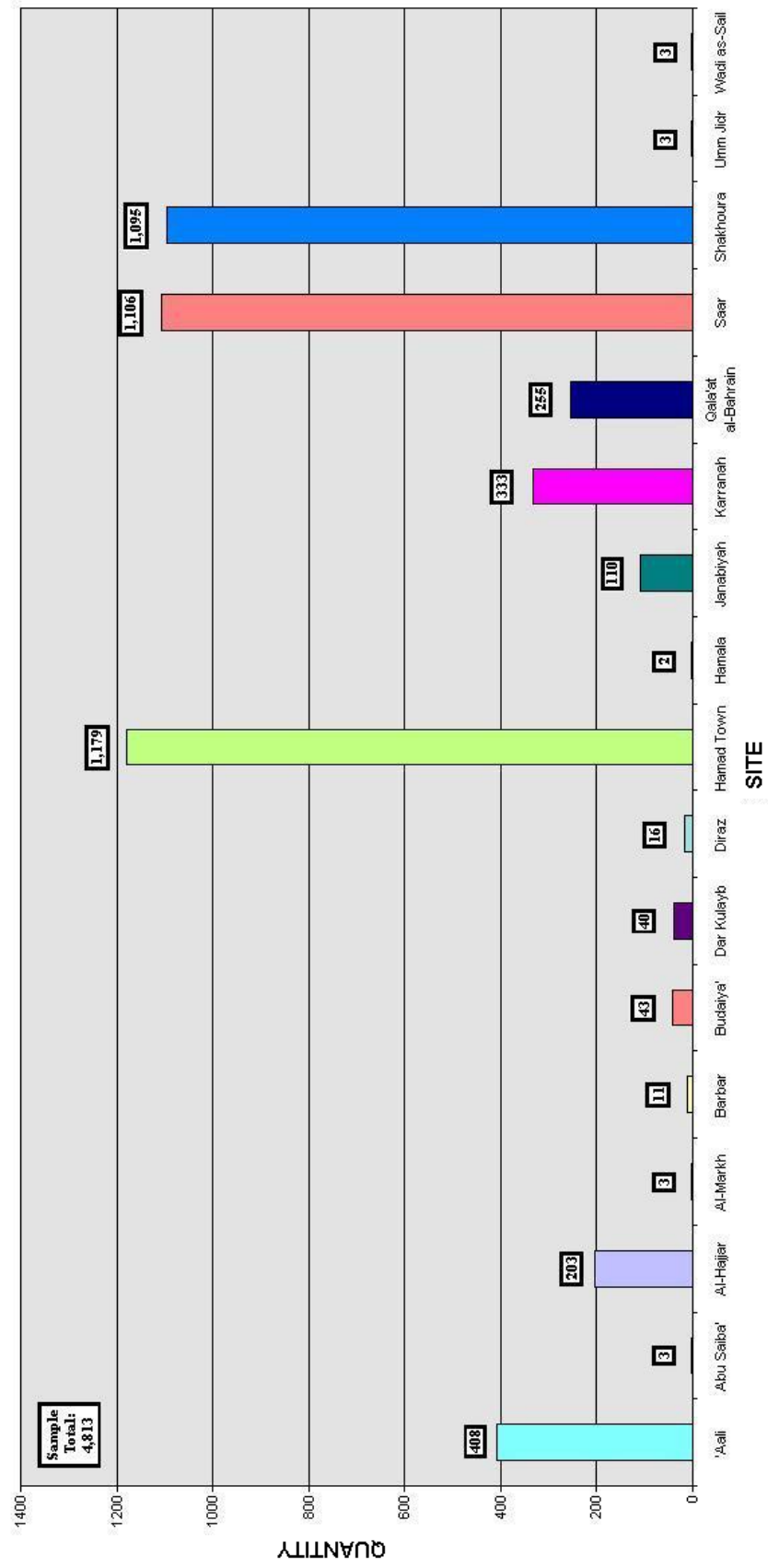
(1,106 beads), and Shakhoura (1,095 beads) respectively. There is then a decrease in the amounts catalogued from other sites, with only two beads (the smallest amount) coming from Hamala (see Fig. 5). These are the same two that were excavated by Mrs. E.P. Jefferson in 1968 (see During Caspers, 1980: 6, Pl. VII 2).

Within each of the sites listed above, specific contexts have been noted. These are the specific locations, burials, and divisions of the sites from which the beads have been excavated. 338 individual contexts have been recorded for the 17 archaeological sites, with there being undetermined ones at the sites of Hamad Town (three proveniences providing a total of 86 beads) and Karranah (two proveniences providing 49 beads) as well as ‘Aali and Shakhoura (one provenience each, providing 62 and 74 beads respectively); the number of excavation seasons at Hamad Town and Karranah may be used to distinguish how many such contexts at each concern the Bahrain sample (Figs. 6-12).

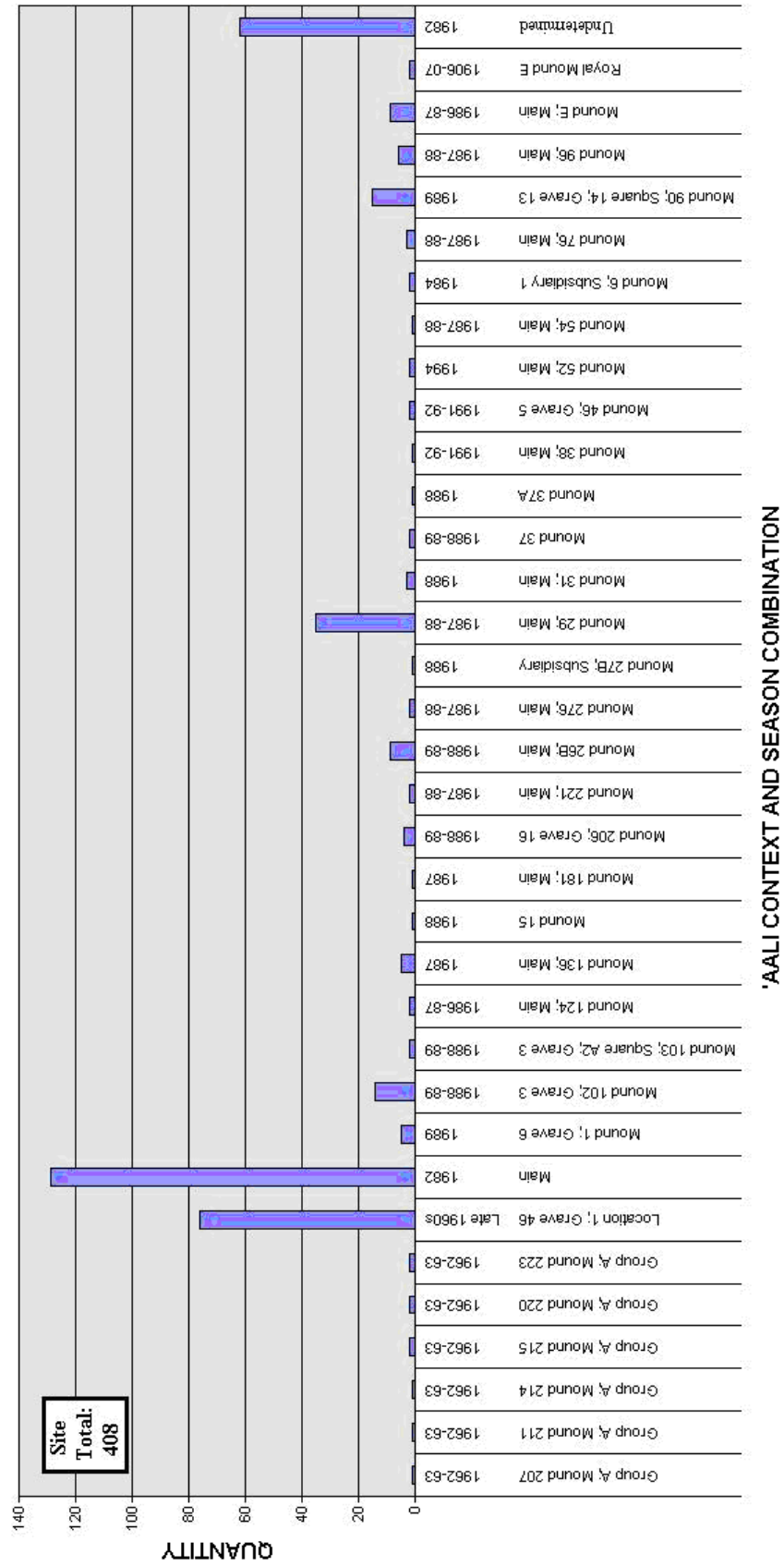


Site	Archaeological Team/Excavator
'Aali	1. Bahrain National Museum 2. Capt. R. Higham 3. Col. F.B. Prideaux 4. Danish Expedition 5. Tunisian Archaeological Expedition
Abu Saiba'	1. Bahrain National Museum 2. French Archaeological Mission
Al-Hajjar	1. Bahrain National Museum
Al-Markh	1. British Archaeological Expedition
Barbar	1. Danish Expedition
Budaiya'	1. Capt. R. Higham
Dar Kulayb	1. Bahrain National Museum
Diraz	1. Bahrain National Museum 2. British Archaeological Expedition
Hamad Town	1. Australian Archaeological Expedition 2. Bahrain National Museum 3. Indian Archaeological Expedition
Hamala	1. Mrs. E.P. Jefferson
Janabiyah	1. Bahrain National Museum
Karranah	1. Bahrain National Museum 2. French Archaeological Mission 3. German Archaeological Expedition
Qala'at al-Bahrain	1. Danish Expedition
Saar	1. 1980-82 Expedition 2. Arab Expedition 3. Bahrain National Museum 4. German Archaeological Expedition 5. London-Bahrain Archaeological Expedition
Shakhoura	1. Bahrain National Museum
Umm Jidr	1. French Archaeological Mission
Wadi as-Sail	1. Danish Expedition

**Tab. 1.** The 17 archaeological sites with which this study is concerned and the teams/excavators associated with each.



**Fig. 5.** The respective bead quantities derived from the 17 sites in Bahrain that have contributed to Bahrain sample. The number above each bar is the total recovered from and contributed by the site concerned.



**Fig. 6.** Bead quantities provided by archaeological proveniences (context and season combinations) within the site of 'Aali.

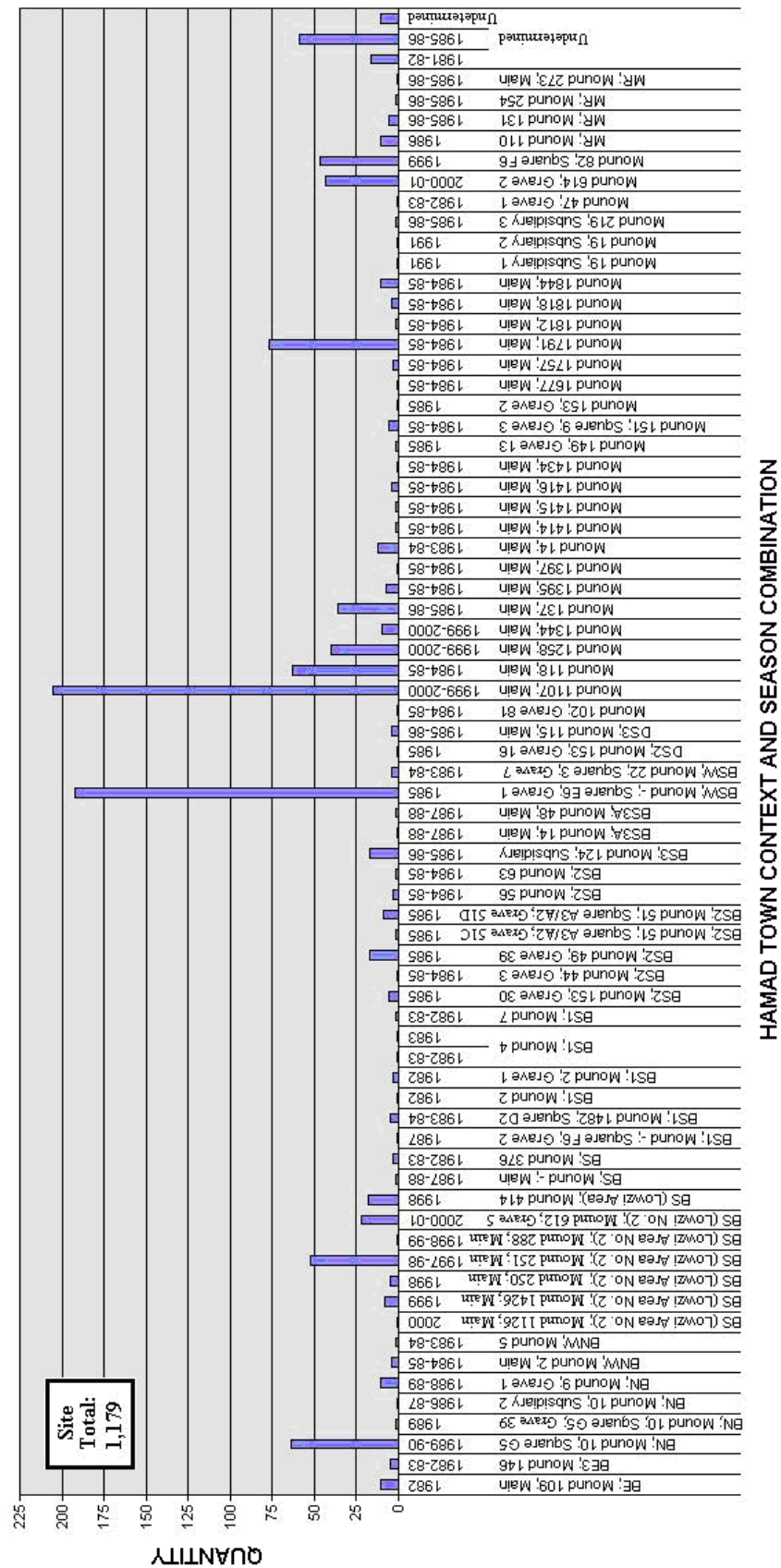
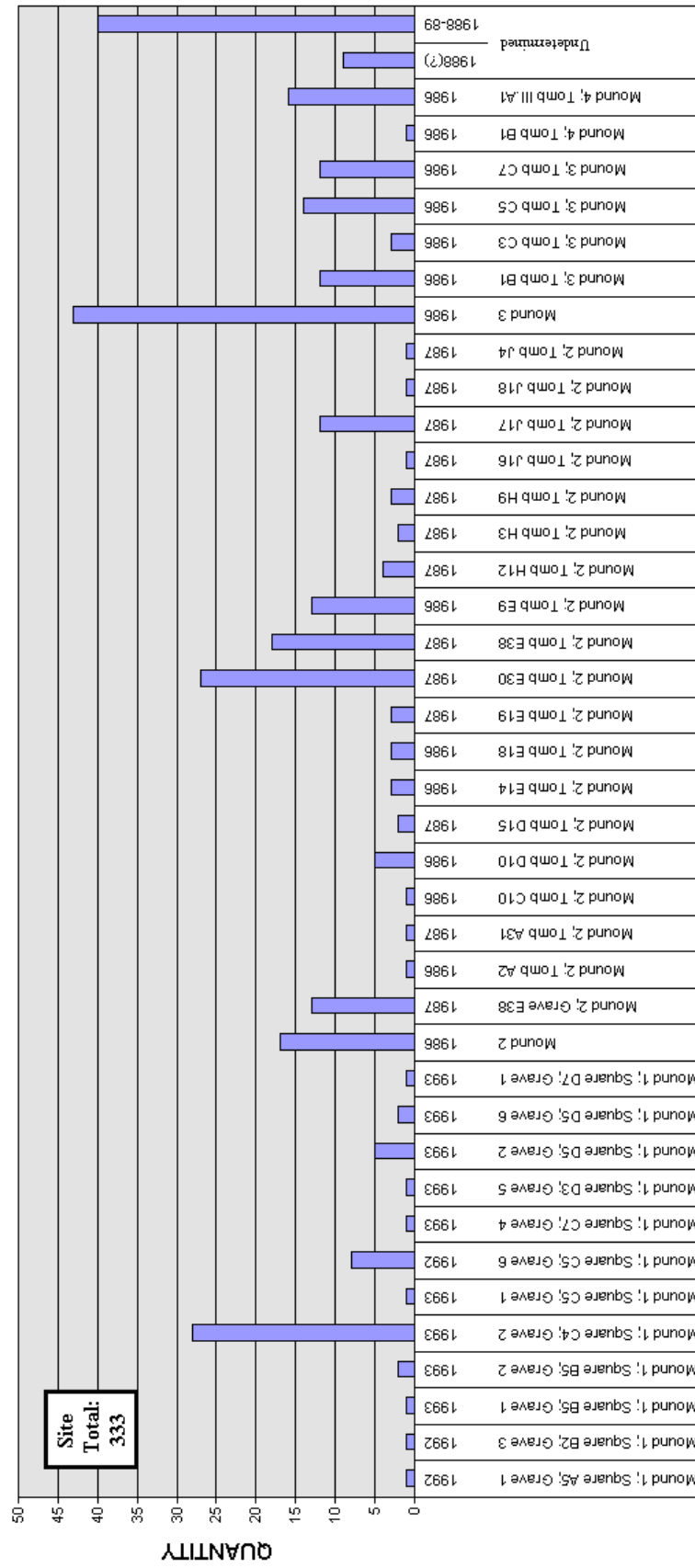
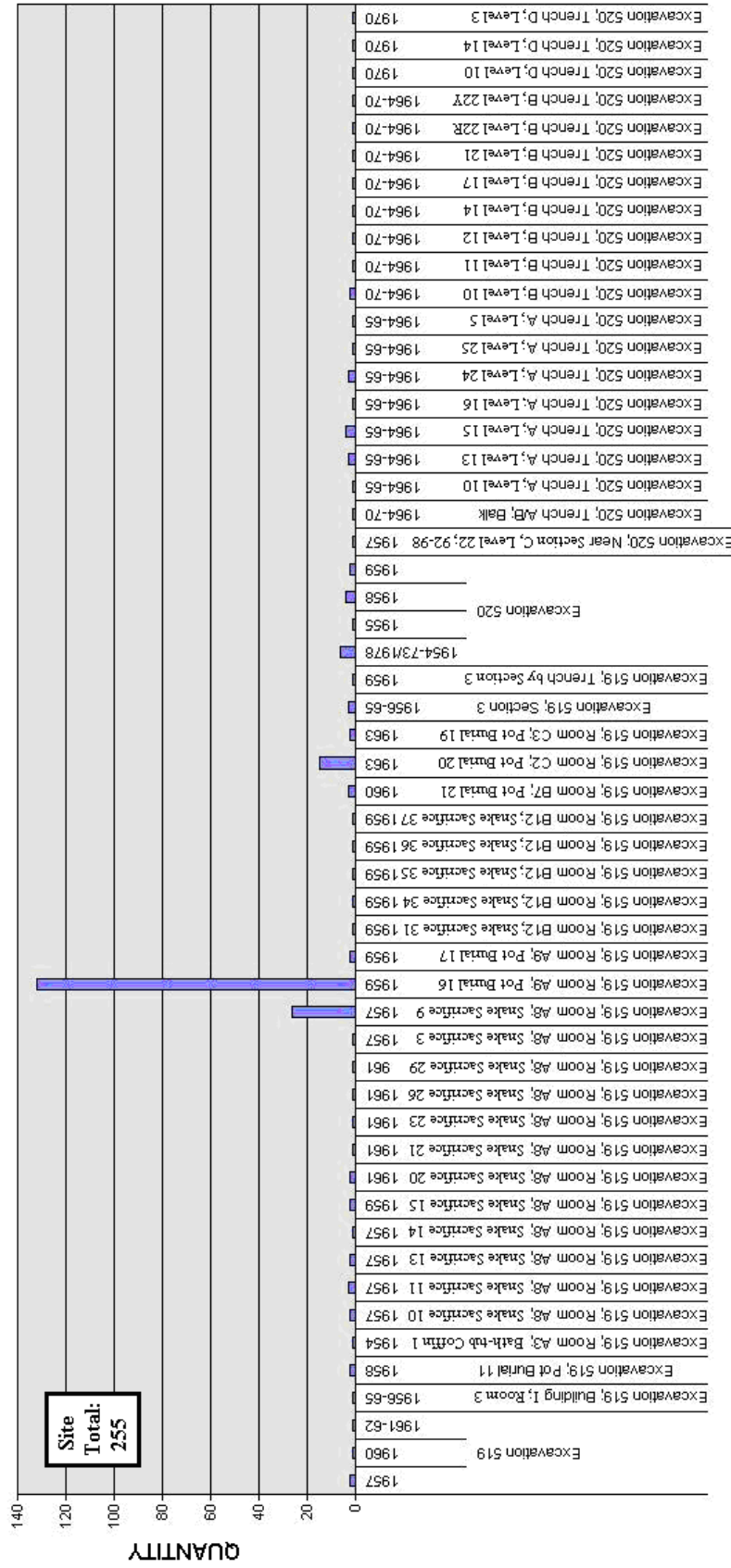


Fig. 7. Bead quantities provided by archaeological proveniences (context and season combinations) within the site of Hamad Town.



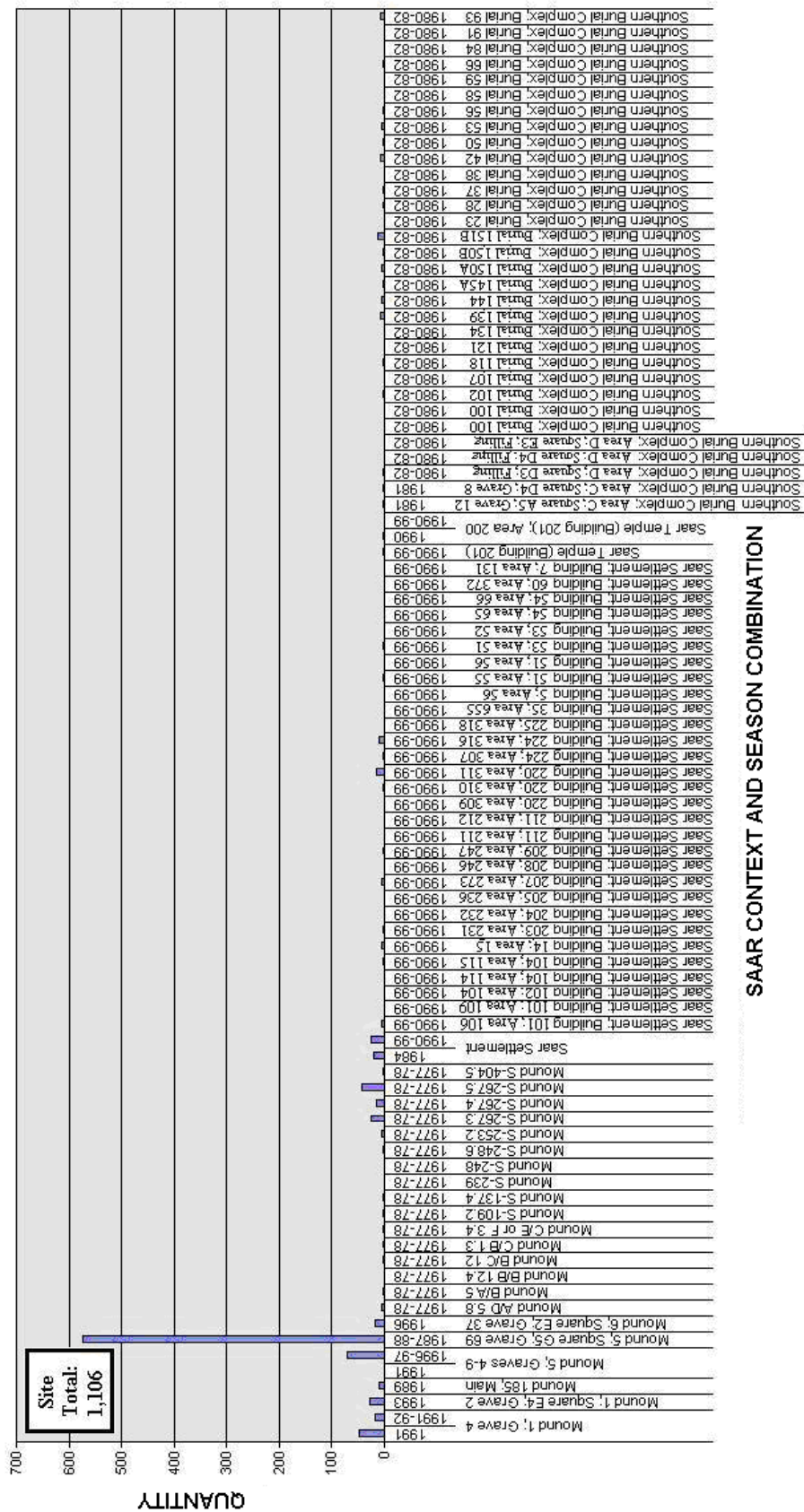
KARRANAH CONTEXT AND SEASON COMBINATION

Fig. 8. Bead quantities provided by archaeological proveniences (context and season combinations) within the site of Karrahan.



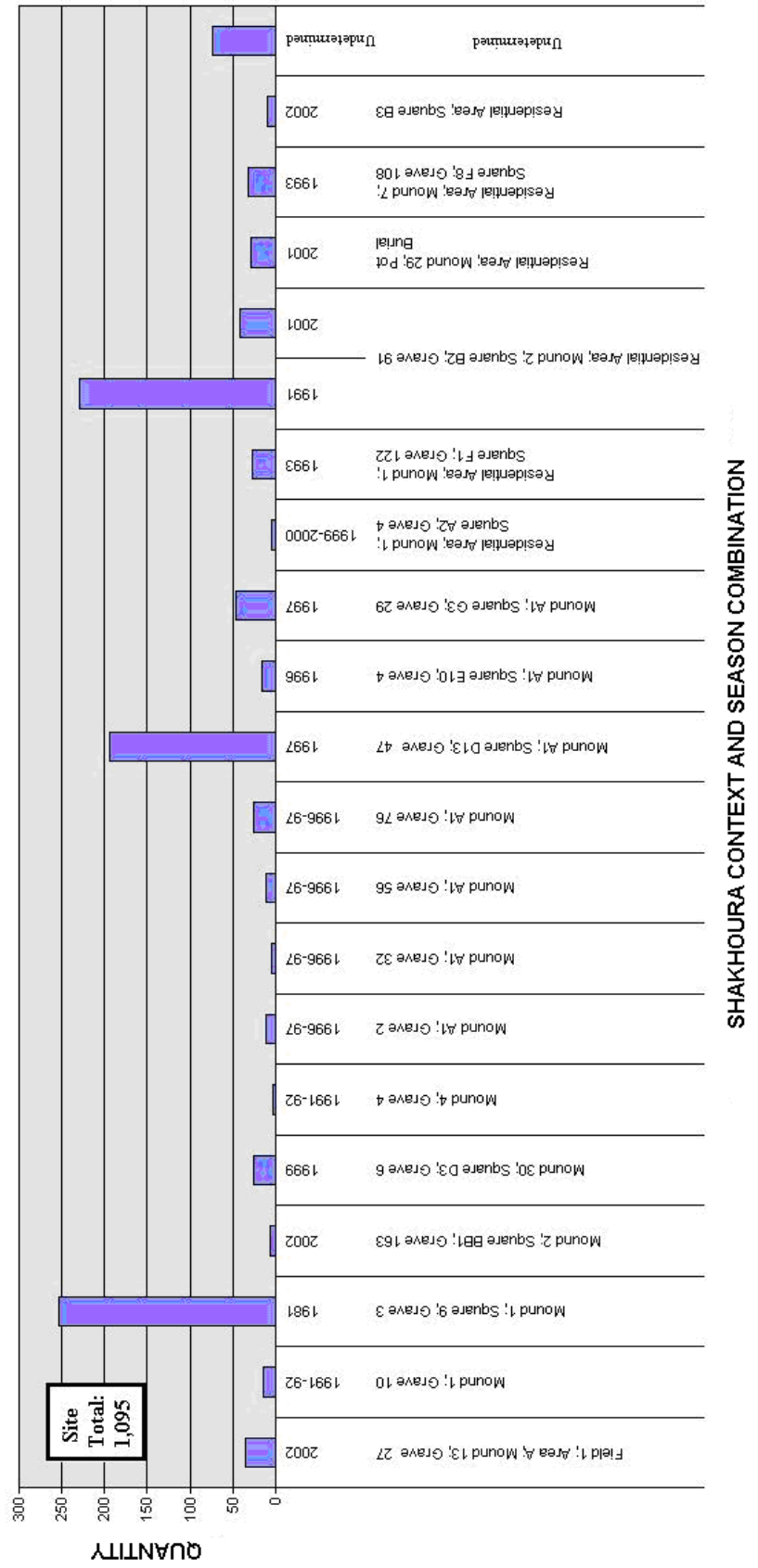
### QALA'AT AL-BAHRAIN CONTEXT AND SEASON COMBINATION

**Fig. 9.** Bead quantities provided by archaeological proveniences (context and season combinations) within the site of Qala'at al-Bahrain.



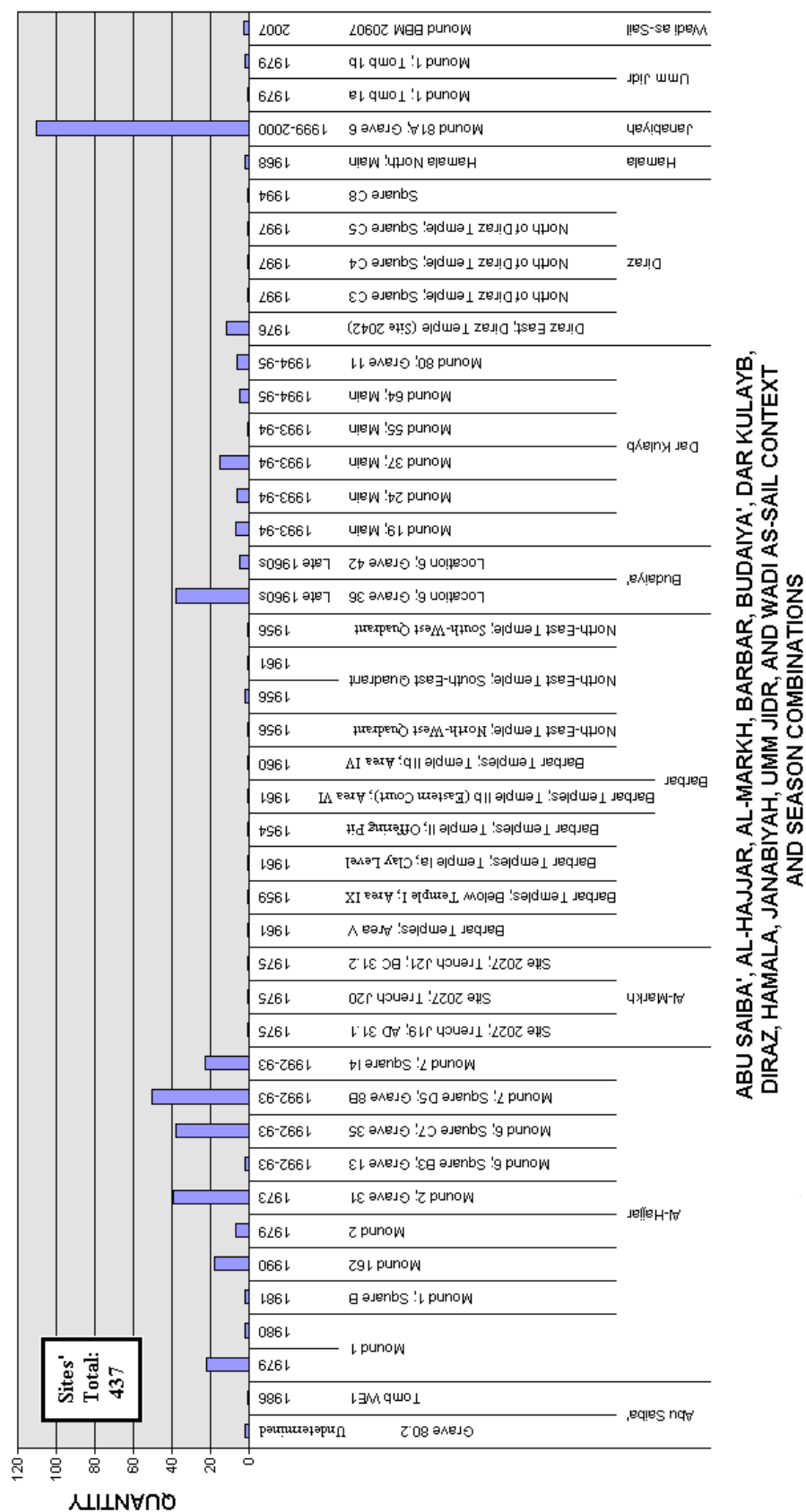
**Fig. 10.** Bead quantities provided by archaeological proveniences (context and season combinations) within the site of Saar. Where quantities seem non-existent, a very small amount is indicated if not a lone bead specimen.





**Fig. 11.** Bead quantities provided by archaeological proveniences (context and season combinations) within the site of Shakhoura.





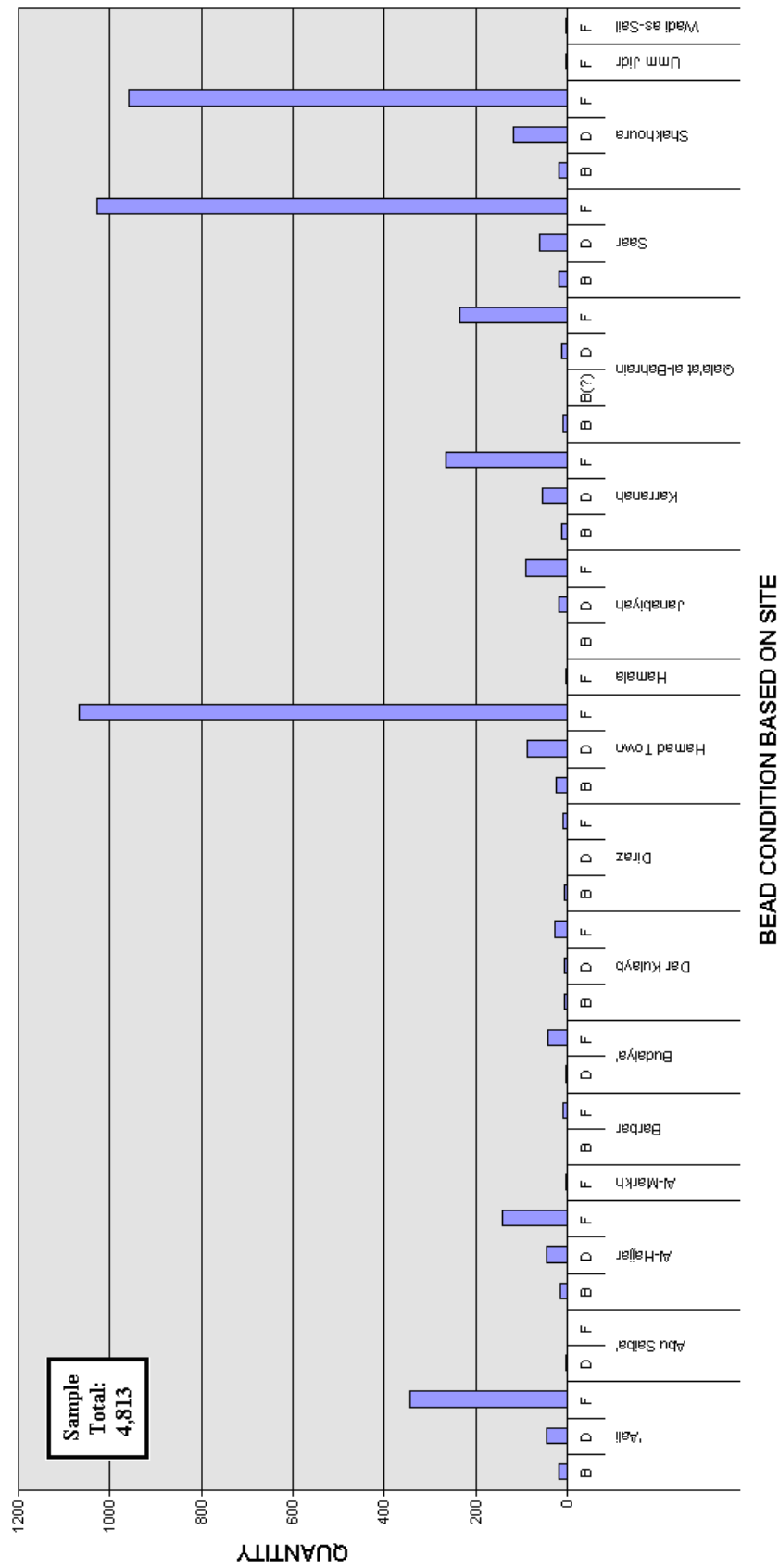
**Fig. 12.** Bead quantities provided by archaeological proveniences (context and season combinations) within the sites of Abu Saiba', al-Hajjar, al-Markh, Barbar, Budaiya', Dar Kulayb, Diraz, Hamala, Janabiyah, Umm Jidr, and Wadi as-Sail.

## 7.4 – Condition of the Beads

The beads coming from the 338 distinct contexts spread across the 17 sites have been preserved to varying degrees (see Fig. 13). These have been categorized as “fair”, “damaged”, or “broken”, depending on the specimen in question.

“Fair” indicates that, apart from the wear-and-tear of age and having been deposited in an archaeological context, the bead exhibits no damage or breakage that would qualify it to belong to one of the two other categories. “Damaged” beads are those that possess one or more chips, cracks, fractures, or breakages that, nonetheless, do not meet the criteria that would qualify for a “broken” specimen. “Broken” beads are those that possess breakages large enough to make the measuring of the specimen’s length or width impossible, or that are missing one or both ends or perforation-mouths due to such breakages. Naturally, any bead that has been broken so thoroughly as to leave only fragments that cannot be reconstructed qualifies as a “broken” one.

Of the 4,813 beads, 4,230 were in “fair” condition at the time they were catalogued. 451 were “damaged” when examined. 131 were broken. It should be pointed out that one particular bead (B368 in the Bahrain sample) has been considered as “possibly broken”, and this is because it was found to be an unworked (yet drilled) piece of green quartz; the breakage could thus have been part of separating the material from the quartz matrix or else caused after the material was drilled into a bead. This bead was recovered by the Danish Expedition from its Excavation 520 (see Højlund, 1994c: 392, Fig. 1968).



**Fig. 13.** Quantities of the different bead conditions across the 17 sites that have contributed to the Bahrain sample. "F" stands for "fair", "D" for "damaged", and "B" for "broken".

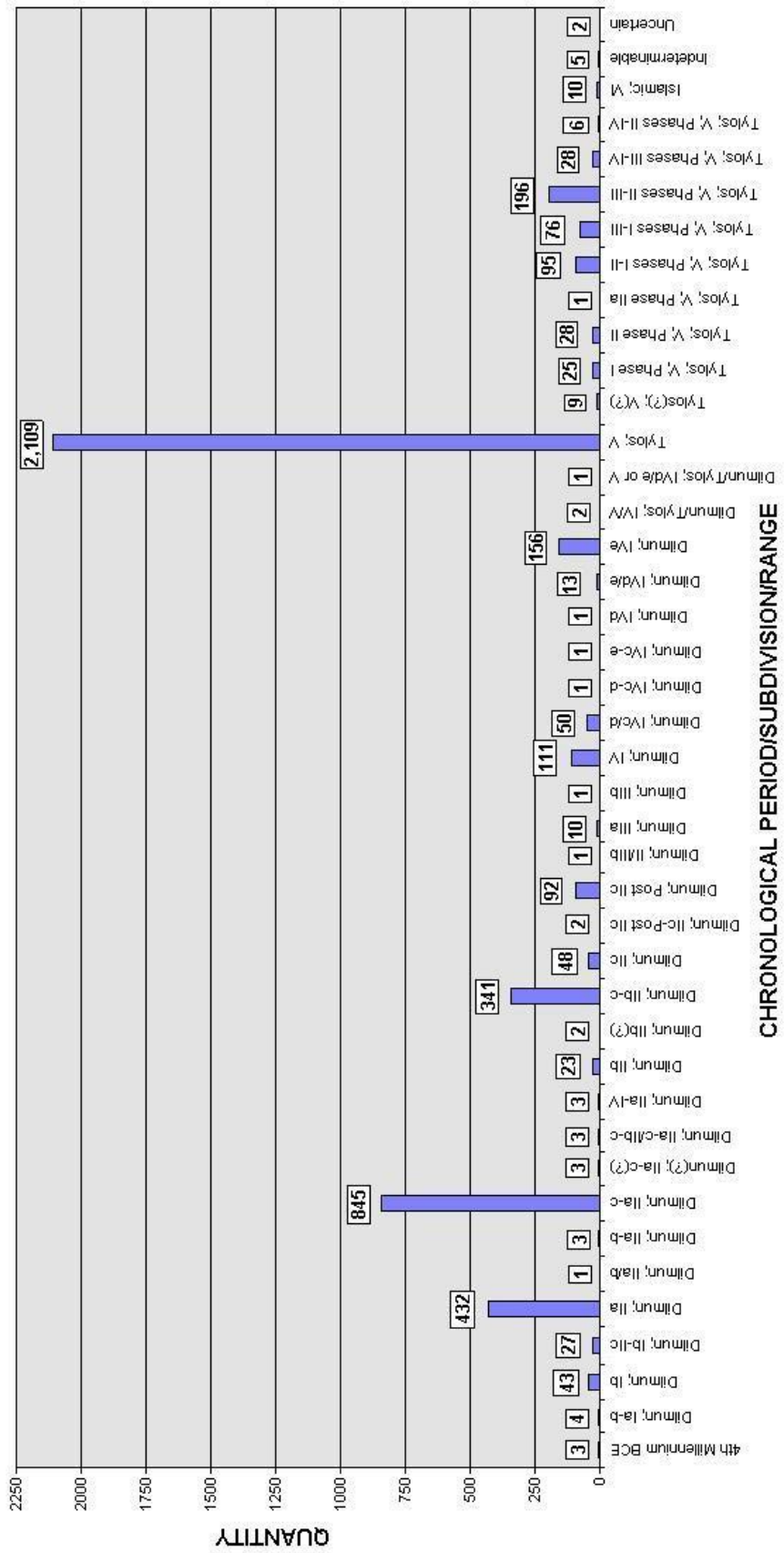
## 7.5 – Chronological Periods

The ancient beads of Bahrain comprising the sample behind this study consist of specimens from various chronological periods. The two overarching eras being dealt with are the Dilmun and Tylos periods on Bahrain. With each of these overarching eras, several periods can be designated if not subdivisions of these (see Chapter 5). The chronological origins of the Bahrain sample's beads can, in many cases, be pinpointed to one or another of these periods and (where possible) a particular subdivision; moreover, certain beads have been attributed to a chronological range involving two or more such subdivisions, either within or extending beyond the boundaries of a given period (see Fig. 14). Only two beads are chronologically “undetermined” due to uncertainty, whilst five are “indeterminable” (that is, there is at present no means of finding out which chronological period or subdivision the latter belong to). “Undetermined” beads are those that lack recorded contexts in the Bahrain sample database because these were not adequately documented by excavators or else could not be obtained by the author of this study. “Indeterminable” beads are those that present no possible means of establishing contexts; for instance, beads that were recovered as intrusive finds in a provenience other than their own.

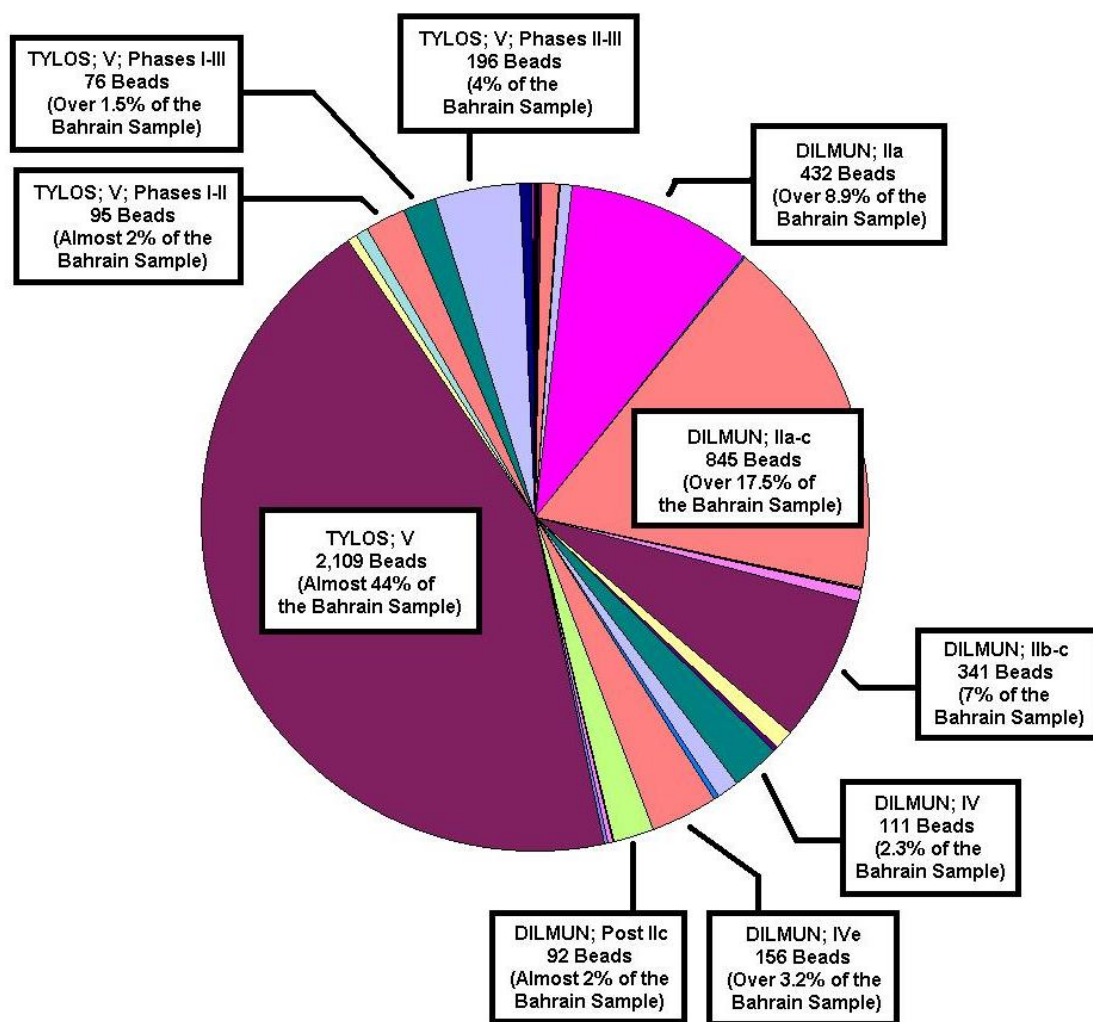
It should be added that three beads from the 4<sup>th</sup> millennium BCE (from the site of al-Markh), excavated by the British Archaeological Expedition, have been included in the Bahrain sample (see Roaf, 2003a: 9). Ten beads from the Islamic period (without reference to sub-period) have also been included. These beads, though not from the Dilmun or Tylos eras, have been nonetheless catalogued as part of the Bahrain sample. Their primary value lies in occasional comparisons with the main eras with which we are concerned, though they do not bear directly upon any study of the role of beads in Dilmun and Tylos beyond the limits of such comparison.

A certain amount of diversity may be observed in the attribution of the Bahrain sample beads to chronological periods, with almost every subdivision specifically present if not represented within a sweep of the chronological spectrum. Exceptions, such as Periods IVa and IVb of the Late Dilmun epoch, are few. The largest amount of beads attributable to a general chronological era rather than a sub-period is that of the 2,109 beads designated simply as “Tylos” (i.e., Period V) (see Fig. 15). This should, however, be distinguished from the total number of Tylos beads (i.e., 2,564 securely dated ones), obtained by including chronological subdivisions.

Of course, the chronological period into which a particular bead falls, when encountered in its original provenience, is usually bound up with the dating and other details attributed to its context (and this applies somewhat even in the case of burial reuses). It is therefore advisable for a full understanding of the beads that not only the chronological origins of each be considered but also put into perspective based on other considerations of provenience. Throughout the course of the archaeological narrative that comprises the rest of this chapter, we will attempt just that and in the same process gain glimpses into how the chronological attributions of the Bahrain sample shed led on the cultural and socio-economic development of Dilmun and Tylos.



**Fig. 14.** Quantitative breakdown of the Bahrain sample by chronological period/subdivision/range.



**Fig. 15.** Pie chart showing the quantitative breakdown of the Bahrain sample by chronological period/subdivision/range. The larger quantities are indicated along with the respective percentages they form of the sample total.

## **7.6 – Archaeological Narrative**

### **Introduction to the Narrative**

If one were to approach the subject of an archaeological narrative of ancient Bahrain from the standpoint of beads, it may initially be objected that the vast majority of beads comprising the Bahrain sample came from contexts plundered in antiquity and that any data, at least any that might be based on quantity, cannot be reliable (e.g. Herling, 1994: 228-231). Another thing that may be pointed out is the fact that the beads that have been obtained might well reflect, more than anything, the focus and activity of excavators (not to mention cataloguing by the author) rather than portray any true depiction of quantity.

Whilst on the surface such objections may seem valid, a very different picture appears when one examines the bead quantities of the Bahrain sample topographically, based on distribution at various sites across the Islands (see Maps 1-7). If one adds to this the information gleaned from a chronological consideration of the beads and counteracts the effects of grave robbing in antiquity by means of sizable bead amounts (as in the case of the majority of Period II, IV, and V specimens in the Bahrain sample), then a material basis is obtained to set against the backdrop of the general scheme of cultural and socio-economic trends and changes in the Dilmun and Tylos eras that has hitherto been suggested by scholars (see the sections below).

The Bahrain sample beads can therefore be included in a running archaeological narrative of the Dilmun and Tylos eras that will bring us chronologically up to the end of antiquity. Owing to the nature of the essential features being covered in this chapter (i.e., background information, contextual information, bead conditions, and chronological periods), this will actually allow us to initially put the Bahrain sample beads in perspective against the backdrop of such a narrative, rather than provide us with much that is new (despite occasional exceptions – e.g. the “Ningishzida” suggestion in the Period IV section below), which will really be the province of the more in-depth analysis given in Chapters 8 and 9.



## **The Oldest Beads Recovered from Bahrain**

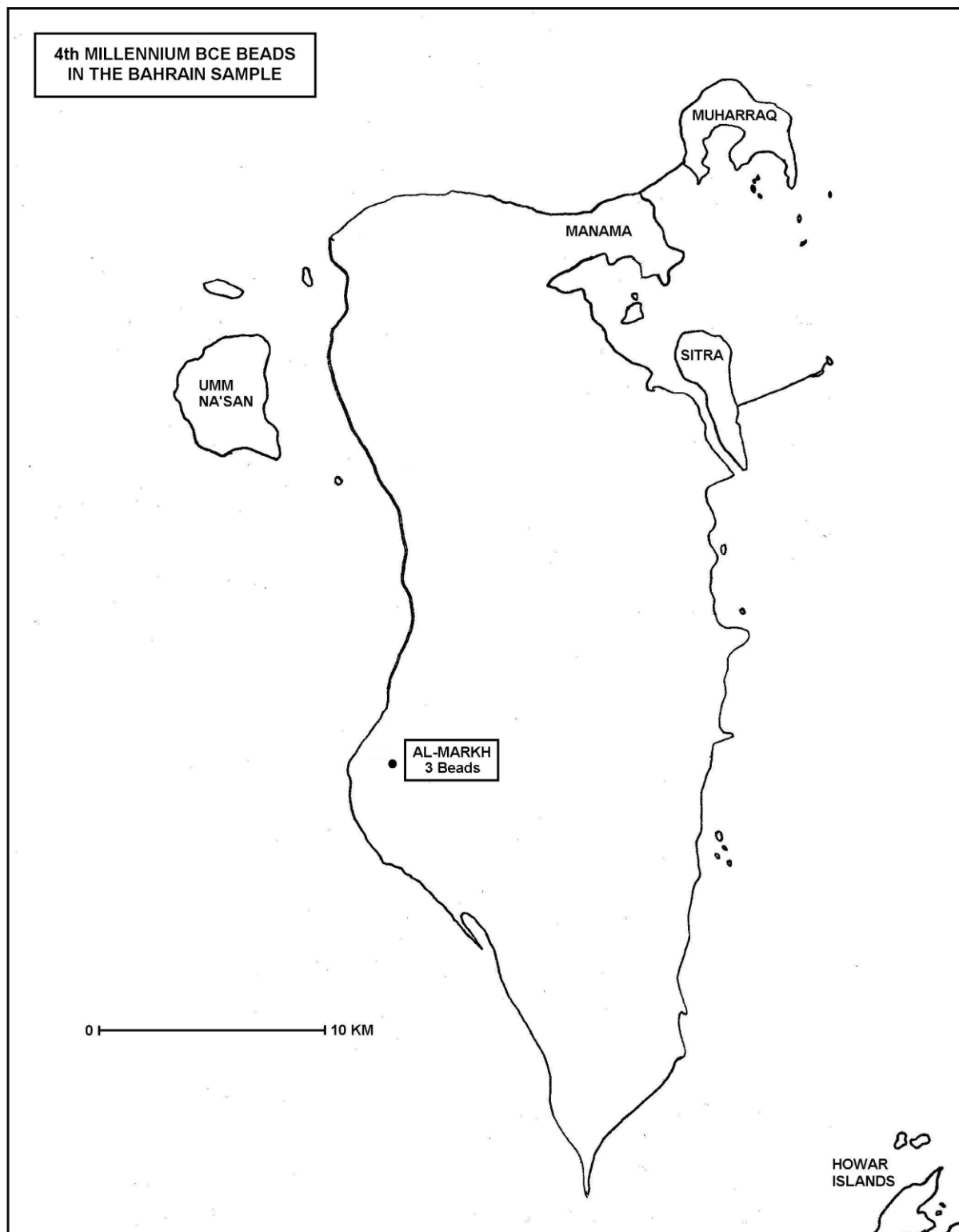
As far as non-burial sites go, the Bahrain sample has included amongst its published specimens three beads (B723, B724, and B725) that exemplify some of the oldest. They were obtained from the al-Markh site through the endeavours of the British Archaeological Expedition (see Map 1) (see Roaf, 2003a: 9). These three beads, two of shell and one of fish otolith, all go back to the 4<sup>th</sup> millennium BCE (specifically the Late Ubaid era) and were recovered from contexts with evidence for the ancient exploitation of Bahrain's marine environment (Roaf, 2003a: 8-11). Other beads from the Late Ubaid era may well have been found in Bahrain but do not constitute part of the Bahrain sample.

Turning to burial sites, the oldest beads thus far known have recently been pointed out to the author by Dr. Steffen Laursen (pers. comm., 2013). In his documentation of the "oldest burial" from Bahrain, Mound 26 from Hamad Town's BSW1 area, currently housed wholesale in the Bahrain National Museum's "Hall of Graves", we have a collection of beads accompanied by two Jemdet Nasr vessels (Laursen, pers. comm., 2013; Vine, 1993: 16). The accompanying Jemdet Nasr pots may suggest contact between Bahrain and Mesopotamia in the early 3<sup>rd</sup> millennium BCE, a notion offered in the past by a similar vessel from the earliest temple at Barbar (see Højlund, 2003a: 219, Fig. 392; Larsen, 1983: 77).

The bead collection from Mound 26 includes tabular biconical spacer beads (commonly described as "diamond-shaped"), of steatite and minute in size, that have also been observed in Hafit tombs on the Oman Peninsula, again in the company of Jemdet Nasr pottery, as well as from the Shara Temple of the Tell Agrab site where they represent the Early Dynastic period (Laursen, pers. comm., 2013). Owing to their provenience alongside Jemdet Nasr vessels in Laursen's "oldest burial", and considering the evidence from Oman, we may well consider them to belong to the era spanning 3100 to 2900 BCE. This qualifies them as the oldest burial beads so far recovered from the Bahrain Islands.

The "oldest grave", to which we have just referred, may be taken as iconic of the point of contact between the burial culture on mainland Arabia and Bahrain. Laursen has shown such tumuli followed a rocky promontory on the mainland (2008: 158-159). The oldest burial thus far discovered on Bahrain represents an early trace of the transference of that culture to Bahrain, but also indicates that whilst Bahrain may be viewed as an extension of the "Northern Burial Culture" of the mainland (see Crawford, 1998: 5-8, 43). This culture, as Dr. Flemming Højlund has pointed out, was in evidence on the mainland at the beginning of the

3<sup>rd</sup> millennium BCE (2007: 123). After arriving on Bahrain at that time, if the oldest burial described above and similar cases with Jemdet Nasr pots are to be relied upon, it then shaped the beginnings of Dilmun on the Islands that would eventually crystallize in the late 3<sup>rd</sup> millennium BCE into Bahrain's Period I.



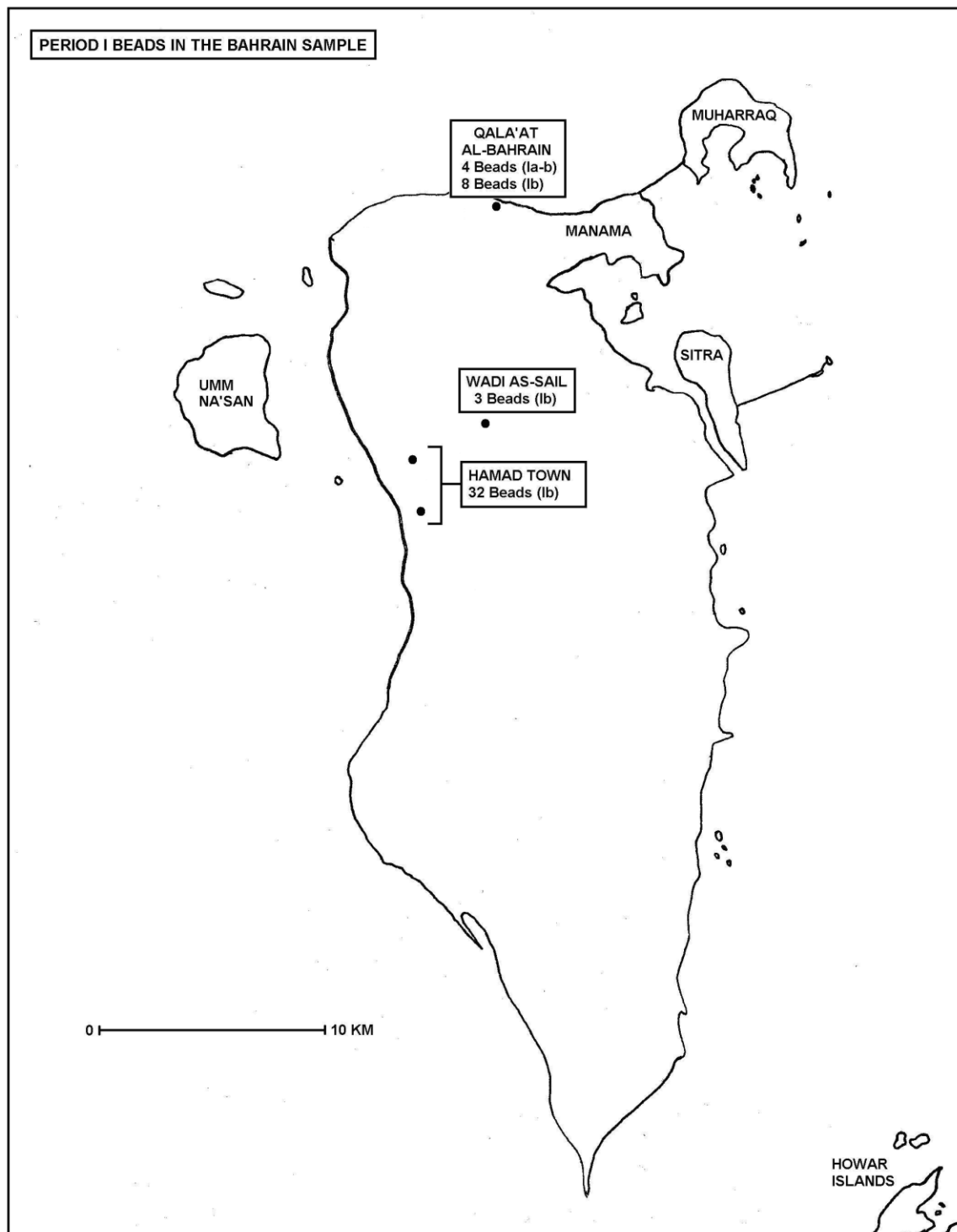
**Map 1.** The location of al-Markh, the only site that has contributed 4th millennium BCE beads (specifically of the Late Ubaid era) to the Bahrain sample. The number of beads contributed by it has been indicated.

## Period I and Its Subdivisions

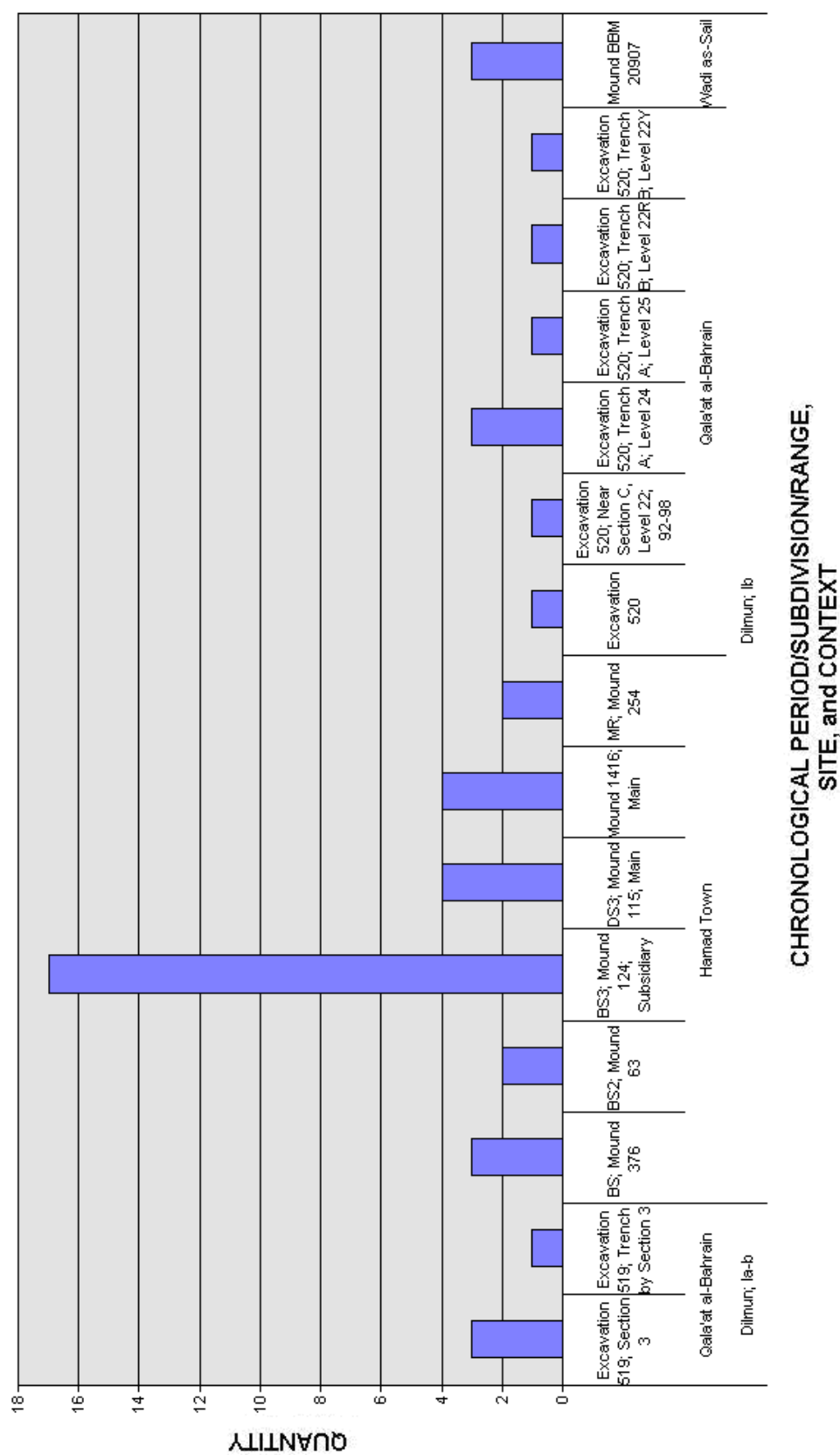
From the standpoint of mortuary culture, it may be observed that the Early Type burial mounds of Period I were built along the “slopes of Bahrain’s central limestone formation” (Laursen, 2008: 157-159). Although no beads from Period Ia are contained within the Bahrain sample to indicate this (i.e., we only have beads from an urban site belonging to a Ia-b chronological range), we certainly have some from Period Ib (see Map 2). Discounting those that belong to chronological ranges that include Ib and may belong to it or a later epoch, we have 32 beads from Hamad Town and 3 from Wadi as-Sail that hint at the Early Type mounds’ spatial distribution, for both sites skirt the rocky escarpment, the so-called “basin”, of the limestone formation referred to above (see Fig. 16) (see Højlund *et al.*, 2008: 149, Fig. 17; Laursen, 2008: 157-159).

As Dr. Flemming Højlund has mentioned, it is unclear how the early tumuli situated along the slopes of the escarpment related to settlement patterns on the Bahrain Islands (2007: 130). He has also pointed out that the only settlement belonging to this epoch that we may acknowledge (based on our information at this time) is that at Qala’at al-Bahrain (2007: 130). Indeed, the Bahrain sample has given us 4 Qala’at al-Bahrain beads belonging to a Period Ia-b chronological range and 8 belonging securely to Period Ib, but none from elsewhere for no other non-burial site has been linked specifically to this epoch (see Fig. 16).

On the whole, Period I began as an era of “small scale socio-political development” that culminated upon Bahrain in its Ib subdivision (Højlund, 2007: 123). By the latter, the earliest City at Qala’at al-Bahrain had grown in size though it was still a rather meager settlement (Bibby, 1986a: 114). Despite this, both the site and the Early Dilmun culture it represented were involved in trade with Bahrain’s neighbours in the Arabian Gulf region as well as locales more distant, as the bead materials spanning its contributions to the Bahrain sample show (see Chapter 8.2).



**Map 2.** The locations of sites that have contributed beads to the Bahrain sample which belong to Period I. Bead quantities pertaining to the sites are also given, organized by chronological subdivision/range. 27 specimens (B1567 to B1593) from Hamad Town belonging to a Ib-IIc chronological range are not included in the map, since they could belong to one of the first three chronological subdivisions of Period II rather than Period Ib.



## **Period II and Its Subdivisions**

### **A. The Transformation of Bahrain in Period IIa**

In Period IIa, however, it seems that the social structure of the Bahrain Islands was transformed from an earlier and simpler mode into one that amounted to a new level of organization (Laursen, 2008: 156; Laursen, 2010: 115, 132-133). It is also at this time that the burial mound fields were beginning to burgeon, and this coincided with the setting in of such organization. This has been deemed to reflect a “hierarchical social structure” (Højlund, 2007: 130).

Other manifestations of this hierarchy and what may indeed be “the formation of a Dilmun state” may be observed in the enlargement of Qala’at al-Bahrain to 15 hectares, the building of storerooms at the city, and the rearing of walls that surround it as well as the appearance of the Barbar Temples, a local style of stamp seals (Proto-Dilmun initially, that is, the Arabian Gulf type, which evolved into the Mature Dilmun style), and a culture of pottery with a distinctly “Dilmun” identity beginning to come through its types (Al-Sindi, 1999; Højlund, 2007: 124; Kjaerum, 1994). The nature (i.e., material preferences, style of decoration, Bahrain Bead Types, etc.) of the Early Dilmun beads reflected a similar identity (see Chapters 8.5 and 9.6).

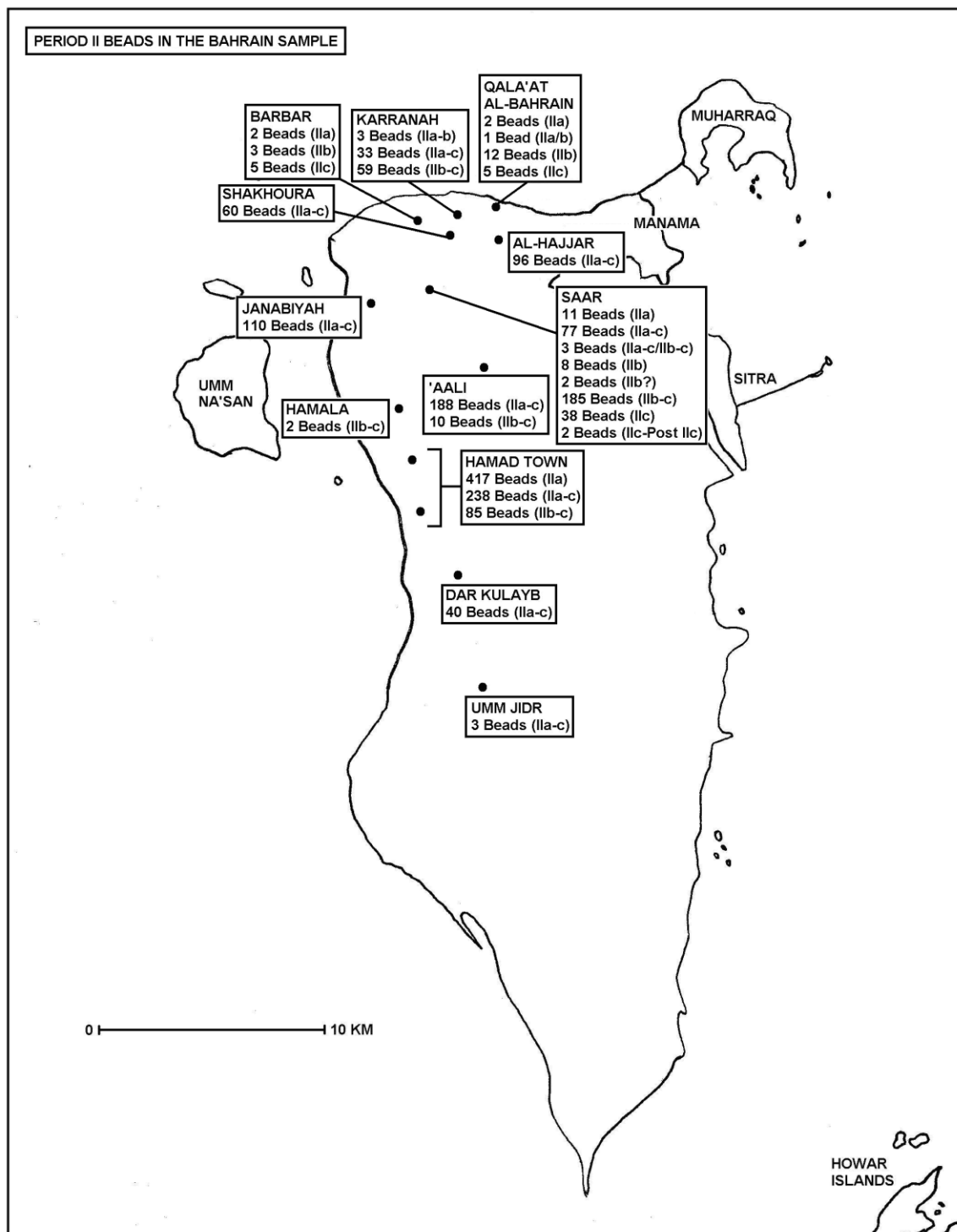
### **B. Period II Funerary Beads and the Burial Mound Fields**

As we have already mentioned, Period IIa on Bahrain saw the burgeoning of the burial mound fields. The early belt of Period I tumuli became augmented at this time by the appearance of small fields that eventually grew into eight large cemeteries that subsumed the belt (Højlund, 2007: 129). However, in many places, the formation of the cemeteries still preserved the general trend of the earlier Period I mound distribution, for instance following the rocky escarpment of the same.

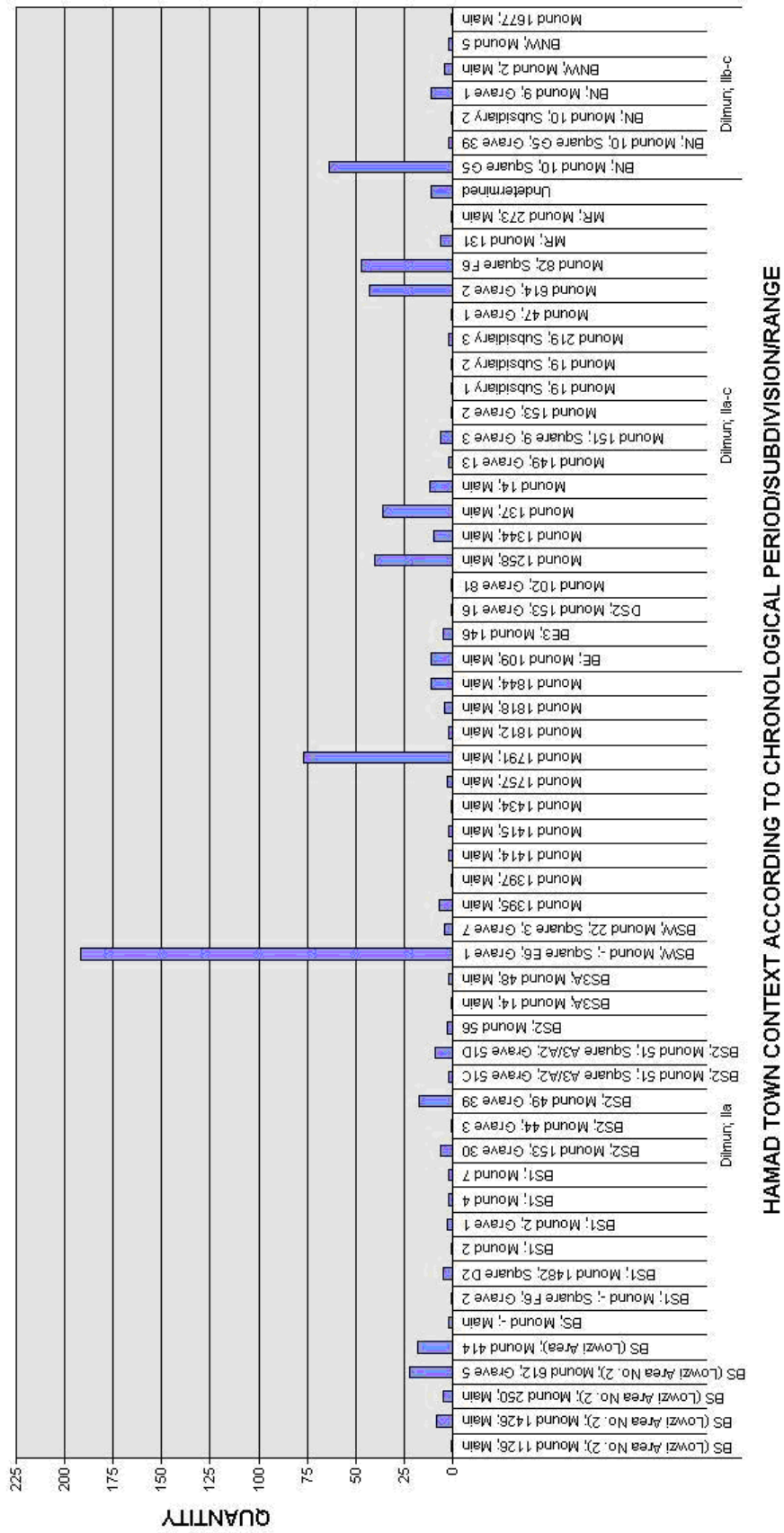
Evidence of the growth of the mound fields may be seen in the sudden boom in Period IIa funerary beads in the Bahrain sample, compared to the earlier period. A clear indication is the major gap and sudden leap visible between the 32 Period Ib beads (and not considering the 27 that may belong to Period Ib or else one of the subdivisions of Period II up to IIc) from the Hamad Town mound field and the 417 that are undoubted Period IIa beads from the same

site (Fig. 17). Furthermore, there are 238 beads that may also belong to IIa, though some of these may equally belong to later subdivisions of Period II (i.e., IIb or IIc). However, if we only stick to the difference between beads that are definitely Ib and IIa from Hamad Town (comparing 32 specimens to 417), what is seen is an increase of more than 1,300%; a significant leap! If the funerary beads of Hamad Town are anything to go by, the exponential manner in which the burial culture of Early Dilmun exploded within already existent cemeteries (not to mention the emergence of new ones) cannot be overstated (see Map 3). It is worth noting that the remarkable growth in burial culture thus exhibited may be linked to population increase as well as the effects of social stratification at Qala'at al-Bahrain reverberating throughout Bahrain in Period IIa, as has recently been demonstrated with regard to the Karzakkan "proto-cemetery" at Hamad Town (Laursen, 2010).





**Map 3.** The locations of sites that have contributed beads to the Bahrain sample which belong to Period II. Bead quantities pertaining to the sites are also given, organized by chronological subdivision/range. Beads B366, B4115, B4116, and B4117 as well as specimens B1567 to B1593 are not included amongst the quantities in this map, since they could belong to a chronological era other than Period II.



# HAMAD TOWN CONTEXT ACCORDING TO CHRONOLOGICAL PERIOD/SUBDIVISION/RANGE

**Fig. 17.** Bahrain sample bead quantities from different Period II or related contexts within the site of Hamad Town. Beads B1567 to B1593 are not taken into account in this graph, since they could belong to Period I rather than Period II.

During Early Dilmun's Period IIa, what essentially occurred was the emergence of a more developed funerary culture that complemented the Dilmun identity encapsulated by the new glyptic seal styles (Arabian Gulf and Mature Dilmun) and pottery culture of Bahrain. The cause of this development was the establishment of Dilmun's unique identity because of its economic importance to Mesopotamia and trade in the Arabian Gulf. And this identity was bound up with the emergence of a Dilmun state (Højlund, 2007: 124).

Of course, the above does not preclude the existence of any organization that may be likened to a state in Period I. Indeed, "sculptured steatite vessels" from Tarut belonging to a c. 2700-2500 BCE chronological bracket as well as a c. 2400 BCE cuneiform text mentioning a "Queen of Dilmun" suggests otherwise (at least, on a more modest scale) or else that some sort of hierarchical division of the social structure of Dilmun already existed in Period I (see Højlund, 2007: 123). However, in Period II, a definite social structure appeared on Bahrain that possessed every trait of a state, in the organized sense. We even have an epigraphic reference to a "King of Dilmun", which seems much more at home in this period than a Queen of Dilmun would seem to us in the preceding one (see Højlund, 2007: 124; Howard-Carter, 1987: 90; Laursen, 2008: 155, 165).

Period II, as a whole, may be considered a sort of "coming into one's own" as far as Dilmun is concerned. Evidence of this may be found in the development of the mound fields as well as the Period II bead quantities catalogued from the different fields and belonging to various chronological subdivisions or ranges.

In the Bahrain bead sample, six of the eight Period II mound fields referred to by Højlund are represented; Buri and 'Isa Town are not. The designation "Hamad Town" in the sample covers the Karzakkan and Malikiyah cemeteries, whilst Dar Kulayb still retains its own unique identity as a cemetery (see Chapter 6). The six cemeteries, compared to the three (i.e., the two represented by Hamad Town and Wadi as-Sail as an extension of 'Aali) from Period Ib, allow the beads to portray the appearance of the new bounded fields in Period II (see Fig. 18).

### **C. Burial Beads of the “Fertile Strip”**

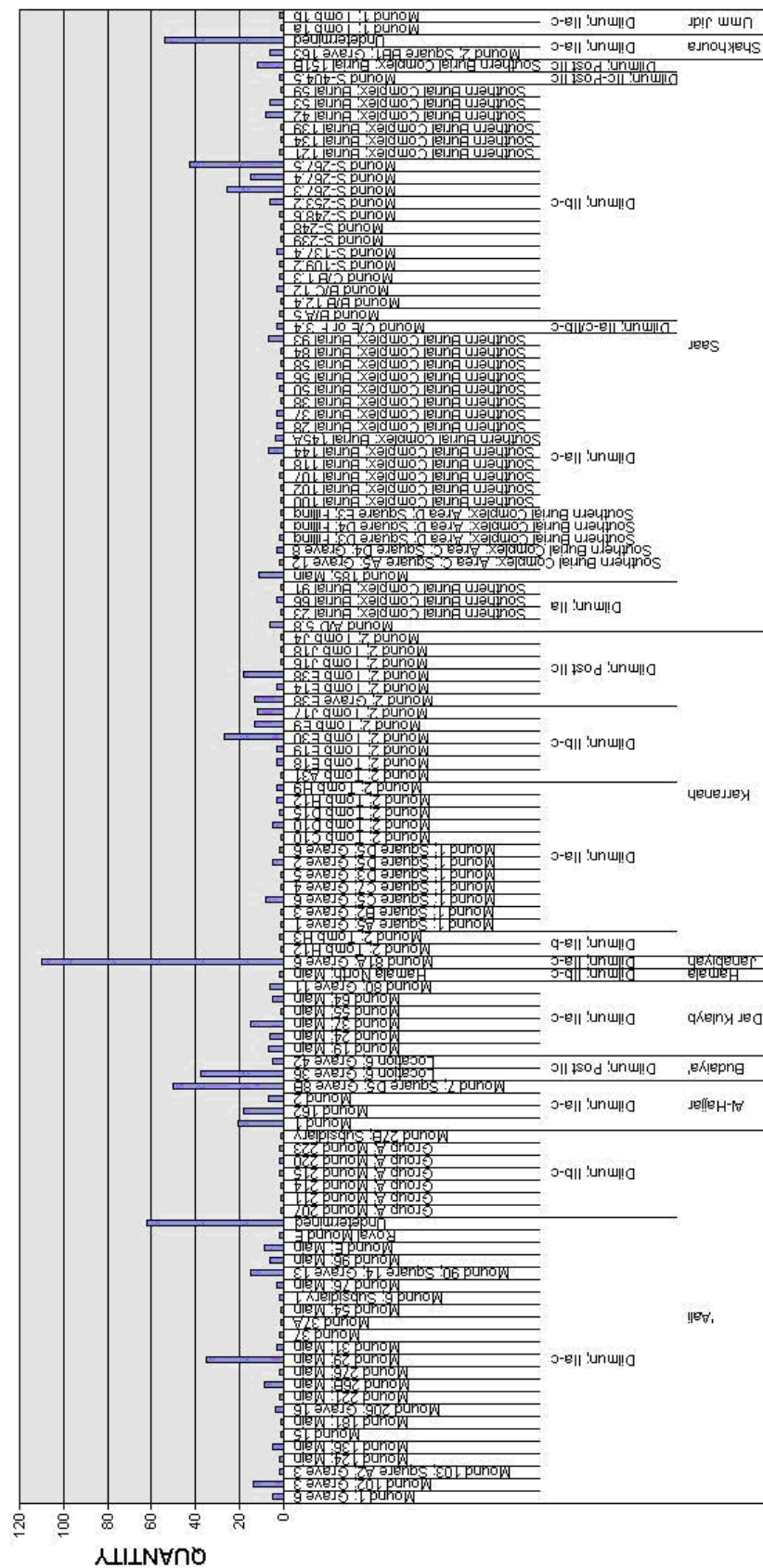
Whilst defining six out of the eight cemeteries by means of beads is useful enough to show the boom in burial culture, there are indications of such a boom at sites other than these six (or even eight, to include all the cemeteries) (see Fig. 18). Shakhoura exemplifies this, with 60 burial beads from the IIa-c chronological range in the Bahrain sample. Period Ib provided no beads from this region in the sample. Karranah is another site that began to be used for mortuary purposes. Like Shakhoura, the earliest burials of this area date from Period II, and we have three beads in the sample provided by these that are from the IIa-b chronological range whilst 33 are from IIa-c, spanning almost the whole of Period II. Similarly, burial mounds started to appear in other parts of Bahrain at this time, on the edges of the eight mound fields referred to above or even further beyond these. One such tumulus (i.e., Mound 81A) from the area of Janabiyah has provided 110 IIa-c beads (see Pl. I.).

The examples just given seem to indicate that burial was not limited to the eight mound fields themselves, but also did encroach occasionally upon the edges of more cultivated areas. Janabiyah is an example, but a lone one as far as the Bahrain sample is concerned. Weightier, however, is the fact that burials of more significant numbers (with regard to beads in the Bahrain sample) began to appear at al-Hajjar, Karranah, and Shakhoura (see Fig. 18).



**Pl. I.** The 110 beads from Mound 81A at Janabiyah, amongst which we find a significant quantity of etched carnelian specimens.

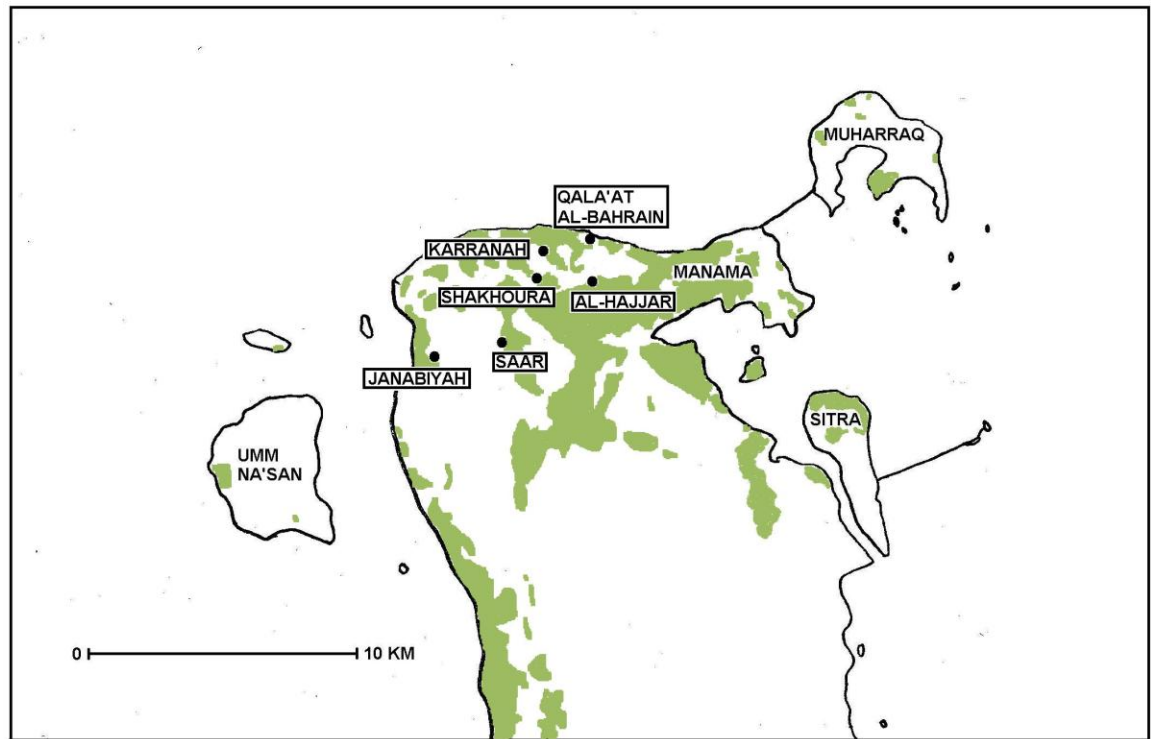




CONTEXT ACCORDING TO SITE AND CHRONOLOGICAL PERIOD/SUBDIVISION/RANGE

**Fig. 18.** Bahrain sample bead quantities from different Period II or related burial contexts spanning the sites of 'Aali, al-Hajjar, Budaiya', Dar Kulayb, Hamala, Janabiyah, Karranah, Saar, Shakhoura, and Umm Jidr. These include contexts within four of the six Period II cemeteries represented in the Bahrain sample; see Fig. 17 for contexts within the fifth and sixth, both included under the designation of "Hamad Town". It should be noted that the Saar contexts given herein are burial ones and not any associated with the Saar Settlement. Beads B1206, B1207, and B1251 are not taken into account in this graph, since their attribution to Period II is questionable.

Whilst these burials may have been outlying interments representing the community at the Saar Settlement (which appeared at this time) or Qala'at al-Bahrain, located nearby, there may be more to it than simply urban expansion. There is, of course, the one underlying observation that links all of these newly formed mortuary sites (that is, al-Hajjar, Karranah, Shakhoura, and Janabiyah): they all existed on the fringes of cultivatable land (see Map 4) (see Larsen, 1983: 78-79, Fig. 11; Larsen, 1986: Fig. 7).



**Map 4.** The locations of the sites of al-Hajjar, Karranah, Shakhoura, and Janabiyah against the backdrop of Bahrain's cultivated areas based on the extent of such cultivation in the 1950s which, according to the land use model put forward by Curtis Larsen, would not have differed much from Early Dilmun times (see Højlund, 2007: Fig. 8; Larsen, 1983: 78-80, Fig. 11; Larsen, 1983: 30-33, 36-42, Fig. 9, Fig. 11). The sites of Qala'at al-Bahrain and Saar, the latter including within its fold the Saar Settlement, are also indicated.

Cultivated land would have been able to support habitation, and it is this that gave rise to both Qala'at al-Bahrain and Saar Settlement in the first place, not to mention the unexcavated Dilmun settlement south of the latter (see Howard-Carter, 1987: 56; Larsen 1983: 78-80; Larsen, 1986: 32-35). If it was a simple matter of expansion, why the spatial dissociation of the al-Hajjar, Karranah, Shakhoura, and Janabiyah burials from the main mound field at Saar or the funerary belt used since Period I at Rifaa'? That burials often

seeped onto the fringes of cultivated areas has already been shown by the excavation of habitations at al-Hajjar, which also harboured one of the newly formed mortuary areas of Period II; the same may be said of Janussan (Nayeem, 1992: 219, 239; Roaf, 2003a: 7). Diraz has also been shown to have had habitations (Crawford, 1998: 69; Edens, 1986: 196; Lombard, 2000b: 108).

It is not a far cry to suppose similar hamlets or small villages began to appear in Period II as an extension of the growth experienced at Qala'at al-Bahrain, perhaps in response to the greater demand for cultivation brought on by an increase in population at that urban site (see Larsen, 1986: 32-35; Laursen, 2010: 132-133). This would also fit in with the land use model that has been documented historically on Bahrain and has been further documented in modern times: that of villages being located in the cultivated parts of Bahrain (see Højlund, 2007: 18; Larsen, 1983: 78-80; Larsen, 1986). Hence we have a model for the growth and expansion at Qala'at al-Bahrain and Saar spilling over into the surrounding countryside and giving rise to a number of small villages as dependencies of the larger urban centres, perhaps with the Janabiyah and Diraz villages of Period II as dependencies of the Saar Settlement and the Karranah one as a dependency of Qala'at al-Bahrain (based on proximity).

This model of “city state” dependency follows quite closely similar arrangements with city states in Mesopotamia, with which Dilmun had been trading since Period I (see Bienkowski and Millard, 2000: 74; Yoffee, 2005: 44-46, 53-59). In Period II, the evidence for Dilmun's commercial contact with Mesopotamia increases and it is only natural that with growth of a sufficient size the same city state model would be introduced into the hierarchical structure of Bahrain. Given that Qala'at al-Bahrain was the most visible urban centre on Bahrain at this time, and had been from its earlier and less conspicuous days in Period I, it only follows that the city state in question would have been that of Qala'at, especially since it held the mercantile interests of Bahrain in its grasp via its involvement in commerce by sea and because changes in social complexity at Qala'at in Period IIa affected stratification along such lines throughout Bahrain's burial fields (as Hamad Town's Karzakkan “proto-cemetery” has shown) (see Bienkowski, 2000: 74; Larsen, 1983: 78; Laursen, 2010: 132-133; Yoffee, 2005: 44-46, 59-62).



## **D. The Socio-Economic and Cultural Backdrop to the Period II Beads**

Besides the boom in burial culture, Period IIa also reveals Dilmun beginning to assume its role as middleman in the trade between Mesopotamia and the Indus (Højlund, 2007: 124-125; Potts, 1990: 185-191). This does not mean Dilmun did not possess an important role in Gulf trade prior to this epoch. Indeed it did, as is attested to by cuneiform accounts (André-Salvini, 2000: 28; Howard-Carter, 1987: 103-105; Potts, 1990: 182-191). Bahrain's contacts with Mesopotamia may also possibly be attested to by the Jemdet Nasr pottery already referred to above. And even the minute tabular biconical spacers, in the absence of any additional information, in all probability seem to have a foreign source, perhaps in the steatite-rich regions of southern Persia (in the vicinity of Tepe Yahya) if not elsewhere (see Chapter 8.5) (Beale, 1973: 133, 136, 140-144, Figs. 1-2; Crawford, 2004: 184-185; Mortazavi, 2005: 107-108). Owing to such beads having been present in Oman, Mesopotamia, and Bahrain, a swath of occurrences along eastern Arabia (with Bahrain nearby) and further north may be posited as the "sphere of circulation" of this specific kind. There is nothing to indicate Bahrain played a role in their origins, but certainly some did arrive on the Islands by trade.

By the IIa subdivision of the Early Dilmun era, however, indications of Indus influence (which was already present in Period Ib) multiplied on Bahrain. The selection of "stamp" seals as the prototypical model for Dilmun's own seal culture seems to point to its leaning towards the Indus, as is the occasional encountering of Indus script upon seals in proveniences that are otherwise clearly Dilmun (for instance, dwellings at Qala'at al-Bahrain or burials respectively at al-Hajjar and Hamad Town) (During Caspers, 1979: 126; Højlund, 2007: 125; Kjaerum, 1994: 322-323, 344; Parpola, 1994: 309-310). Indus pottery has been excavated (Højlund, 1994a: 123-128). The Dilmun weight standard also follows the Indus system (During Caspers, 1979: 125-126; Højlund, 2007: 125; Rao, 1986: 379; Potts, 1990: 187-188).

Since trade was evidently the primary motivator in such a tendency, we may assume that Dilmun's reliance on commerce with the Indus must have factored heavily in its cultural formation at this time. On the other side of its middleman ventures we have Mesopotamia, with influence appearing in the icons used on Dilmun seals as well as in architectural layouts (e.g. the Barbar Temples) and in pottery and cuneiform examples from Bahrain (During Caspers, 1979: 125; Højlund, 1994a: 102-110; Højlund, 2007: 125, 162; Kjaerum, 1994). The

beads from Bahrain have much to tell us with regard to Dilmun's position in trade and in relation to its two commercial partners, but this is something best illustrated by materials and bead types (see Chapters 8.5 and 9.6).

Essentially, Period II has been considered an era of marked economic expansion in Bahrain, and this has been borne out by the mound cemeteries and the growth of Qala'at al-Bahrain as well as the emergence of the Saar Settlement. Another aspect to which we have already referred as illustrating this boom is the appearance of the Barbar Temples (Andersen and Højlund, 2000: 91; Bibby, 1986a: 115). These religious structures at Barbar were not the only ones of their kind to grace the Early Dilmun period. Similar structures, in kind if not in form, assumed a dominant status at a variety of localities in Bahrain: the Saar Temple, the Diraz Temple, and that of Umm es-Sejjur, for example. All seem associated in one manner or more with a "water cult", or else water had an important function in the religious life and importance of these temples (Andersen, 1986: 175-177; Bibby, 1986b: 194; Crawford and Moon, 1997: 15; Oates, 1986: 434). This is illustrated at each of the three temple sites by wells being either part of the sanctuaries or located nearby (see Andersen, 1986: 175-177; Andersen and Højlund, 2003; Crawford and Moon, 1997: 15, 18, 20; Højlund, 2003d: 325-327).

What is the significance of the link between these religious sites and water, apart from any doctrinal importance given to the latter (which certainly existed)? Quite simply, habitation in a naturally arid environment such as the one experienced on Bahrain has for millennia been where water could be acquired. We may assume that Qala'at al-Bahrain had its beginnings as an urban site not only due to its proximity with the sea and so maritime trade (which sustained its continuing growth) but also the availability of freshwater in the area (see Larsen 1983: 78-80; Larsen, 1986: 32-35, Fig. 11). Wells were uncovered by excavation just within the Northern Wall of the site, and of course the extensively cultivated region that surrounding the tell in Early Dilmun times (indication of which has been given by Curtis Larsen) must have meant it had access to an ample supply of water (Crawford, 1998: 65-66; Højlund and Andersen, 1994c; Larsen, 1986: Fig. 11). Barbar, Saar, and Umm es-Sejjur were in similar circumstances in relation to water and cultivated areas.

To put it briefly, water not only provided the means for cultivating land but also acted as a centre around which the beginnings of urbanization can coalesce (see Larsen 1983: 78-80; Larsen, 1986: 32-35). This occurred at Qala'at al-Bahrain and at Saar. Similar smaller settlements would have started in the outlying cultivated areas, corresponding to the modern

villages in Bahrain, which would have provided ample dead to furnish smaller burial pockets alongside the larger ones that primarily catered to the more sizable urban centres (e.g. Qala'at al-Bahrain and Saar) (see Larsen, 1983: 78-80, Fig. 11; Larsen, 1986: 30-43, Fig. 11).

Settled populations and temple structures were therefore linked to water sources, and existed within the same socio-economic sphere that subsisted upon these. Beads, being luxury goods dependent upon human demand, were also part of this socio-economic sphere. Wherever a human population existed that had met the necessary standards of living, and so had wealth to expend upon luxuries, in such an area naturally occurred their greatest abundance. The size and wealth of a population was therefore directly reflective of its demand for jewellery, which affected the visibility of such jewellery both in urban environments (as at Qala'at al-Bahrain and the Saar Settlement) and in funerary ones (such as the tumuli fields). But for a human population to have reached a notable size in the arid climes of the Arabian Gulf, it would have required sufficient water. Whilst it is true that trade and an avenue for the movement of beads into particular environments was necessary, it was equally necessary to have a human component to demand such luxury items and to make their movement possible. In Bahrain, this was undoubtedly linked to the availability of water.

#### **E. Period II Beads from the Saar Settlement and Qala'at al-Bahrain**

An examination of two of the principal water-linked sites should illustrate the observations made above. We will begin with the Saar Settlement, noting that 20 beads from the site have been assigned to the IIa-c chronological range (and these are from the Arab Expedition's 1984 excavations at the site) (see Fig. 19). In addition to these, we have the beads recovered by the London-Bahrain Archaeological Expedition. Eight beads from this later venture are definitively from the IIb period whilst two may also be from this chronological subdivision (see Moon, 2005: 180-187, Figs. 5.9-5.11). 59 beads are from the IIb-c chronological range and 38 beads are certainly from Period IIc (see Moon, 2005: 180-187, Figs. 5.9-5.11).



These figures seem to follow the development of occupation at the Saar Settlement. The very first figure of 20 beads is not a great indicator, particularly since the beads could be assigned to any of three chronological subdivisions of Period II; considering all things equal (for the sake of argumentation), there would only be a 33.3% chance that they are indeed from Period IIa, or else that 33.3% of the beads are from IIa (whilst similar percentages are from the other subdivisions of Period II) particularly in the absence of more detailed information concerned the proveniences they were recovered from.

The London-Bahrain Archaeological Expedition, in its own words, was more focused on Site Level 2 (and subsequent levels) during their excavations of the Saar Settlement (Killick, 2005: 7). This seems to make the lack of IIa beads from their work at the site plausible. We therefore have a modest amount of beads definitely from IIb at the Settlement as well as two (B617 and B618) which have been considered as “possibly” IIb. If we ignore the IIb-c chronological range, then 38 beads are certainly from IIc and none from Post IIc. With the inclusion of the range, with its distinctive *terminus post quem*, the picture becomes clouded due to lack of accuracy (an inevitable consequence of using ranges). Still, assuming all other factors to have been equal, if we were to assign a 50% chance for the beads from the IIb-c chronological range to have been from IIb and the rest to IIc, or else that half the beads are from the former and the other half from the latter, then there would be about 29 beads left to IIb (to which the eight definitely IIb ones can be added for a total of 37) whilst IIc would have a total of 67. This effectively portrays bead numbers that were significantly present in Period IIb but tilting to a great extent in favour of Period IIc. Such figures more or less follow the development of the community at Saar as depicted by the London-Bahrain Archaeological Expedition (see Carter, 2005a: 236; Crawford, 2001: 12-14).

Of course, the method outlined above for incorporating the IIb-c beads from the Saar Settlement is unusual and not without fault, especially since it is unlikely that more or less half of the 59 beads so treated actually belong to Period IIb and the other half to IIc. However, lacking more detailed information concerning the chronology of these 59 beads, the method (flawed as it is) can nonetheless be employed, as we have done, to supplement as best it can an otherwise skewed vision of the relationship between bead amounts and Periods IIb and IIc at the Saar Settlement.

Turning to Qala’at al-Bahrain, the largest urban site of this period and the second water-linked one in our examination, the following figures may be noted: two beads that are definitely from Period IIa, one that might belong to either IIa or IIb, twelve that are certainly

from IIb, five that are from IIc, and none that have been identified from Post IIc (see Fig. 19) (see Højlund, 1994c: 392-394, Figs. 1948-1965; Højlund, 1997b: 36, Fig. 95). There is also a single bead (B366) that could belong to Period II, though there is also the possibility that it is from Period IIIb (see Højlund, 1994c: 392-393, Fig. 1966). Whilst the collection of Period II beads from Qala'at al-Bahrain is rather scanty when considered in terms of chronological subdivision, and so any argument based on it must be weakened by this fact, it may still be placed against the backdrop of the general socio-economic environment of Bahrain in Period II for a greater understanding of the latter.

Thus we find that whilst the Qala'at beads do not seem to indicate the changes that the site experienced in Period IIa, especially when compared to the eight beads from the preceding Period Ib, the subsequent subdivisions of that era are represented by growth in IIb, with a greater associated bead amount, followed by a tapering off of the same in IIc. The growth in Period IIb illustrates a similar phenomenon that took place at the Saar Settlement (see Carter, 2005a: 236; Crawford, 2001: 12-14). Generally, though IIa is viewed as an era of substantial expansion, this expansion is seen as having been driven to ever newer heights as Period II progressed; the higher numbers of beads associated with IIb at Qala'at therefore make sense.

It should be remarked that the increase in Dilmun's wealth and economic import in IIb may be illustrated by other occurrences assigned to this period. At this time, as Højlund has stated, "Dilmun seems to have changed radically" (2007: 125). The structures in the central portion of Qala'at al-Bahrain (such as the warehouses) as well as the Barbar Temples were rebuilt on a monumental scale and using limestone ashlar blocks (attesting to the availability of wealth, resources, and manpower); emphasis has been given to the investment in resources Dilmun was willing and able to provide in this regard (Doe, 1986: 186; Højlund, 2007: 125). Other indications of radical change and growth, attributed to Period IIb, are the advent of the Mature Dilmun seal type that replaced the Arabian Gulf variety and the appearance of the Dilmun colony upon the island of Failaka, off the coast of Kuwait (Crawford, 1998: 152-153; Højlund, 2007: 125; Kjaerum, 1994: 346-347; Potts, 1990: 266-267, 274). It seems that the "coming into one's own" experienced by Dilmun in Period IIa had reached its full fruition by Period IIb, as one may discern from such features as the seals. Indeed, the seal style that had become identifiable with Dilmun had reached its full maturity at this time, making the appellation of "Mature Dilmun" quite appropriate. In fact, it appears Dilmun may have been at the height of its powers, and the colony upon Failaka would have been but one proof of

this. Thus we may assume that Dilmun trade had reached such ends that additional colonies, allowing for further footholds in the region, were feasible and indeed desirable. Another indication of expansion, trade-wise, would be the appearance not long before in c. 2000 BCE or perhaps even shortly thereafter of a commercial connection with Syria, shown by the adoption of Syrian motifs upon Mature Dilmun seals and the influence exerted by the Amorites over Bahrain around this time (Højlund, 2007: 126; Howard-Carter, 1987: 63-64, 107; Potts, 1986: 389-391, 397-398; Potts, 1990: 218-219).

The ending of the Ur III period and dynasty, whether according to the Middle or Short Chronology as used for Mesopotamia, coincided roughly with this influx of Syrian influence into Early Dilmun culture; it is an occurrence which only just predated the start of Period IIb on Bahrain (see Bienkowski and Millard, 2000: 16; Højlund, 2007: 126; Potts, 1986: 388-389). The occurrence, nonetheless, has been suggested as intertwined with the loosening of Mesopotamia's hold on Gulf trade and an even greater increase in Dilmun's fortunes as part of that trade (Højlund, 2007: 126). Leaving Dilmun as the major commercial force in the Arabian Gulf, this seems to have bolstered Bahrain's wealth and resulted in greater permissibility and demand for luxury goods, beads and other kinds of jewellery included. Such supremacy also allowed Bahrain to control the copper trade in the Gulf so that the Umm an-Nar culture's role in the same was eclipsed (Crawford, 1998: 152-153; Crawford, 2000: 74; Laursen, 2009: 137-138). This has been suggested as one reason for the replacement of the Umm an-Nar culture by the Wadi Suq one on the Oman Peninsula (Højlund, 2007: 126).

## **F. Beads from Periods IIc and Post IIc**

The overview of Period II involves a significant rise in the development of Dilmun culture as well as its socio-economic environment up to and including Period IIc; at some point late in the same, a decline set in that culminated with Period Post IIc (Crawford, 1998: 153). At the Saar Settlement, evidence of this lies in a general growth having occurred, particularly as the Settlement moved from Period IIb to IIc, before its lifespan was concluded at the end of the latter (Carter, 2005a: 236).

With Qala'at al-Bahrain, it seems there was a visible drop when comparing IIb and IIc beads (those that are definitely from these chronological subdivisions) from 12 examples to five. However, whilst this looks like it contradicts the overview of development gained from Saar, it should be pointed out that the Saar Settlement was a "contained environment"; that is,

it was “contained” chronologically (see Carter, 2005a: 236). There was thus no further development of the community following Period IIc. At Qala’at al-Bahrain, however, occupation of the site continued more or less through subsequent centuries, throughout the rest of the Dilmun era as well as up to and beyond the Tylos period (Crawford, 1998: 52). A possible explanation, though admittedly not a very strong one, for the lower bead number belonging to Period IIc at Qala’at al-Bahrain may therefore lie in its general continuity of occupation.

To perceive what is meant by this, it is necessary to bear in mind the severe drop in productivity on both the cultural and economic fronts in Bahrain in Period Post IIc (see Højlund, 2007: 127, 135-136). The Saar Settlement would not have suffered in this regard because there was no further occupation at the site. At Qala’at al-Bahrain, which would have been pervaded by a suffering cultural and economic environment in Period Post IIc, there would not have been so much a disappearance in demand for luxury goods, but rather a demand with little supply to meet it. The result would very well have been recourse to an already existent supply. Beads being luxury goods that do not lose their value too readily from cultural epoch to epoch (e.g. the importance given specimens of lapis lazuli and glass across centuries – see Chapter 8.5), those of the earlier period could easily have re-entered circulation, making for the lower quantity of Period IIc beads obtained by excavation at Qala’at al-Bahrain.

However, the more likely possible cause for the lower IIc quantity is that Early Dilmun simply suffered the beginning of its lessening of fortunes prior to, rather than after, the start of Period Post IIc. By IIc, and following the Amorite expansion with its subsequent conflicts between the states of Isin, Larsa, and Babylonia (amongst others), the situation in Mesopotamia had recovered somewhat from its infrastructural decay in the aftermath of the Ur III era (see Van De Mieroop, 2007: 85-93). It was this decay that had given Dilmun the opportunity to monopolize to some extent on trade in the Arabian Gulf (Højlund, 2007: 126). A long stretch of Southern Mesopotamia, from Nippur to the mouth of the Gulf, was unified under the Larsa monarch Rim-Sin, which brought a measure of political and economic stability to that region (Van De Mieroop, 2007: 92). This allowed Southern Mesopotamia greater direct involvement in trade in the region, with one epigraphic source even indicating that Rim-Sin himself was in contact with Dilmun merchants (see Potts, 1990: 224). Subsequently, King Hammurabi of Babylon was able to assume control over most of Mesopotamia, conquering the lands that had belonged to Rim-Sin, thus bringing his rule to



the shores of the Gulf and inaugurating an era of even greater stability built on the administration he had taken over from his predecessor (Bienkowski and Millard, 2000: 139, 175; Crawford, 1998: 154-155; Van De Mieroop, 2007: 92-93). The dominance of maritime trade enjoyed by Dilmun in the aftermath of the demise of Ur III and the resulting infrastructural weakness further north thus began its reversal in proportion to the improving political situation in Mesopotamia. It may therefore not be surprising that after 1786 BCE, over twenty years before Hammurabi's capture of Larsa and whilst Rim-Sin was enjoying a consolidated power base and its influence in Southern Mesopotamia, Dilmun disappeared for several centuries from epigraphic sources (see Potts, 1990: 224; Van De Mieroop, 2007: 92). Moreover, it has been suggested that in Hammurabi's time, since the Babylonian king's control stretched to the Middle Euphrates, he was able to achieve easy access to copper coming in from Anatolia and Cyprus; this eclipsed the market for copper that had sustained Dilmun trade and severely handicapped Bahrain's mercantile importance (Crawford, 1998: 154-155).

The implication provided by all the above seems to be not of a straightforward and abrupt socio-economic drop at the end of Period IIc, but rather a decline that (whilst initially not too severe) had its beginnings in IIc itself, since the events in Mesopotamia mentioned took place in that epoch. The effects of the decline have been noticed in the reduced quantity of IIc finds obtained from Qala'at al-Bahrain compared to those of IIb (Højlund, 2007: 127). It may also be observed in the similar fortunes of the burial sites of Bahrain. The only exception seems to be the Saar Settlement; even the burial mound field at Saar conforms to the general fortunes of the whole of Bahrain.

The picture that one gets therefore is of Dilmun being fairly productive, on both the social and economic levels, in Period IIb and still for the most part in IIc; and yet, there is a decline that eventually sets in. In Post IIc, this productivity and the levels associated with it apparently hit a "rock bottom" of sorts. No Post IIc beads have been contributed to the Bahrain sample by the Saar Settlement as its occupation did not continue into this sub-period (see Carter, 2005a: 236).

Qala'at al-Bahrain has also contributed no beads from this sub-period. This may be due to the "contraction" in prosperity experienced by the site on almost all fronts. For example, the palace at Qala'at was abandoned at this time and, whilst finds were plentiful in the preceding subdivisions of Period II (with a noticeable decline in IIc), Post IIc provides us with very few finds overall and almost no pottery (let alone beads) from most areas of the site

(Højlund, 2007: 135-136). Bahrain seems thus to have arrived at a “low ebb” at this time, and the occurrence of this ebb alongside the depopulation and desertion of various Middle and South Mesopotamian urban sites such as Ur and Nippur (which dried up the markets of those regions) during the reign of the Babylonian King Samsuiluna (c. 1749-c. 1712 BCE) was perhaps more than coincidental (see Højlund, 2007: 136; Van De Mieroop, 2007: 115, 306).

Due to various examples of Mesopotamian influence exerted in such quarters as pottery and decorations of stamp seals as well as the introduction of collective burial, it has been observed that Dilmun most likely had come to depend a great deal on its northern neighbour (Lombard, 2000b: 109). So much so, in fact, that the tendency towards solidifying a unique Dilmun identity, quite visible in the earlier subdivisions of Period II, seems to have been supplanted by a push towards conforming to a Mesopotamian identity. Højlund has already suggested the possibility of Mesopotamian eating and drinking habits as well as dress being adopted in Period Post IIc (2007: 127).

Such a dependence on Mesopotamia, and therefore on trade with its northern neighbour, would certainly have meant a heavy blow to Dilmun commerce and living standards with the collapse of urban infrastructure in Southern Mesopotamia (see Van De Mieroop, 2007: 115). For even as greater political stability in Mesopotamia sometime in Period IIc meant less influence for Dilmun in Gulf trade and more for its northern neighbour, the exact opposite of the same would have robbed Bahrain in Period Post IIc of the Mesopotamian market it was so dependent on for its commercial prosperity. It is this which likely caused the scarcity so visible on a cultural and economic level, from the urban site of Qala’at al-Bahrain to the general situation of burial assemblages on the Islands, during Period Post IIc.

However, Højlund has suggested the existence of “pockets of settlements where life continued with some trading, but on a lower social level than previously” (2007: 127). Moreover, whilst expectations would have certainly been lowered accordingly given the economic environment of Post IIc, there was still sufficient demand for luxury goods. The demand in itself is visible from beads having been found, though in smaller numbers, in graves belonging to Period Post IIc at Saar (which has produced twelve beads that are definitely from this chronological subdivision) and in other areas such as Budaiya’ and Karranah (from which, respectively, 43 and 37 burial beads have been contributed to the Bahrain sample). Only these three sites have contributed beads from Period Post IIc to the Bahrain sample.

Saar, being the one that has provided us with beads from all the subdivisions of Period II if we look beyond its settlement, further illustrates the changing fortunes of Dilmun, particularly if we turn to its burial beads. The 12 Post IIc burial beads (and additional two – B173 and B218 - which may belong to either Post IIc or IIc) compare poorly with the 38 beads from the Saar Settlement that are certainly from the preceding Period IIc. And whilst the 11 definitely IIa beads from graves at Saar do not make for a better comparison, it should be remembered that (in terms of burial beads) 57 other examples belong to a IIa-c chronological range and 126 to a IIb-c one (not to mention three specimens – B175, B176, and B252 - which could belong to either the IIa-c or IIb-c range). Assuming, for the sake of argument, that all things were equal in providing us with this last amount (and that each 1/3 of the 57 represents one of the three chronological subdivisions of the IIa-c range), this would imply a 33.3% chance of these beads being IIa ones, thus giving us 19 beads to which the 11 already mentioned can be added for a total of 30. Treating the 126 IIb-c burial beads the same way (though bearing in mind that we are now dealing with two chronological subdivisions instead of three), we have 63 that may be attributed respectively to Periods IIb and IIc.

The above represents a necessary exercise (a similar one already having been applied to the beads from the Saar Settlement), albeit admittedly it is flawed for much the same reason already stipulated for its earlier use in this chapter. However, it has been employed here since most of the Saar burial beads have been assigned to chronological ranges that must be taken into consideration lest a skewed picture of the funerary aspect of the site be obtained by focusing solely on those specimens dated to one or another of Period II's subdivisions. By means of the above exercise, one obtains an overview of development that follows, in terms of the comparison between Periods IIa and IIb, that visible at Qala'at al-Bahrain, but adds to it a glimpse of the "all-time low" of Period Post IIc, absent at Qala'at due to no beads having been recovered from the urban site that belong to this chronological subdivision.

## **G. Beads and Sites: The Relationship in Period II**

Changes in the wealth and social development of Early Dilmun in Period II, as described in this chapter, may be witnessed in an overarching sense not only in the changes that affected the quantities of beads that derive from each subdivision of Period II, but also in the number of sites that produced them. Four sites have contributed beads to the Bahrain sample from Period I (primarily Period Ib). This number increases to eleven and twelve sites

respectively for each of Periods IIa and IIb, if we include all that have possibly contributed beads from each of these chronological subdivisions (i.e., those from chronological ranges as well as beads specifically attributed to particular subdivisions). The above numbers, nonetheless, do not include the site of Diraz, because the three IIa-IV beads (B4115, B4116, and B4117) it has contributed could belong to an era other than Early Dilmun, let alone the IIa or IIb subdivisions of the latter. IIc, like its predecessors in Period II, has given us beads from eleven sites, which is the same number provided by IIa. Amongst the Post IIc beads, however, the drop in Dilmun's fortunes is distinctly observed: only three sites have contributed beads from this sub-period. And none of these are non-burial sites.

The disappearance of the community at Saar, which has already been mentioned, along with the abeyance of occupation at the settlement at Diraz and Temple III at Barbar, are some of the dramatic aspects of the archaeological record that show the price paid by Dilmun during Period Post IIc (Crawford, 1998: 153; Lombard, 2000b: 108). Nor are such disappearances limited to material culture. Indeed, Dilmun disappeared from all Mesopotamian epigraphic references (at least, based on our present state of knowledge) for a period of two centuries (Lombard, 2000b: 108; MacLean and Insoll, 2011: 26; Potts, 1990: 224). During this time, Bahrain was "marginalized" in its position in the Arabian Gulf (Lombard, 2000b: 109). Such marginality, however, was not to last, though ancient Bahrain would never regain the importance it had held during its prime in the Early Dilmun era.

## **Period III and Its Subdivisions**

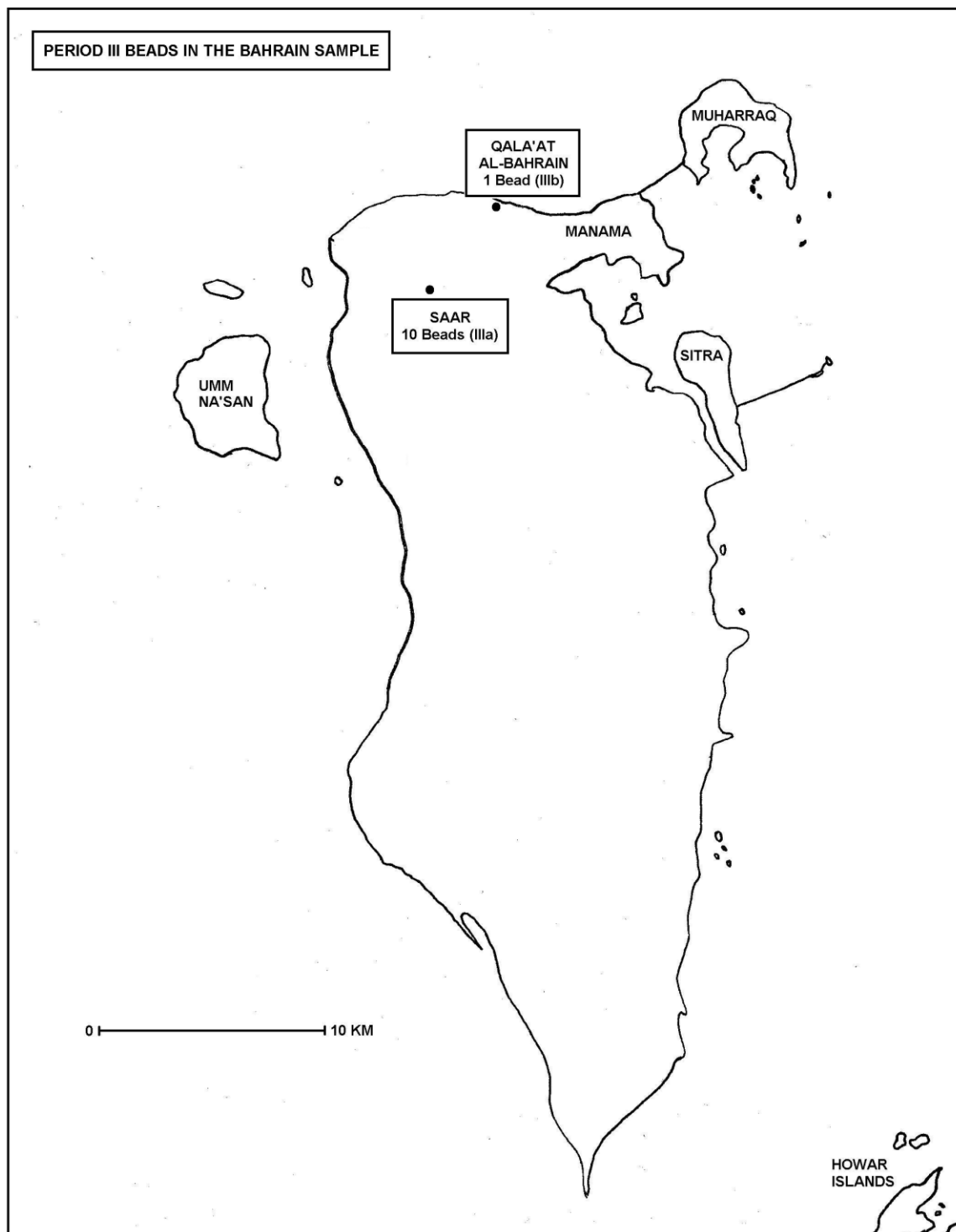
### **A. Advent of the Middle Dilmun Era**

The 16<sup>th</sup> century BCE saw the political instability of Mesopotamia used by the Kassites to their advantage (Bienkowski and Millard, 2000: 164). Within a short span of time, they had subjugated Babylon and had secured the northern frontier of their state (Van De Mieroop, 2007: 172-173). South Mesopotamian trade was securely in the hands of the Kassites. At this time, it has been assumed that Dilmun had fallen under the sway of the "Sealand", a region principally focused around the mouth of the Euphrates in Southern Mesopotamia (Lombard, 2000b: 108).

Once the Sealand fell to the Kassites in around 1475 BCE, Dilmun automatically likewise came under their sway and Bahrain entered its Middle Dilmun phase (i.e., Period III)

as a province of the Kassite kingdom (Bienkowski and Millard, 2000: 164; Lombard, 2000b: 108; Van De Mieroop, 2007: 174-175). The Kassites turned Qala'at al-Bahrain into a centre for the administration of their Gulf province, which experienced a process of Babylonian colonialism, and installed governors who acted on their behalf, as evidenced by the figures of Ili-ippashra (who is mentioned in 14<sup>th</sup> century BCE cuneiform correspondence from Nippur) and Uši-ana-nuri (also mentioned in a text from Mesopotamia) (Edens, 1986: 201, 211-215; Eidem, 1997: 76; Lombard, 2000b: 109).

Whilst it has been observed that economic reasons motivated Kassite interest in the Gulf, including Bahrain which was at the time of that kingdom's advent but a shadow of its former self, the arrival of Kassite rule on the Islands did turn out to be to Dilmun's advantage (see Lombard, 2000b: 108-110). The Kassites, having based their administration at Qala'at al-Bahrain, reinvigorated the city and renovated it.



**Map 5.** The locations of sites that have contributed Period III beads to the Bahrain sample. Bead quantities pertaining to the sites are also given, organized by chronological subdivision. Beads B366, B4115, B4116, and B4117 are not amongst the quantities shown in the map, since they could belong to a chronological era other than Period III.

The monumental structures at the centre of Qala'at al-Bahrain were repaired and expanded, and reference has been made to a “seat of power” and a “place of worship” which probably existed there (Lombard, 2000b: 109). Several textual fragments of Medio-Babylonian cuneiform bear witness to the administrative functions of the monumental structures at Qala'at al-Bahrain (André-Salvini, 2000: 114; Edens, 1986: 198-201; Eidem, 1997: 76-80; MacLean and Insoll, 2011: 27-28). The cuneiform fragments in particular “confirm that Dilmun was at that time a vassal of the kings of the dynasty that rules over Southern Mesopotamia” and some of the texts even allow us to identify one of the kings in question as Agum III, who rose militarily against the Sealand in 1465 BCE (André-Salvini, 2000: 114).

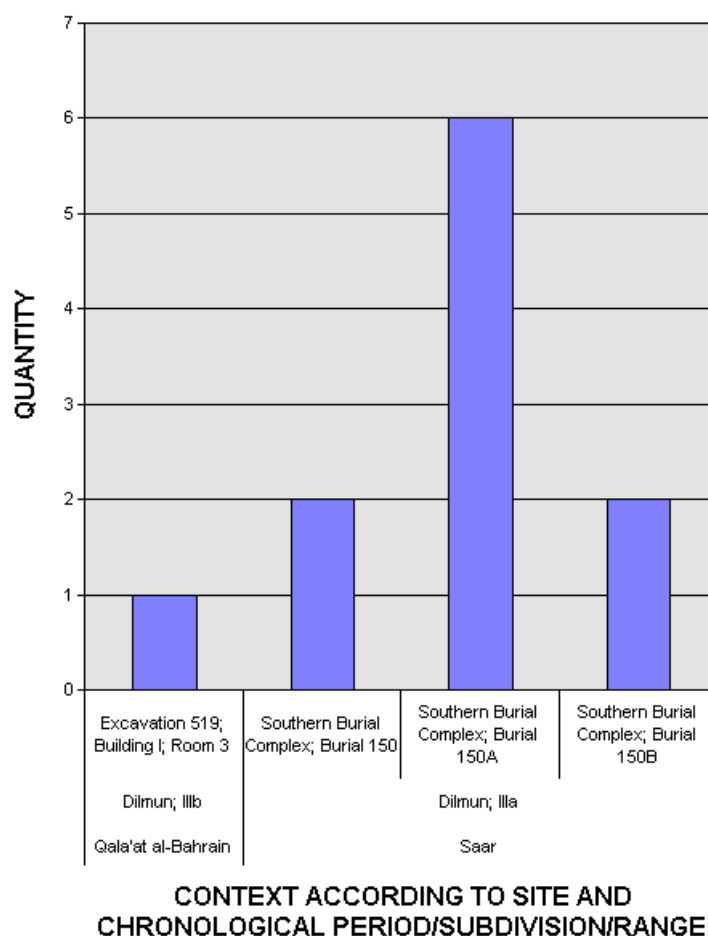
A fire apparently wracked the palace at Qala'at al-Bahrain in the Middle Dilmun era, which has permitted a number of finds, including Period IIIb charred date-stones with C14 value (which have provided a calibrated date of 1410 BCE), to be preserved; it has also given an idea of the use of the complex by means of these finds (Eidem, 1997: 76; Højlund, 1997d: 61; Højlund, 1997e: 68; MacLean and Insoll, 2011: 26). Moreover, the cuneiform fragments referred to above were obtained from this fire-afflicted environment (Eidem, 1997: 76; Højlund, 1997e: 73-74).

## **B. A Period III Bead from Qala'at al-Bahrain**

As far as the beads from Qala'at al-Bahrain go, only a single specimen (B385) from the Bahrain sample can definitely (that is, with certainty) be dated to the Middle Dilmun period, and it has been identified as either of faience or glass (see Fig. 20) (see Højlund, 1997e: 73, Fig. 301). This bead originally came from Period IIIb (and specifically IIIb1), and so represents a more mature level of Kassite dominance than the initial arrival of Mesopotamia's newfound power upon Bahrain. This remarkable specimen was uncovered amidst the charred levels of Building I at Qala'at; in particular, Room 3, in the context of finds (cuneiform texts and some stones of amalgamated hematite and ochre) preserved amidst the traces of fire that ravaged the palace structure during the Middle Dilmun era (Højlund, 1997e: 73). It is difficult to determine whether it represents a remnant of bead trade that had passed through Bahrain and Qala'at, or had found its way into Room 3 by other means.

Certainly the context in which it was found implies “goods” and the movement of goods. For the role of Building I has been described as “primarily a central magazine for

storage and distribution of goods” (Eidem, 1997: 76). The bead’s accompanying finds aside, from adjoining rooms and belonging to the same time period were obtained further examples of hematite and ochre specimens as well as the charred date-stones already referred to and other date impressions on bitumen as well as numerous pieces of copper (two collections of about 150 pieces of copper as well as three ear-rings, a standard ring, and an arrowhead) (Edens, 1986: 197-199; Højlund, 1997e: 68-74). Finds with comparable implications of storing and possibly exchange were found in adjacent rooms (i.e., Rooms 4 and 5) belonging to the earlier part of Period III (that is, IIIa) (Edens, 1986: 197-199; Højlund, 1997e: 68).



**Fig. 20.** Bahrain sample bead quantities from different Period III contexts. Beads B366, B4115, B4116, and B4117 are not taken into account in this graph, since they could belong to a chronological era other than Period III.



Returning to the bead from Room 3 of Building I, it cannot certainly be described as part of a bead trade passing through Qala'at al-Bahrain as there is no basis for determining why it had ended up in the palace. Nonetheless, it does appear that a trade in raw materials, and certainly raw materials of use to beadmaking, did pass through Qala'at al-Bahrain and the palace structure around 1410 BCE (based on the calibrated C14 dating of contemporary finds) and earlier during the Middle Dilmun era. Various observations can be made to support this. "Dark red stones" were found in the same room as the single bead and in one of the adjoining rooms (possibly belonging to the same or earlier subdivision of Period III) – that is, either Room 1, 2, or 7 – as well as 100 or so white quartz pieces from a IIIa layer of Room 4 (Højlund, 1997e: 68-74). It should be pointed out that they were all of standard size and material to be used in the production of beads. Mention should also be made of the octahedron of fluorite obtained from the IIIa layer of Room 4 (Højlund, 1997e: 68). It may have been a bead that was cut and yet not drilled.

Excluding the possible fluorite specimen, though, the earlier stone pieces described, as evidence enough, were of ideal size and appeared in significant enough numbers to allow for their storing (if not passage) for use on a "bead-sized" level; if not for actual beads, as would have likely been the case with some of the pieces at least, then on rings, as cylinder seals, as weights, or in inlay work. By way of illustration, it may also be pointed out that hematite and white quartz beads have been catalogued as part of the Bahrain sample; these generally belonging to other epochs though one specimen (B308, a white banded chalcedony and variety of quartz) may belong to Period IIIa (see Chapter 8.2 and Appendices 1a-1b).

### **C. Period III Burial Beads from Saar**

More representative of early Middle Dilmun, that is, Period IIIa as opposed to IIIb, are ten beads from three burial contexts at Saar (i.e., Graves 150, 150A, and 150B from the Southern Burial Complex) (see Fig. 20) (see Mughal, 1983: 90-92, 400-404, Figs. 28-29). It has been stated that the Kassite occupation of Bahrain witnessed occasional reuses of older Early Dilmun burials, particularly at Saar and 'Aali (Lombard, 2000b: 110). The ten beads recovered from Saar were derived from contexts indicative of such reuse. However, the scarcity with which such contexts have been encountered amongst the many graves excavated at the Southern Burial Complex, for instance, and the small number of beads found from the

three contexts (only) with which we are concerned reinforces the notion that such reuse was not widespread.

## **Period IV and Its Subdivisions**

### **A. Bahrain in the Late Dilmun Era**

With the ascendance of Assyria, whose monarchs replaced the kings of Babylon as rulers of Mesopotamia, Dilmun seems to have been transferred from the hands of one Mesopotamian state to the next. When the Kassite King Kashtiliashu IV was brought to Assur as a prisoner by Tukulti-Ninurta I, this event seemed to mark the moment of transition of power in Mesopotamia (Lombard, 2000c: 116; Van De Mieroop, 2007: 176). There was a short-lived recovery of Kassite power thereafter, but in 1155 BCE the definitive end came for the Kassites (Bienkowski and Millard, 2000: 165; Van De Mieroop, 2007: 176). Nonetheless, from about the time of the capture of Kashtiliashu IV, Dilmun was seen as a vassal not of the kings of Babylon, but rather the kings of Assur (see Edens, 1986: 201). As such, Bahrain entered the Late Dilmun period (i.e., Period IV), at the time of the transition into the 1<sup>st</sup> millennium BCE, as a dependency of Mesopotamian overlords.

Epigraphic evidence attests to this continued role of Dilmun as a vassal state; for as such was it mentioned in the texts from the reigns of Tukulti-Ninurta, Sargon II, Esarhaddon, and Assurbanipal (Cornwall, 1952: 138; Howard-Carter, 1987: 93-96; Lombard, 2000c: 116-117; Potts, 1986: 397). The last of these was a mid-7<sup>th</sup> century BCE text explicitly referring to Dilmun as a province of the Assyrian Empire (Howard-Carter, 1987: 95; Potts, 1986: 397). Dilmun continued as a vassal state in the Neo-Babylonian period, at least as far as we can tell judging from a 544 BCE textual reference of King Nabonidus (see Cornwall, 1952: 138; Lombard, 2000c: 117).

Despite such a position in relation to Mesopotamian rulers, Dilmun did possess its own social and political hierarchy that subsisted underneath the greater and overarching one from Mesopotamia. It has been stated that “Assyrian political control was probably just a matter of form, and we can suppose that the country slowly rebuilt its own political and economic base” (Lombard, 2000c: 116). It seems therefore likely that Dilmun only displayed nominal allegiance to the rulers of Mesopotamia at this time.

Such nominal allegiance may have not persisted under Achaemenian rule (see Lombard, 2000c: 118). Nonetheless, the economic rebuilding that had begun at the start of Period IV proceeded into this time and Dilmun continued to prosper, perhaps regaining some of the “cultural plurality that it enjoyed during its apogee in the Bronze Age” (Lombard, 2000c: 119).

Various features of Dilmun society retained strong evidence of Mesopotamian influence. The introduction of bath-tub coffins at Qala’at al-Bahrain and the building of a Neo-Babylonian tomb at Diraz are part of this evidence (see Højlund, 1997i: 159; Roaf, 2003b: 28). Indeed, the practice of burying the dead underneath dwellings still in use was a feature of many communities in Mesopotamia; in itself it is a further indication of Mesopotamian influence and has been used, alongside the Neo-Babylonian tomb just mentioned, as portraying Babylonians living in Bahrain during this period (see MacLean and Insoll, 2011: 34-35; Pollock, 1999: 206, 216). With Dilmun even nominally a Babylonian dependency, prior to the appearance of the Achaemenian Empire, this would have been expected.

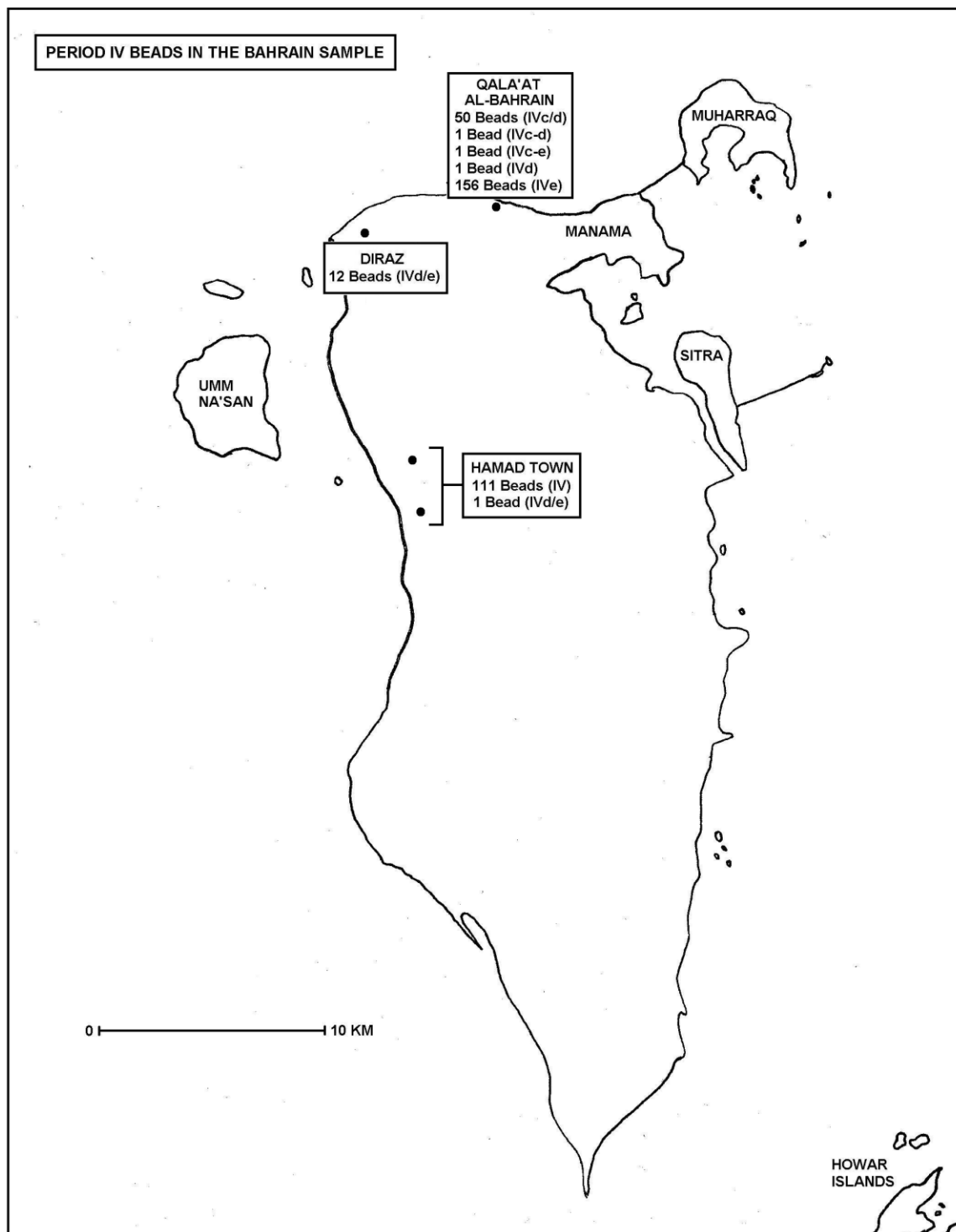
## **B. Late Dilmun Burial Beads from Hamad Town and Diraz**

Period IV beads in the Bahrain sample, like those from earlier epochs, were derived for the most part from funerary contexts across Bahrain (see Map 6). These include funerary contexts at an urban site: Qala’at al-Bahrain (see Fig. 21). Period IV beads from Qala’at were obtained partially from non-burial contexts and partially from burials that were more truly votive offerings; that is, the non-human Snake Sacrifices uncovered at the site (see below). The rest of the beads from Qala’at were acquired from bath-tub and pot burials, reflecting distinctly Mesopotamian styles of interment with parallels on the Mesopotamian mainland further north (see Højlund, 1997i: 159; Lombard, 2000c: 119; Oates, 1986: 434; Potts, 1990: 320).

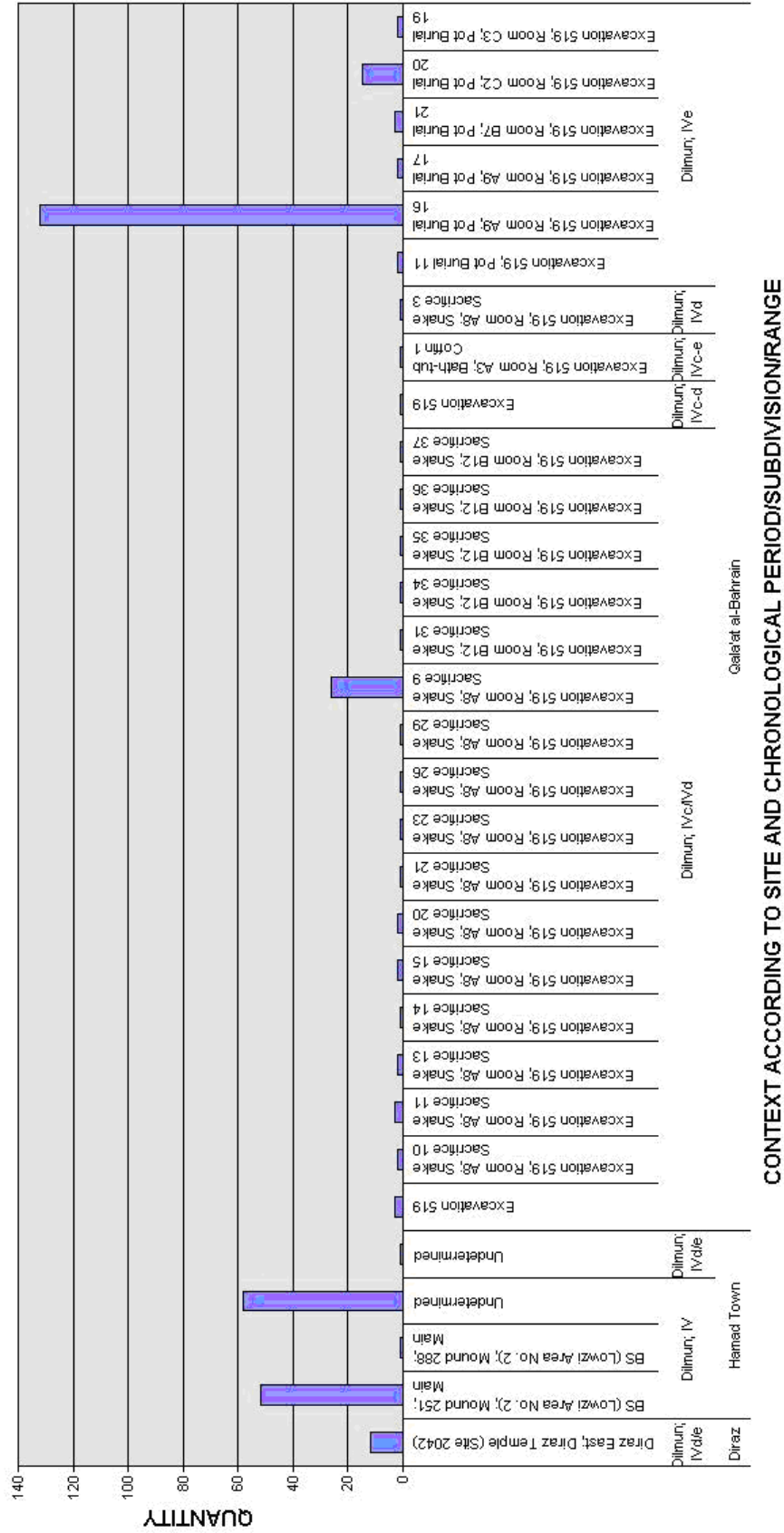
A sizeable number, 112 beads, came from Late Dilmun reuses of Early Dilmun burial mounds at Hamad Town (see Fig. 21). Other Period IV reuses of Early Dilmun graves are known from al-Hajjar and ‘Isa Town, but the beads from contexts of this sort contributed to the Bahrain sample were all obtained from Hamad Town (see Lombard, 2000c: 118).

It should be borne in mind, though, that the 112 beads being discussed were from only three burials. This is comparable to the Middle Dilmun (that is, Kassite era) reuses of graves

in Saar's Southern Burial Complex. As mentioned above, the beads from such Middle Dilmun reuses also came from three burials. Certainly there is an enormous difference between ten and 112 beads, but in essence the same number of burial reuses (i.e., three) is indicated by both. Three burials from Middle and Late Dilmun are hardly enough to provide an idea of the difference in burial refuse frequency between the two eras. Nonetheless, it does seem that grave reuse in Late Dilmun was a scarce occurrence, much as it was in Middle Dilmun, and that the vast majority of burials beheld by the people of either were ancient remnants (of bewildering numbers, certainly, but remnants nonetheless) of the Early Dilmun era.



**Map 6.** The locations of sites that have contributed Period IV beads to the Bahrain sample. Bead quantities pertaining to the sites are also given, organized by chronological subdivision/range. Beads B367, B368, B374, B4115, B4116, and B4117 are not included amongst the quantities shown in the map, since they could belong to a chronological era other than Period IV.



**Fig. 21.** Bahrain sample bead quantities from different Period IV contexts. Beads B367, B368, B374, B4115, B4116, and B4117 are not taken into account in this graph since they could belong to a chronological era other than Period IV.

The twelve beads excavated from the already-mentioned Neo-Babylonian tomb have been identified as Period IVd or Period IVe specimens from a collective burial (see Fig. 21). The tomb was “collective” in the sense that it represented a tomb that was in reuse over an extended period of time, with earlier interments being shifted to an inner chamber whilst the outer one was reserved for the latest burial (Roaf, 2003b: 28). As such, around 40 interments were contained by the tomb (Roaf, 2003b: 28). It therefore represented a long tradition of collective burial on Bahrain that began in Period Post IIc, persisted throughout the Middle and Late Dilmun periods, and indeed continued on into the Tylos era (as we shall see).

Two Neo-Babylonian seals and a possibly Achaemenian bowl have allowed the tomb to be dated to roughly the mid-1<sup>st</sup> millennium BCE; these artifacts were certainly associated with the final burial in the tomb (Roaf, 2003b: 28). The twelve beads, therefore, may also be dated to roughly the mid-1<sup>st</sup> millennium BCE. However, they (and the tomb) could possibly belong to a slightly later date based on the presence of black-and-white onyx imitations (see Chapter 8.5).

In comparison with Tylos era beads, these twelve beads are significant in the light they shed on collective burial practices. In isolation, though, they do not provide much information solely on the basis of quantity, chronology, and context.

### **C. Late Dilmun Beads from the Snake Sacrifices at Qala’at al-Bahrain**

The beads that are perhaps the most telling in giving some idea of Bahrain’s situation from the middle of the Late Dilmun period to right before the start of the Tylos era are the 209 beads recovered from Qala’at al-Bahrain (see Fig. 21). What is interesting about these beads is that they all derive from the later subdivisions of Period IV (i.e., IVc onwards), with no beads from IVa or IVb. The reason for this is that nearly all of these beads were obtained from either Snake Sacrifices or Mesopotamian-style burials at Qala’at, all of which date to the mid-to-late subdivisions of Period IV (see Højlund, 1997h; Højlund, 1997i: 145, 154-157). Only four beads have not been acquired from these, though they nonetheless fall into the IVc-d chronological bracket shared by a sizable portion (i.e., 46 other specimens) of the 209 bead total.

Actually, this is the bracket to which all the Snake Sacrifices thus far excavated at Qala’at al-Bahrain belong, being either from Period IVc or IVd. They were all found

underneath two rooms, A8 and B12; twelve individual Snake Sacrifices containing beads were associated with the former and five with the latter (Højlund, 1997h).

The presence of beads in close to half the Snake Sacrifices at Qala'at al-Bahrain (17 of the 39 cases excavated) gives us occasion to pause and consider the role played by beads in the beliefs of the Dilmunites based on these sacrifices. On the whole, the snake does seem to have played an important role in the cultures that surrounded or had interactions with ancient Bahrain, including mainland Arabia, Persia, India, and Mesopotamia (Potts, 2007: 65-69). P.V. Glob suggested that the snake burials themselves were offerings to a snake goddess (Højlund, 1997h: 143; Potts, 2007: 56, 63-64). A connection has been drawn between this possibility and a snake god (i.e., Nirah) rather than a goddess, based on a reading of one of the cuneiform fragments found in the Period IIIa level of Room 3A of the Qala'at palace (Højlund, 1997h: 143; Potts, 1990: 321; Potts, 2007: 66). Geoffrey Bibby, on the other hand, associated the Snake Sacrifices with the serpent and possible pearl elements of the *Epic of Gilgamesh*, suggesting that the burial of serpents thus was a preventative measure against illness and death (Bibby, 1996: 120-121; Højlund, 1997h: 143-144; Potts, 1990: 321; Potts, 2007: 65). He also suggested that many of the Snake Sacrifices had contained pearls (i.e., those without beads, as mentioned above) and that beads represented substitutes for pearls offered by the poor (Bibby, 1996: 120-121; Højlund, 1997h: 144). A third possible explanation for the Snake Sacrifices has recently been put forward by Daniel Potts, and suggests that perhaps an Indian influence lay behind the practice, owing to such influence heading westwards during the Achaemenian period (2007: 70-72).

Another possibility, as yet not suggested by others and giving a new twist to the “snake god” hypothesis, is that the Snake Sacrifices may be associated with Ningishzida, a Mesopotamian deity with Sumerian origins and a temple cult that remained conspicuous at least until the Ur III era, and whose worship persisted into later times as a popular god of the Netherworld, fertility, healing, magic, and averting evil (McDonald, 1994: 23-24; Van Buren, 1934: 61). Since this suggestion is being put forward here for the first time and because it is relevant to possibly understanding the role of beads in the Snake Sacrifices, some explanatory digression is required. To begin with, it is important to note that Ningishzida was associated in iconography with snakes and trees (i.e., his name, in fact, translates as “Lord of the Steadfast Tree”), thus incorporating symbolism associated with the story of the Garden of Eden, the concept of which has sometimes been linked to the Mesopotamian view of Dilmun as a paradise (see Bertman, 2003: 123; Burrows, 1984; Jacobsen, 1987: 59; Van Buren, 1934:



65-76). He was sometimes represented simply as a large snake, or else was accompanied by snakes (occasionally of the horned variety), and has even been depicted as an anthropomorphized tree (McDonald, 1994: 23; Van Buren, 1934: 65-76). If Ningishzida did indeed have some prominence in Dilmun (and from an earlier era than Period IV), then perhaps a new perspective can be taken on the prevalence of serpent glyptics (including horned examples) amongst Dilmun seals (e.g. K16:29:13 from the Saar Settlement as well as Nos. 146 and 250, amongst others, in Khalid Al-Sindi's catalogue of such items), if not the appearance of a palm tree with "hands" on at least one of them (see Al-Sindi, 1999: 32-33, 210, 327; Crawford, 2001: 74).<sup>2</sup> Interestingly, the devotional depiction afforded trees on certain Dilmun seals has for some time been acknowledged and may be pertinent here and/or in relation to the god Inzak, Dilmun's tutelary deity (see below) (see Al-Sindi, 1999: 37; Kjaerum, 1997: 330). Furthermore, it should be added that Ningishzida was also linked to "water" in his role as a god of healing and fertility, which again brings to mind the importance water held in Dilmunite religion (see Bibby, 1986b: 194; Crawford and Moon, 1997: 15; McDonald, 1994: 23; Van Buren, 1934: 63-65, 68-69).

Apart from his connection with healing and other functions, Ningishzida was also considered intimately involved with the Mesopotamian Netherworld and with the dead (see Bienkowski and Millard, 2000: 308). He was at times deemed the son of Ereshkigal, who ruled the Netherworld, and was a "throne-bearer" of that realm (Shushan, 2009: 80; Van Buren, 1934: 63-64). As a chthonic deity, he was therefore quite appropriately associated with the dead and burials. If the hypothesis we are exploring with regard to the Snake Sacrifices is indeed a possibility, then perhaps he may also be linked to the burial of snakes.

The association between Ningishzida and Dilmun may be regarded as at least fivefold: 1) his consort Dazimua was the sister of Inzak, the patron god of Dilmun, according to the myth of "Enki and Ninhurzag"; 2) he has been seen as a precursor to Gilgamesh (and so Bibby's interpretation may also fit in here), at least with regard to the Netherworld; 3) he was known for a connection with water, which was important to Dilmunite religion; 4) he possessed a connection with trees, which brings to mind not only the anthropomorphized tree on the Dilmun seal mentioned above but also the fertility aspect of water and seems reminiscent of Inzak, who was associated with the date-palm and whose emblem was the palm frond; and 5) he was associated with death and serpents, both prime features of the *Epic*

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<sup>2</sup> The existence of the seal with the anthropomorphized tree upon it was pointed out to the author by Dr. Flemming Højlund (pers. [comm.](#), 2007).

of *Gilgamesh* (and the latter also relevant to Dilmun seal glyptics) which, at least in terms of his Netherworld capacity, are clearly linkable to Dilmun's significant mortuary culture by means of their roles in *Gilgamesh's* tale (see Al Nashef, 1986: 346; Crawford and Moon, 1997: 15; Kramer, 1972: 58; Tinney, 1998: 27; Van Buren, 1934: 63-76)

Ningishzida's association with the Snake Sacrifices may be made on the basis of: 1) the presence of snakes; 2) the burial of snakes, thus associating them with "what is beneath the earth", death and the Netherworld, and primarily through the use of pots, bowls, and the like which are conceptually reminiscent of pot burials and bath-tub coffins (employed in Mesopotamia from at least the Ur III Period and 7<sup>th</sup> century BCE respectively); 3) Ningishzida's role as an averter of illness and evil, especially since such aversion has already been suggested with regard to snakes and the Snake Sacrifices by Bibby; 4) Ningishzida's "assimilation" to the god Nabu, who had a temple in Dilmun and whose local equivalent was Inzak according to epigraphic sources, thus suggesting that the identities of Ningishzida and Inzak to some extent overlap (as does their sharing of tree iconography); and 4) the Snake Sacrifices' use of beads (see Al Nashef, 1986: 347; Bibby, 1996: 31, 120-121; Potts, 1990: 287-288; Van Buren, 1934: 62-63).

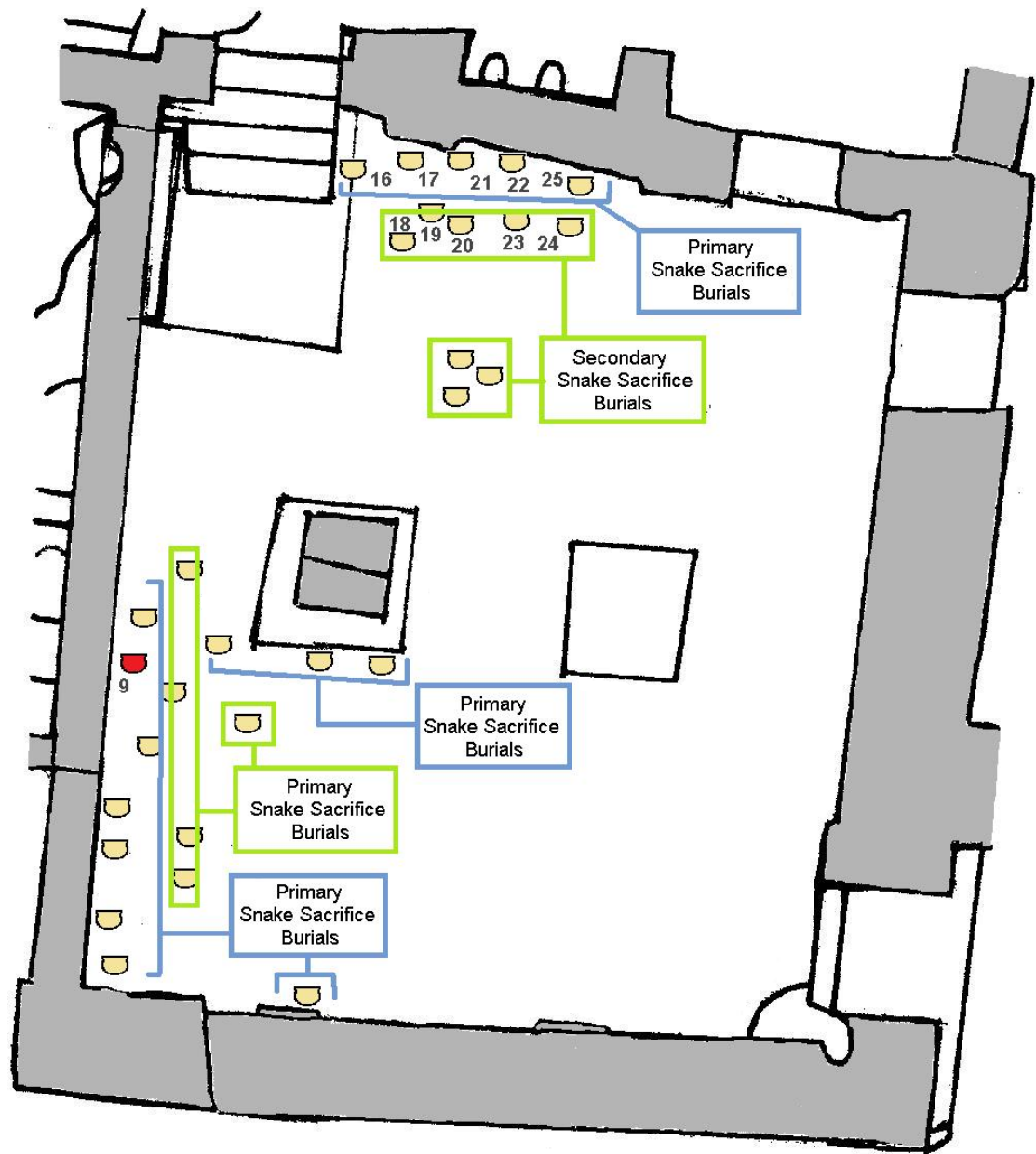
With regard to the use of beads, it is interesting that in the myth of "Ningishzida's Journey to the Netherworld", his sister offers "dainty lapis lazuli beads" from around her waist as a bribe to the demon leading her brother to the land of the dead (see ETCSL, 2006b: t.1.7.3.38-44; Shushan, 2009: 80). It is true that the Snake Sacrifices at Qala'at al-Bahrain do not include any lapis lazuli beads, but nonetheless the association of beads with a snake (one of the symbols of Ningishzida) in an underground setting similar to actual human burials (for such were the snake interments) in a land with a significant mortuary culture seems quite an interesting speculation. However, speculation it must remain until corroborated or refuted by other, more sound, pieces of information. If corroborated, then it would imply that the Snake Sacrifices were either buried for devotional reasons or were offerings made to the deity on behalf of the deceased (emphasizing his Netherworld role) if not some other reason such as averting illness or harm.

Though the interpretations for the Snake Sacrifices given by Glob and Bibby both seem plausible, others, such as a connection with Ningishzida (as per the above), may also be possible. Nonetheless, the nature of the beads as an offering, made with an intent based on considerations of wealth, must surely have been a part of the snake interments (regardless of whether pearls were included or not). This has already been suggested by Bibby (1996: 120-

121). Why else would some of the Snake Sacrifices contain more than a single bead, if this were not the case? Whilst most snake burials contain a single specimen, others contain two or more (Højlund, 1997h: 134-144). One Snake Sacrifice (No. 9) actually produced 26 beads, which seem to have been bound in a necklace (Højlund, 1997h: 136, Fig. 642). The relationship between value and the bead materials used in the sacrifices will be explored further in the next chapter.

It seems the Snake Sacrifices themselves were concentrated mainly along two of the walls of Room A8 and a single wall of Room B12, in a purposeful manner, with a diminishing of concentration the more one moves away from these (see Figs. 22a-22b) (see Højlund, 1997h: 134, Figs. 627-628). With the snake burials further away from the walls, no specific intent behind their positions seems apparent apart from managing because there was very little space left where the original concentrations followed the walls. Even the series of five burials (18, 19, 20, 23, and 24) in Room A8 seem spread so as to parallel another series (16, 17, 21, 22, and 25) found by a wall near them; and this is as near to purpose as the former series got (see Fig. 22a) (see Højlund, 1997h: Figs. 627-628). Thus we may assume the older (or primary) sacrifices of each group (associated with each wall) to have been against the walls, with the newer (or secondary) ones further away. Snake Sacrifice 9 was one of the oldest, based on this reasoning, and, since it portrayed wealth as a consideration in making offerings, it seems this aspect of the Snake Sacrifices was present from the start.

Moreover, whilst some of the beads may represent more meager offerings (as suggested by Bibby in his hypothesis), others seem to be more substantial (any possible pearls aside). More can be made of this when we enter into the subject of bead materials. Nonetheless, the association between the value of beads and the act of sacrificing snakes does imply that the former was a factor in the belief of those burying the serpents.



**Fig. 22a.** The distribution of Snake Sacrifices in Room A8, with "primary" and "secondary" ones (as mentioned in the text) indicated. Snake Sacrifices specifically referred to by number in the text are also made conspicuous by the inclusion of these numbers in the plan, and Snake Sacrifice 9 is distinguished further by being portrayed in red. The plan itself is based on (though modified from) that given by Højlund (see 1997h: Fig. 627).

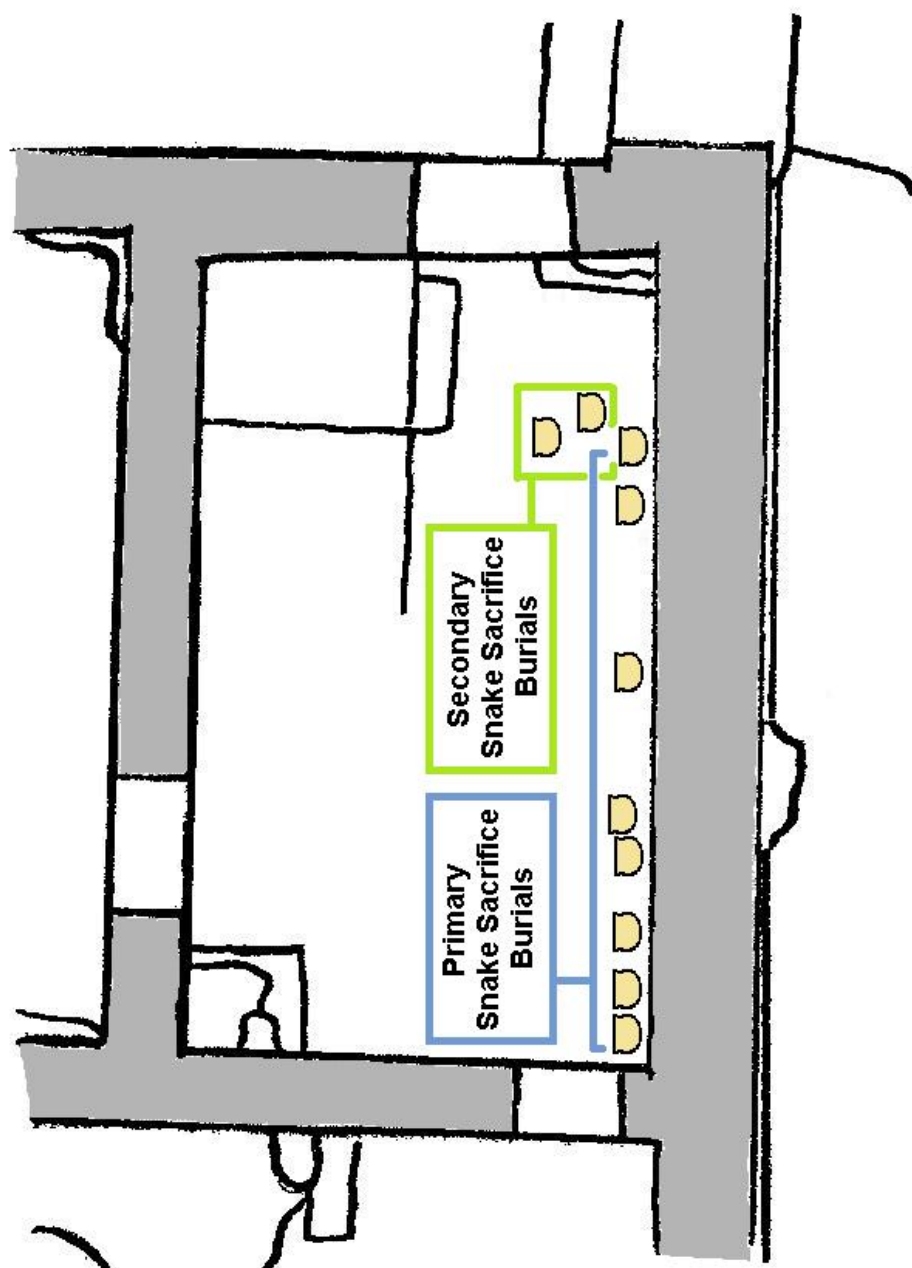


Fig. 22b. The distribution of Snake Sacrifices in Room B12, with "primary" and "secondary" ones (as mentioned in the text) indicated. Like Fig. 22a, this plan is based on (though modified from) that given by Højlund (see 1997h: Fig. 628).

#### **D. Late Dilmun Beads from Human Interments at Qala'at al-Bahrain**

Only one human interment that has produced a bead find possibly falls into the latter part of the same chronological bracket as the Snake Sacrifices: Bath-tub Coffin 1 found under Room 3A of Excavation 519, and this burial has given us only a single bead (B436) (see Fig. 21) (see Højlund, 1997i: 145). It is nonetheless a striking example of Mesopotamian burial culture having been imported to Bahrain, both in the use of a clay “coffin” of the “bath-tub” shape and in the burial’s location beneath a structure associated with human activity within an urban environment (Lombard, 2000c: 119; Pollock, 1999: 206, 216; Potts, 1990: 319-320, Fig. 36). All that can be stated at present with certainty about the age of Bath-tub Coffin 1, based on stratigraphy, is that it represents a burial postdating Period IVb that could belong to any of the Late Dilmun chronological subdivisions up to IVE (Højlund, 1997i: 158-159).

Regarding pot burials, 17 different ones were excavated at Qala'at al-Bahrain, but only six of these produced beads; despite this, a sizeable number of beads (i.e., 156 specimens) was obtained from these six, with the largest amount (i.e., 132 beads) coming from a single burial (see Fig. 21) (see Højlund, 1997i: 152-157). This was Pot Burial 16 from Room A9. Room A9 contained five burials, three of which produced beads (see Højlund, 1997i: 152-155, Fig. 684). The other three burials that contained beads were more isolated in location across the Late Dilmun palace structure, for each was found in a different room (see Højlund, 1997i: 156-157, Fig. 684).

Like bath-tub coffins, pot burials are another type of interment that has been encountered in Mesopotamia. The practice has been noted there in stratigraphic levels ranging from those of the Ur III Period to those of the Achaemenian era (Højlund, 1997i: 159). Those at Qala'at al-Bahrain belong to the very final subdivision of Period IV and so the Achaemenian presence on the Islands, possibly introduced by Mesopotamian immigrants as an “imported” practice (Lombard, 2000c: 119).

## **Period V: The Tylos Era**

### **A. Tylos and Its Beads**

Following the conquests of Alexander the Great, Bahrain entered the Tylos era (i.e., Period V) (Salles, 2000: 132). For almost a millennium, up to the arrival of Islam on the Islands, it existed, much as it had in Period IV, as a dependency more or less of larger nations further north. It was, in turn, either under the control of or influenced by the Seleucids, Mesenians (i.e., Characenians), Parthians, and Sasanians. At least, this is the picture delivered to us by epigraphic evidence (see Andersen, 2007: 237-238, 241-242; Boucharlat and Salles, 1989: 83-85; Callot, 2000: 188; Salles, 2000). However, it has also been suggested that this is an “over-simplification”, and that the reality was probably a Bahrain that was “autonomous” but “closely associated with the successive dynasties who exerted their authority over the merchants and sailors who constantly sailed across the Gulf between the mouth of the Euphrates and India” (Salles, 2000: 135).

It seems evident that Bahrain had achieved in the early centuries of the Tylos era (before a decline eventually set in) a socio-economic standard not necessarily exceeding but certainly comparable to that it once held in Early Dilmun (see Andersen, 2007: 239-241; Boucharlat and Salles, 1989: 84; Musameh, 2000: 206). At the time of its greatest Iron Age commercial influence as well as thereafter, it participated in and acted as a passage for trade through the Gulf region (Andersen, 2007: 239; Boucharlat and Salles, 1989: 84; Musameh, 2000: 206). 2,564 beads in the sample derive from this era of renewed prosperity and decline (i.e., Period V), compared to the 11 specimens from Period III (i.e., Middle Dilmun) and the 333 beads from Period IV (i.e., Late Dilmun). That is actually over 53.27% of the Bahrain sample total (4,813 beads), compared to less than 0.03% and almost 6.92% respectively. Of the remaining beads in the sample, almost 38.77% date to Periods I and II (i.e., Early Dilmun) – that is, 1,866 beads. Only 39 beads that belong to other eras, straddle two or more periods, or else are uncertain/indeterminable in terms of dating are left over, amounting to 0.81%.

Since beads are luxury goods and definite markers of wealth, at first glance it might seem that Bahrain’s prosperity in the Tylos era far exceeded that even of its Early Dilmun stage. However, it might be nearer the truth to state that Tylos recaptured something of the commercial importance and network of contacts that once supported Bahrain in the Early Dilmun period. The larger number of Tylos beads in the Bahrain sample can be accounted for,

amongst other things, if one considers the excessive plundering of Early Dilmun graves that took place in antiquity. Such plundering seems to have been less extensive (though still present) during the Tylos era (Herling, 1994: 228-231; Lombard, 2000d: 178). One reason put forward is that especially wealthy Period V burials were less visible than their Dilmun counterparts due to the nature of the former and that they were laid in close proximity to each other and under an accumulated mound that shielded their differences (Lombard, 2000d: 178). A second consideration is the fact that since Early Dilmun was a far older epoch, one that had ended over a millennium before the start of Period V, this simply meant that more time would have been allowed for its tombs to have been robbed. However, though Tylos era grave (and, by extension, bead) robbing may not be as visible in the archaeological record as the similar treatment of Dilmun burials, the repercussions of its having taken place must nonetheless be borne in any archaeological examination of Period V beads. It is important to be aware of this, especially since these small finds continued to play an important role in the funerary culture of the Tylos era as they had in earlier Dilmun epochs.

## **B. Tylos Beads and the Obol Tradition**

Here a potentially significant observation may be made in illustration of the relevance of burial beads in Period V. Many of the era's child interments, when in pot burial form, seem to have contained only a single bead; examples with more have been found, but many contained only a single specimen (which precludes this phenomenon being due to coincidence or robbing). Whilst a lone case may represent adornment, it could have also followed the obol tradition. This has been observed in adult Tylos burials as well, where single beads and sometimes coins were placed in the mouth of the deceased (Herling, 1994: 229; Herling, 2000: 139-140). The position of the bead in the adult tomb often indicates where it had been placed (Herling, 2000: 139). This brings to mind the Greek custom of placing a coin on or in the mouth of the dead to pay for their passage to the Netherworld (i.e., to pay Charon, the ferryman of the river Styx) (see Stevens, 1991).

It is not unlikely that such a custom could have arrived with the Seleucid period, and adapted to local use by employing beads as well as coins. Of course, the custom could have arrived much earlier since similar ones did exist in the ancient Near East. We find a parallel in the story of Ningishzida, given above, where beads were offered to the demon accompanying him on the barge heading to the Netherworld (like the Greek ferry across Styx). It may be



possible that such a custom arrived in Bahrain during the Late Dilmun period, at least as represented by the Snake Sacrifices (if these may be linked to Ningishzida), which resemble non-human equivalents of pot burials, and persisted thereafter into the Tylos era, with beads still being used in connection with the afterlife. The pot burials of Period IVe at Qala'at al-Bahrain and those of Tylos, many containing only single beads, might represent the persistence of such a custom; and even in cases where more beads have been found, these do not necessarily preclude what we have been discussing. With the arrival of the Seleucids, coins may then also have been introduced when parallels between the Greek and Near Eastern obol traditions were observed.

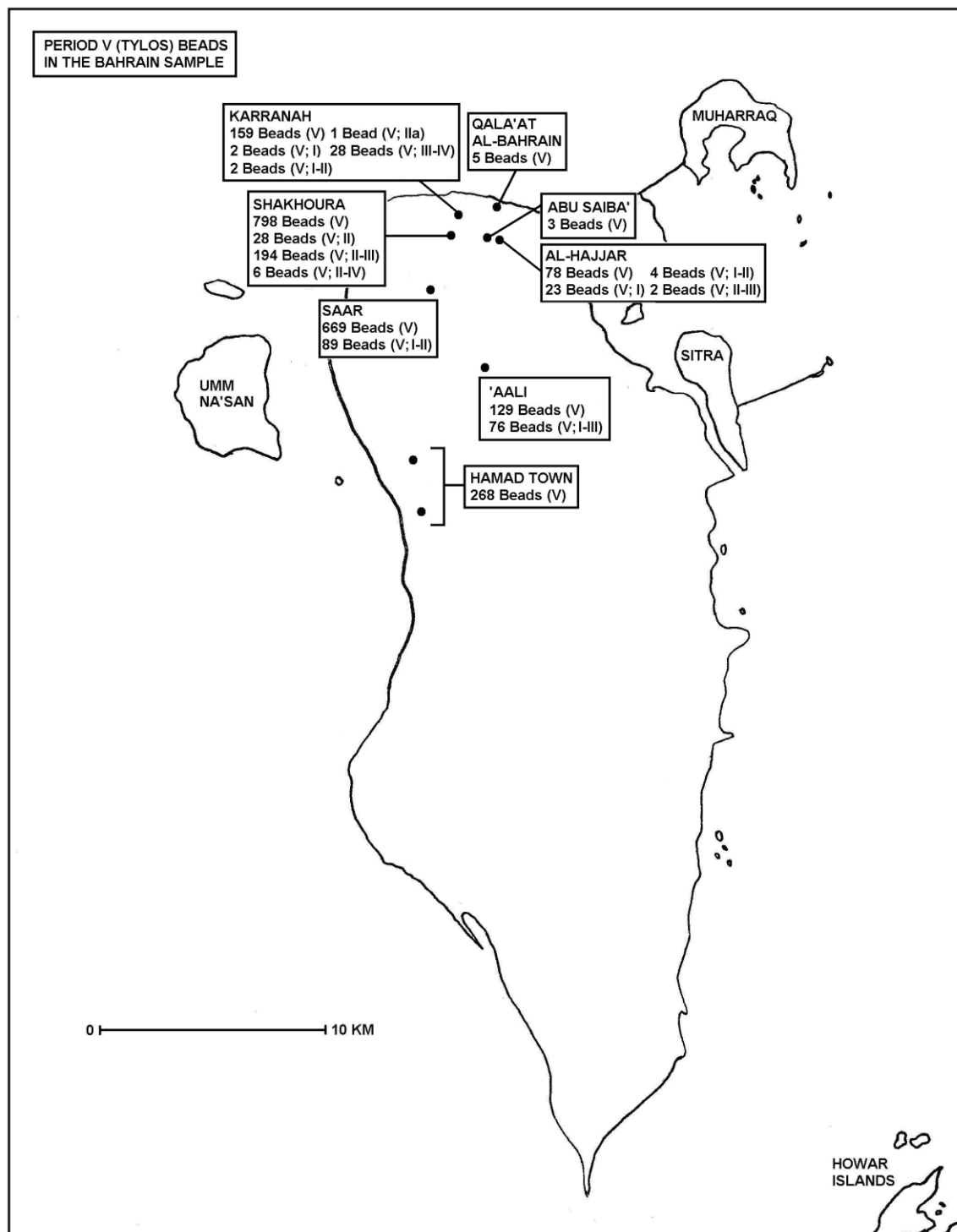
### **C. Tylos Beads, Mortuary Sites, and the Return of the “Fertile Strip” to Prominence**

Another indication of building upon older traditions is the use of older Dilmun mortuary sites (including Period III and Period IV burial reuse sites) for Tylos cemeteries (see Map 7). We observe this at Hamad Town, which site has contributed 205 and 63 beads respectively from two different burial contexts (see Fig. 23). 'Aali was also a Dilmun burial site that saw funerary use during the Tylos era. An example of a Period V burial at 'Aali is provided by Captain Higham's Grave 46 (see *During Caspers*, 1980: 12-13, Pl. XIII). This grave produced 76 beads. Despite there being other funerary goods, it should be pointed out that the beads were a prime factor in the dating of the burial (see *During Caspers*, 1980: 13). Another Tylos grave at 'Aali produced 129 beads.

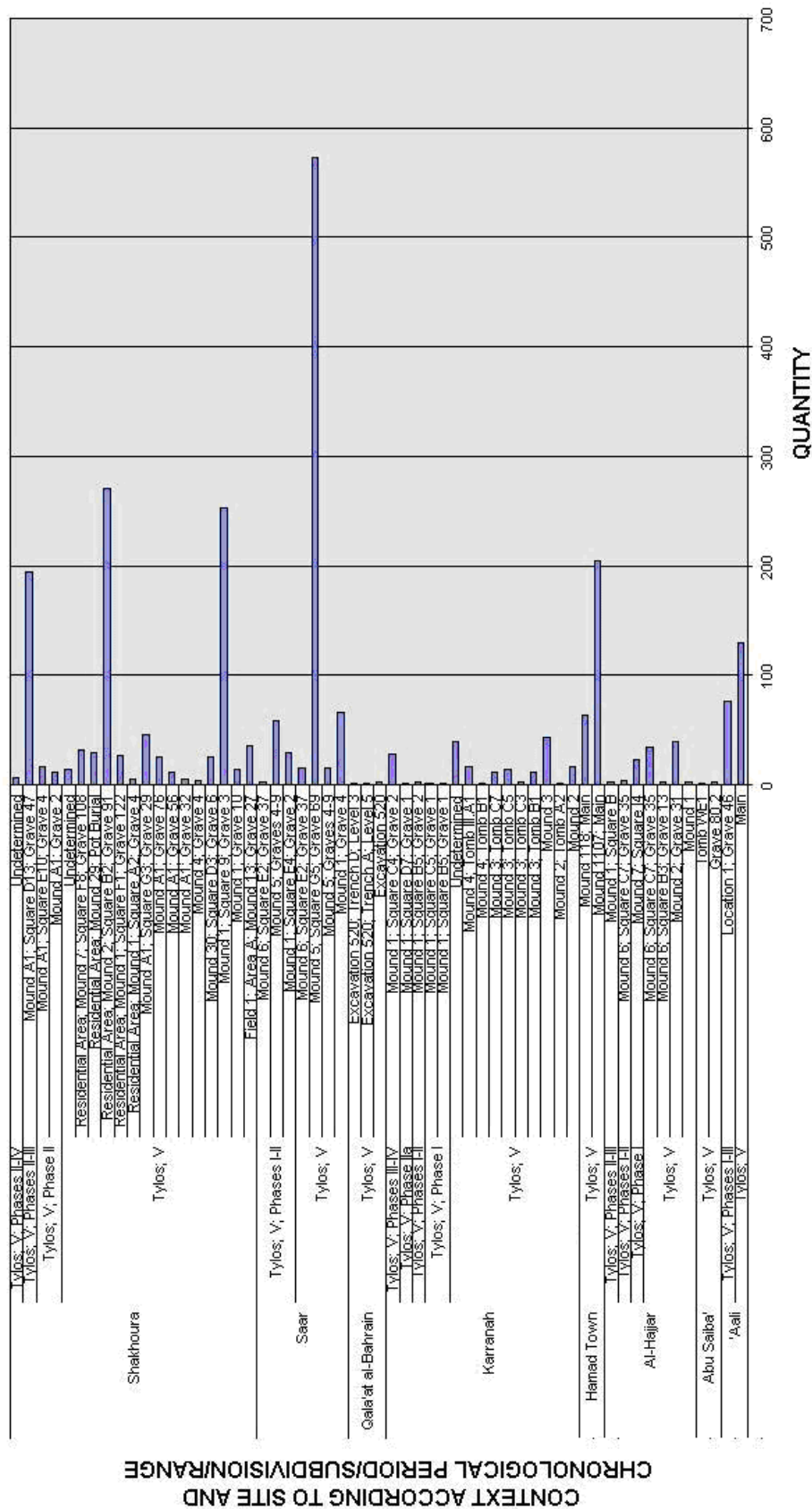
During the Tylos era, Saar also had the status of a mortuary site. Three different Period V funerary sub-sites at Saar have contributed beads to the Bahrain sample (see Fig. 23). In the typical manner of Tylos mortuary practice, the sub-sites were mounds that contained a series of cist graves. Mound 1 provided 66 and 29 beads respectively from two different graves (i.e., No. 4 and Square E4's No. 2). Mound 5 produced 73 beads from its Graves 4 to 9 whilst 573 (an enormous amount) came from its Grave 69 (located in Square G5). This is the largest amount of Tylos beads from a single burial represented in the Bahrain sample; it literally forms over 22% of the Tylos bead total. 17 beads were obtained from Grave 37 of Mound 6's Square E2. The above represent the whole of Saar's Tylos contribution to the Bahrain sample.

It is also during the Tylos era that we find al-Hajjar, Karranah, and Shakhoura becoming once again prominent as mortuary sites (see Fig. 23). The first of these, al-Hajjar,

contributed 107 Period V beads to the Bahrain sample, and these from six different contexts: two in Mound 1, Mound 2's Grave 31, Mound 6's Graves 13 and 35 from its Squares B3 and C7 respectively, and Mound 7's Square I4. Shakhoura contributed the largest number of Tylos beads of any site to the Bahrain sample: 1,026 beads, comprising almost 40% of the Tylos total. These were derived from 18 contexts, one of which is a pot burial after the fashion of those referred to earlier. Karranah contributed 192 Tylos beads and nine additional ones suspected of being Period V specimens.



**Map 7.** The locations of sites that have contributed Period V (Tylos) beads to the Bahrain sample. Bead quantities pertaining to the sites are also given, organized by chronological subdivision/range. The chronological subdivisions employed in this map are the phases of the Tylos era. Beads B367, B368, and B374 as well as beads B3744 to B3752 are not amongst the quantities shown in the map, since they could belong to a chronological era other than Period V.



**Fig. 23.** Bahrain sample bead quantities from different Period V contexts.  
Bead B367, B368, and B374 are not taken into account in this graph, since they could be from Period IV rather than Period V. Similarly, beads B3744 to B3752 are also not considered herein because their attribution to Period V is uncertain.

Like the Tylos mounds of Saar, those of al-Hajjar, Karranah, and Shakhoura are principally Period V cemeteries. Mound 1 at Shakhoura has been shown to have been constructed upon an earlier Dilmun mortuary site, owing to the discovery of three Early Dilmun graves built upon bedrock (Alsendi and Ibrahim, 2000: 142; Herling, 1994: 227, 230-231). This appears to have been a common tendency with specifically Tylos cemeteries: the reoccupation of locations formerly employed for burials in an older epoch, thus representing a form of continuity that is not only limited to sites (as indicated above), but also sub-site usage (Alsendi and Ibrahim, 2000: 142). Burial reuse was the prime manifestation of such topographical continuity in the Middle and Late Dilmun eras, but Tylos-specific cemeteries supersede such reuse in conspicuousness in Period V.

If taken on a regional basis, an interesting observation may be made on the basis of such continuity: interments on the fringes of the broad cultivatable band, once witnessed during the Early Dilmun period, were again a feature of northern Bahrain during the Tylos era. This has been observed in the case of many Period V cemeteries (Herling, 2000: 136). Of course, by interments in this region, reference is not being made to burial reuse (which did occur in Periods III and IV as well as the Tylos era) but rather new grave constructions particular to Period V (see Crawford, 1998: 83-84; Lombard, 2000c: 118). Because of such usage of the “fertile strip”, it becomes possible to note that hydrological and cultivation concerns were not the sole reasons for continuity in burial land use, though they must have been to some extent (as they were in earlier epochs) (see Larsen, 1983: 78-80, Fig. 11). Rather, there was more to it than these concerns, especially since freshly constructed cemeteries were appearing in a region that had not seen any (at least, to any significant extent) since the Early Dilmun era.

We may also observe that the construction of new burials on the outskirts of the “fertile strip” seems to have been an indication of Bahrain’s prosperity. When a certain level was reached, marked by Bahrain assuming a major position in Gulf trade as a commercial crossroads, then a parallel growth of cemeteries amidst or near the cultivatable regions of Bahrain took place. The absence of such period-based cemeteries (not reuses) during Periods III and IV in comparison with Periods II and V is one clear indication of this.

It is also interesting to observe that sites associated with the “fertile strip” have provided more Tylos than Early Dilmun beads in the Bahrain sample. Al-Hajjar produced 107 compared to 96 beads; Karranah 192 (not counting the additional nine possible Period V cases) compared to 132; and Shakhoura 1,026 compared to only 60 (see Fig. 18 and Fig. 21).

As has already been stated, this does not need to be taken as proof of greater prosperity in the Tylos era; the difference can be explained by much the same reason Tylos beads outnumber their Dilmun counterparts in the Bahrain sample.

To the above sites, we may add Abu Saiba' with its three beads (B4141, B4142, and B4144) that belong to the Tylos era (see Fig. 23); no Early Dilmun beads were contributed. Abu Saiba' is another site that is situated on the outskirts of the cultivatable land and, despite the small number of beads from it in the Bahrain sample, may be included with al-Hajjar, Karranah, and Shakhoura as another example marking Bahrain's prosperity in Period V.

#### **D. Tylos Beads from Qala'at al-Bahrain and the Probable Existence of "Fertile Strip" Settlements**

But where did the inhabitants of the Tylos era, who furnished the graves of these cemeteries and others, live? Qala'at al-Bahrain is the sole site we know for certain to have been occupied in Period V, though it may not have been the only one (see Herling, 2000: 136; Herling and Salles, 1993: 166; Salles and Lombard, 2000: 148). Qala'at al-Bahrain has produced five Tylos beads, recovered by the Danish Expedition from their Excavation 520 (see Fig. 23). A comparable amount was obtained from Period IIc levels at Qala'at, with an even larger amount from the preceding Period IIb. Five beads, however, is diminutive compared to the 209 beads belonging to Period IV at the site. However, the fact that almost all of the 209 specimens (that is, excluding four – B418, B419, B592, and B593) were from Snake Sacrifices and human interments accounts for the proliferation of beads compared to earlier and later epochs. Nonetheless, what makes the Period V specimens special is that they were all recovered from Excavation 520; no Tylos beads have been accounted for in Excavation 519 at Qala'at al-Bahrain. This seems to suggest that occupation was concentrated in the area of Excavation 520 during Period V. Such an observation accords well with the interpretation of the palace of Excavation 519 having been abandoned late in Period IV, after which the pot burials were interred there (see Højlund, 1997i: 158).

Another suggestion made is that the occupants of the Tylos cemeteries (whether those along the fertile band or otherwise) came from settlements based in the cultivatable "fertile strip", much after the fashion of the modern villages of Bahrain (see Herling, 2000: 136; Larsen, 1983: 78-80, 84-85, Fig. 11; Larsen, 1986: 26-30, 35, 38-39). We have already observed how this seems to have been the case during Period IIa and likely for a time

thereafter in Early Dilmun. When Tylos recovered some of the commercial prominence that Early Dilmun once held, a similar growth must have occurred, particularly concentrated in the “fertile strip” of Bahrain. This in turn caused a boom in burials and the construction of new cemeteries along the fertile band in much the same areas in which cemeteries existed in Early Dilmun times. This inevitable consequence of Bahrain’s economic flourishing supports the notion already put forward: that the construction of period-based cemeteries along the cultivatable region of Bahrain can be considered an indicator of prosperity on the Islands. And what better hallmark of such prosperity than the proliferation of luxury goods, and beads in particular, in burial assemblages?

# **CHAPTER 8**

## **Materiality of the Beads**

### **8.1 – Purpose**

The previous chapter provided a descriptive account of the background information, contextual information, bead conditions, and chronological periods as these essential features were represented in the Bahrain sample. These were then applied to an archaeological narrative of the Dilmun and Tylos eras. In this chapter, we will follow much the same layout, beginning with a descriptive presentation of additional essential features that define the Bahrain sample. In particular, we will be look at the sample from the standpoint of bead materials, colours, and diaphaneity. Since we are now moving beyond mere background details and a focus on bead quantities as they relate to chronology (see the last chapter), we will build “cumulatively” on the information already set forth and attempt a more in-depth analysis of our sample.

Of course, we will return to the archaeological narrative once more, covering each of the chronological periods in Bahrain systematically from the standpoint of the three additional features of this chapter whilst yet retaining that “cumulative” quality so vital to drawing together different aspects of an enormous and varied dataset as the one we are working with. By doing so, we will define not only the role of bead materials, colours, and diaphaneity across the chronological eras of Bahrain’s past, but also how they contribute to the cultural and socio-economic development of the Islands over the course of the different epochs.



## 8.2 – Bead Materials

A total of 62 different bead materials, including two that are probable identifications (i.e., nephrite and red jasper), have been noted in the Bahrain sample; this does not include combinations (such as gold-glass) or a general reference to “stone” that cannot be distinguished from other minerals (see Fig. 1). It does, however, mean that “banded” varieties of certain materials such as agate and carnelian have been treated as distinct from their regular counterparts. To a consideration of the 62 materials may be added a single specimen (B656) which could either be of black agate or obsidian, and another (B3929) which could be either of steatite or marble; if these two beads are actually of obsidian and marble respectively, then the total to consider should be 64.

These bead materials are, of course, encountered in specimens recovered from the 17 different sites that have contributed to the Bahrain sample (see Figs. 2a-2c). The site that has produced the most variety of materials is Saar; it has provided 28 different ones, which amount includes the identification of black agate/obsidian (regardless of which is represented) as a single material distinct from others at the site, and gold-glass and gold-stone combinations as indicating the presence of glass (since it does not appear alone). Hamala and Umm Jidr, on the other hand, are at the other end of the spectrum, each having contributed beads in only a single material: banded agate and steatite respectively.

Chronologically, Dilmun has contributed 52 different bead materials (54 if one adds the possibilities of obsidian and marble) to the Bahrain sample, whilst Tylos has contributed 28 (counting gold-glass as representing the presence of gold); of course, there is a great deal of overlap between the Dilmun and Tylos material types (see Figs. 3-4). Nonetheless, there is proof enough that resources were more diverse in Dilmun times, with a wider range of materials being used for ornamentation. This is especially noticeable when one considers the greater Dilmun material numbers in spite of Tylos’ 2,564 beads (not including nine additional possible cases) being the majority in the Bahrain sample. Since many of these resources came from specific sources far afield, such diversity does attest to Dilmun’s greater participation in trade networks than Tylos rather than the networks in which Dilmun took part being wider in their reach. The latter is unlikely given the large empires that existed from the 5<sup>th</sup> century BCE onwards (see Diamanti, 2003: 13). Something may also be said of the general tastes attributed to the inhabitants of Bahrain in the Dilmun era, for the Dilmunites seem to have

been more accustomed to such diversity; something not enjoyed to the same extent by the Period V inhabitants of Bahrain.

Certain materials may also be described as the substance *par excellence* of a given era. Carnelian holds this place for Dilmun whilst glass superseded it and all others in Tylos. The ascription of carnelian to Dilmun is due to the preponderance of carnelian finds in excavations (see Fig. 3). However, it is interesting to note that such preponderance is mainly because of Period II sites, in which carnelian is closely followed by faience (the ancient precursor of glass) (see Fig. 5). There is a dip in all material levels associated with Period III, in which it can be observed that of the eleven beads in the Bahrain sample only three are of chalcedonies (two banded agates and one banded chalcedony of the general variety) and none of carnelian.

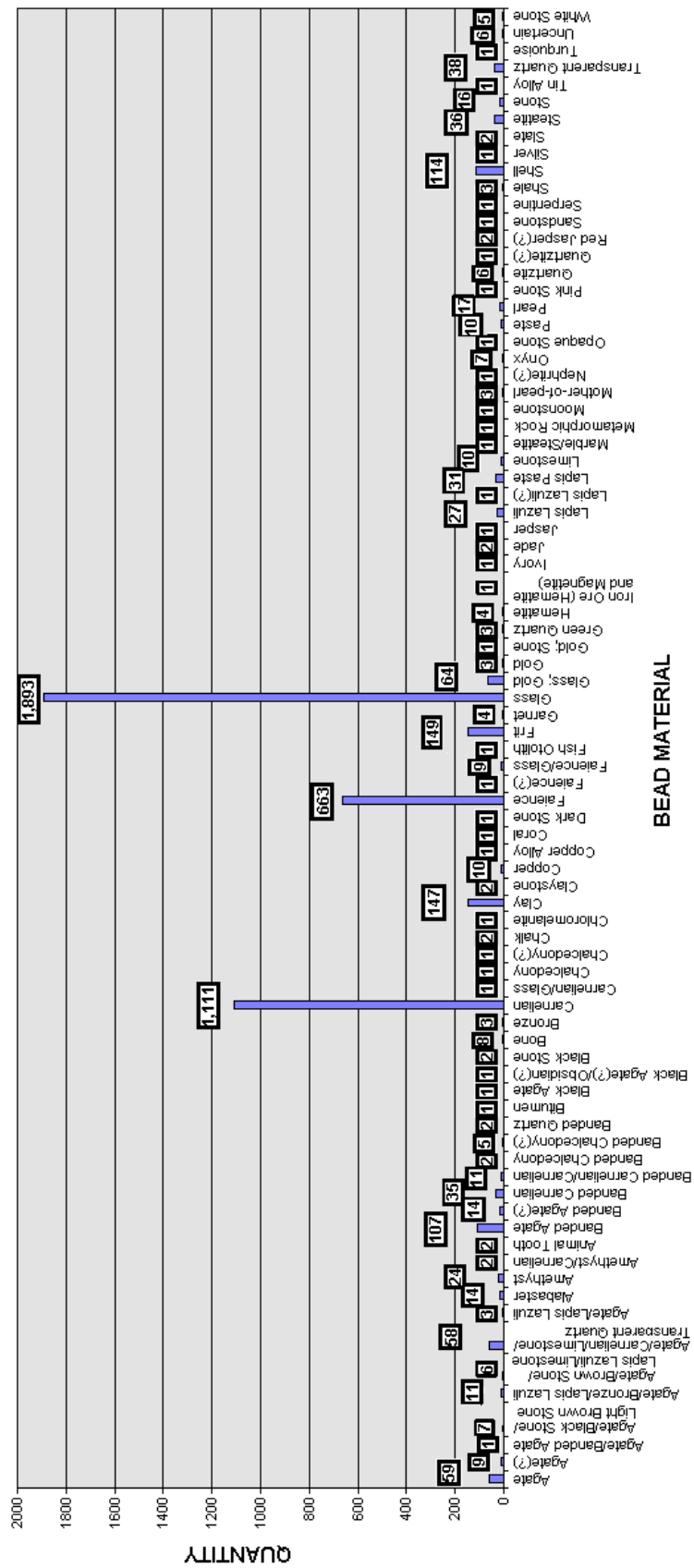
In Period IV, whilst carnelian was present, glass seems to have assumed prominence by a wide margin, superseding any visible interest in carnelian (see Fig. 6). The importance given glass continued throughout the Tylos era (Period V), even in contexts belonging to mid-to-late Tylos (see Fig. 4). Whilst carnelian, faience, and frit are more visible in the archaeological record than other materials, like the others they are still far overshadowed by glass. It is useful to mention at this point that the difference between faience and frit is that the latter is coarser and unglazed; this distinction has been borne in mind in distinguishing between the two materials in the Bahrain sample (see Lankton, 2003: 45; Van der Sleen, 1973: 17, 61).

In terms of which material has been found in the most contexts, carnelian (that is, the non-banded variety) tops the list throughout the Bahrain sample with 174 definite contexts (or 176 ones, counting the contexts of beads B1206, 1207, and B1251, which may or may not belong to the Dilmun era) at twelve different sites, and this precludes incorporating those of beads simply recorded as from Excavation 520 at Qala'at al-Bahrain or from the Saar Settlement, without further information on where they were found at each of these sites (see Figs. 7a-7c). 142 (or 144) of these contexts are associated with Dilmun carnelian beads whilst 32 relate to Tylos specimens.

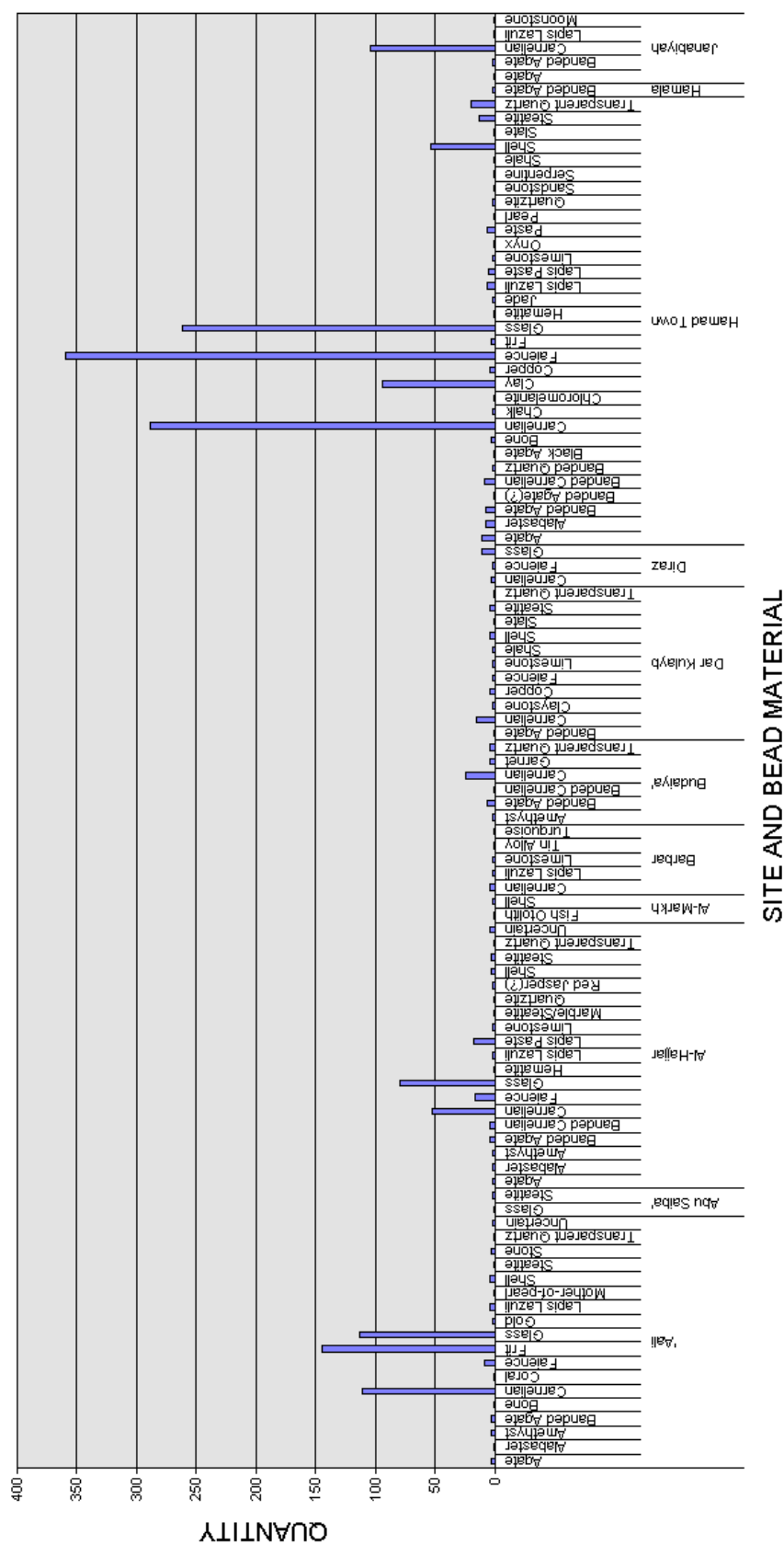
Glass, which occurred in only 20 Dilmun contexts (excluding those specimens identified as simply from Excavation 520 without elaboration), was recovered from 38 different but definite Period V contexts; thus glass was not only the most numerous Tylos bead material, but also the most contextually diversified (see Figs. 8a-8b). It was also found in a single Islamic context represented in the Bahrain sample by a small number of beads from that era.

There are various materials that can be considered at the low end of the diversity spectrum in the Dilmun and Tylos eras, all of which have come from single contexts. Amongst the beads from Periods I to IV, we find the following: animal teeth, bitumen, chalk, chloromelanite, claystone, coral, garnet, green quartz, jade, jasper, moonstone, mother-of-pearl, pearl, sandstone, serpentine, silver, a tin alloy, and turquoise (see Tab. 1). In Period V, we have such one-context substances as bone, clay, a copper alloy, ivory, limestone, and frit (though curiously enough a large amount – 133 beads – was found in the last's single context) (see Tab. 2).

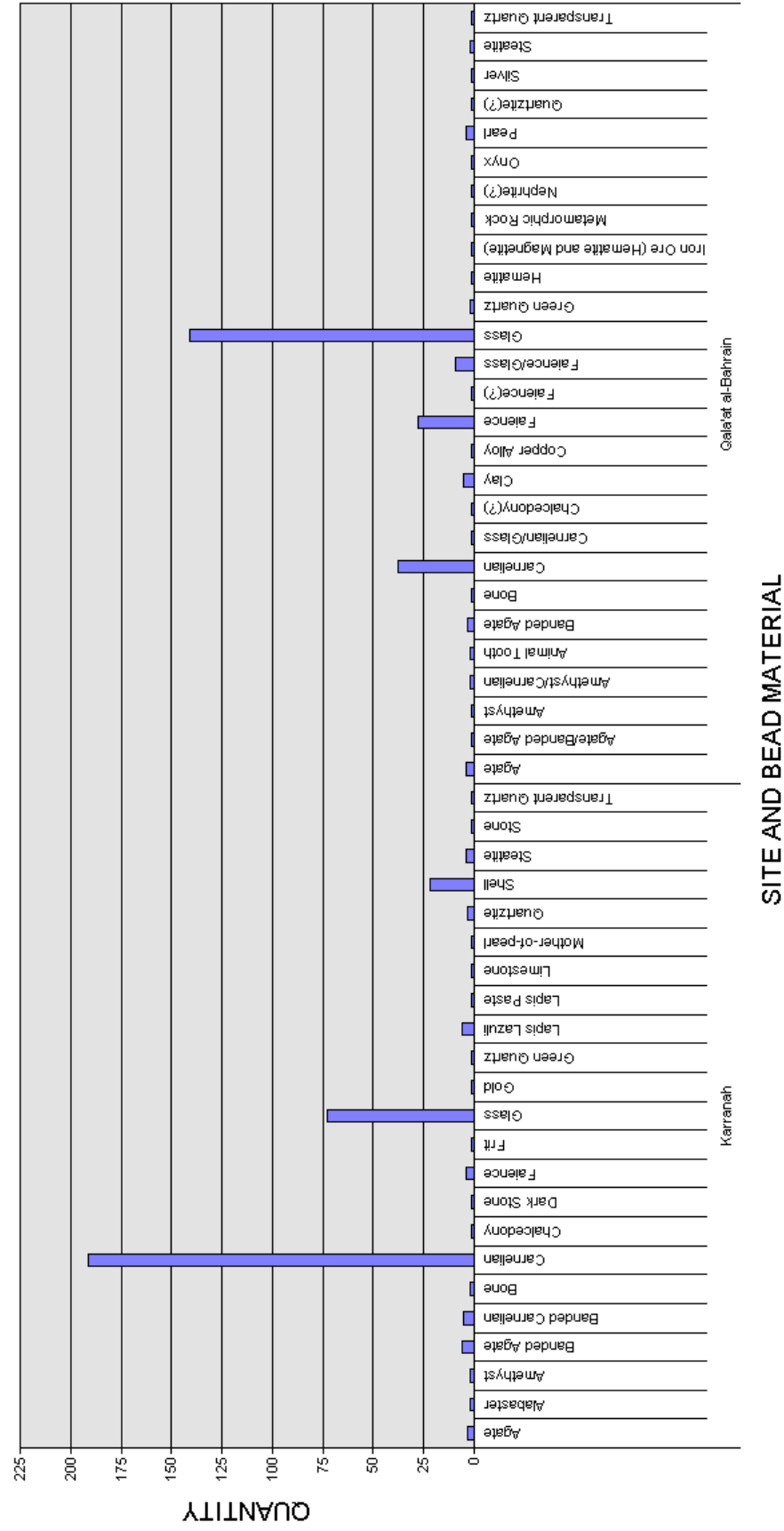
It should be borne in mind that the bead materials in the Bahrain sample derive from one of three distinct classes: mineral, synthetic, or organic (see Tabs. 3-5). It is notable that though minerals tend to outweigh the other two material categories in the sample, and this is primarily due to the preponderance of carnelian (especially in Dilmun), in the Tylos era synthetics appear to be the preferred variety (see Fig. 1 and Figs. 3-4). This is not only because glass was the most widely used material in that era, but also because the number of synthetic material beads (mainly those of glass but aided as well by examples of faience and frit) outweighed mineral ones in Period V.



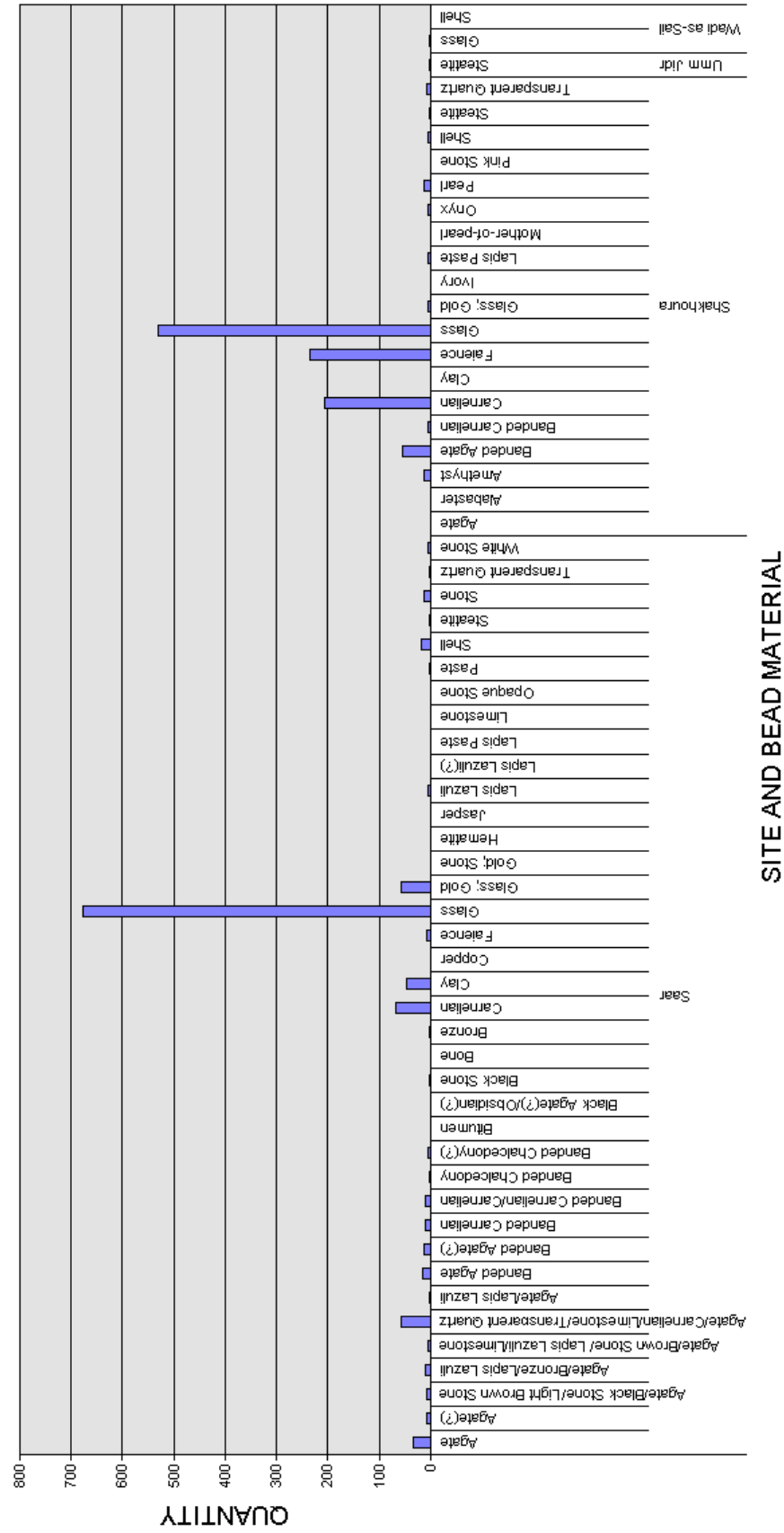
**Fig. 1.** Breakdown of the Bahrain sample by bead material with the quantity of each indicated. Cases where a particular material attribution is questionable or else where more than a single attribution is possible have been treated as distinct.



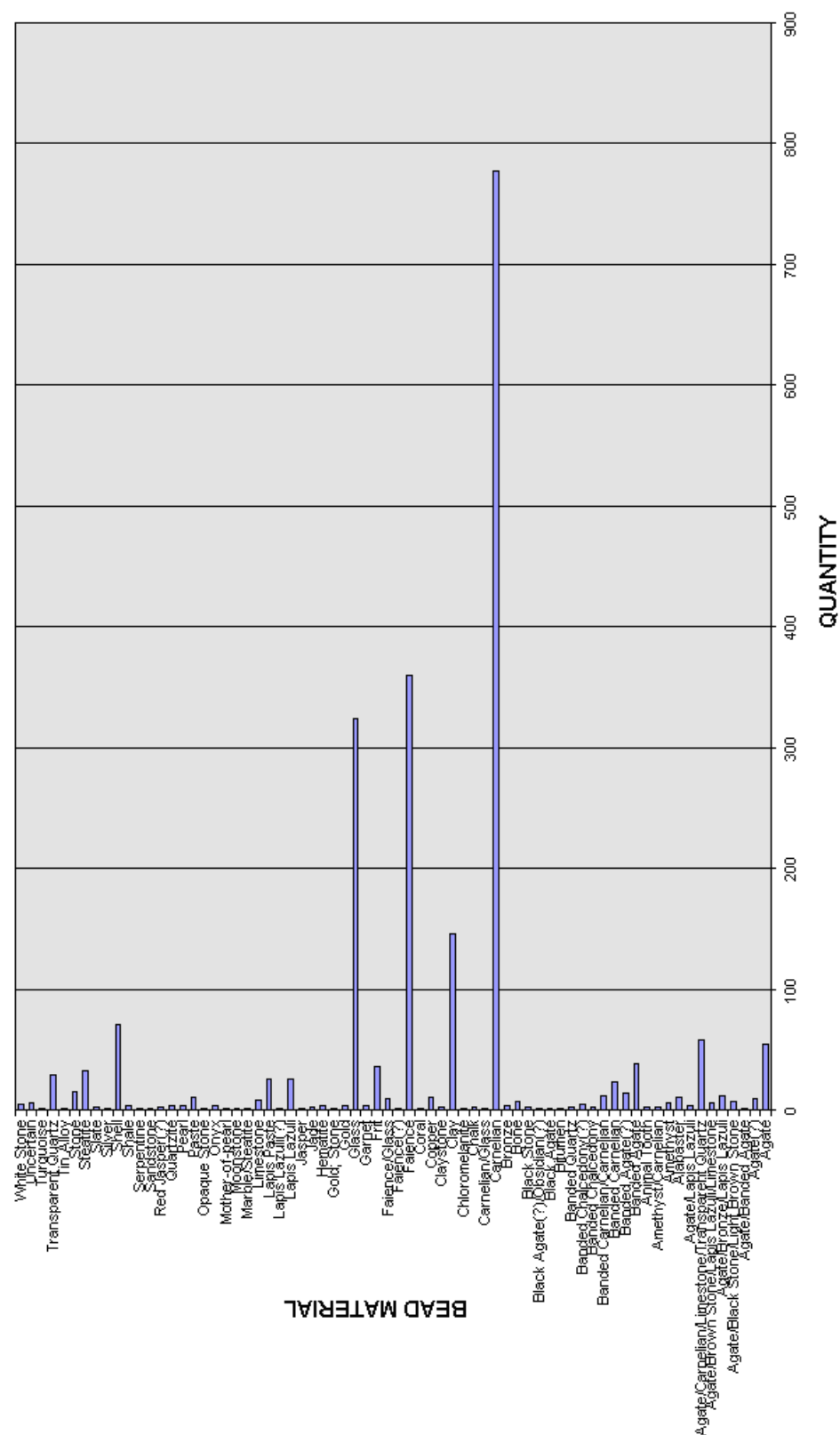
**Fig. 2a.** Breakdown of the Bahrain sample by site and bead material. The sites of Karrahanah, Qala at al-Bahrain, Saar, Shakhoura, Umm Jidr, and Wadi as-Sail are not included as these, along with their material quantities, are covered in Fig. 2b.



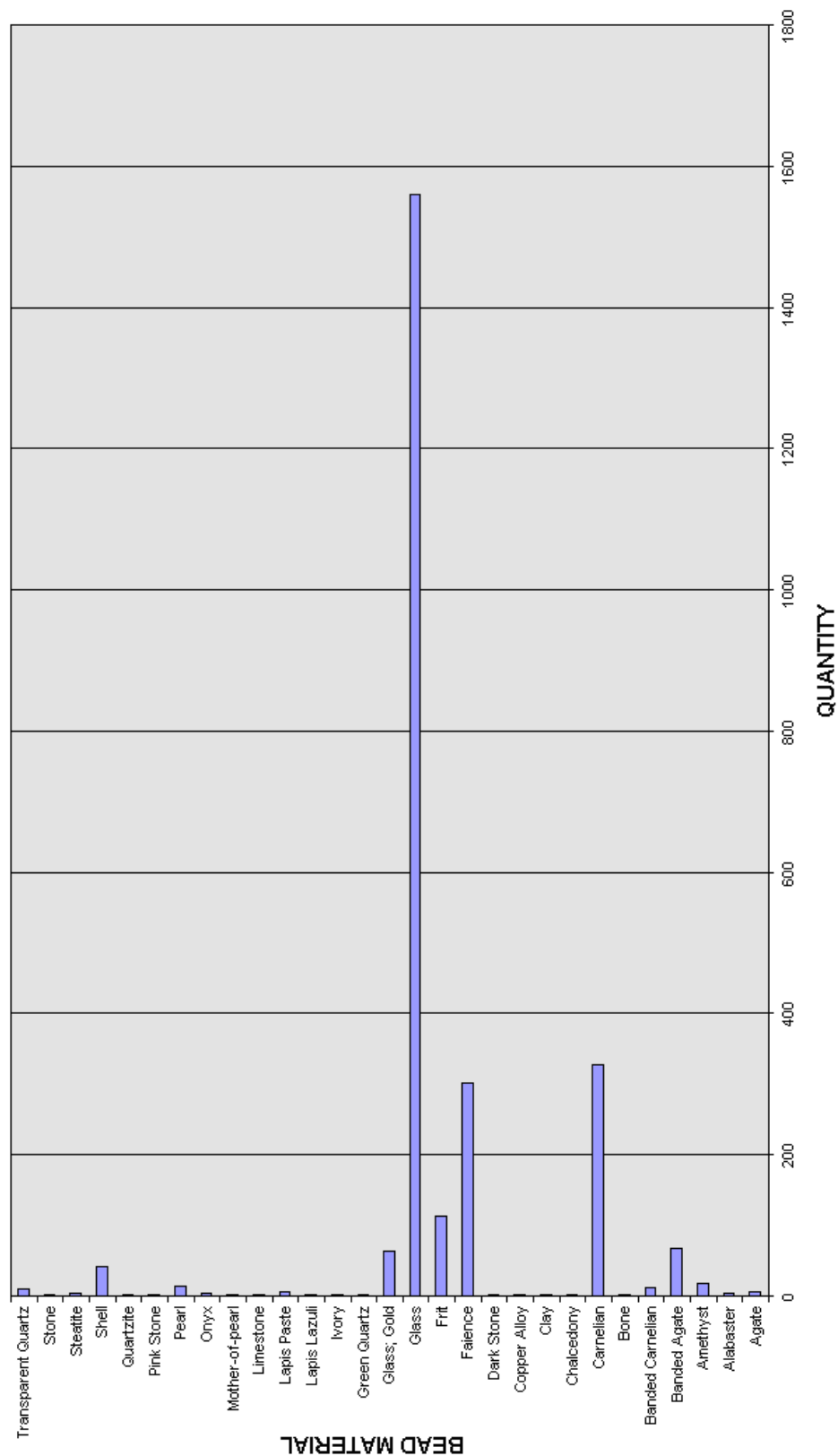
**Fig. 2b.** Material quantities from the sites of Karranah and Qala'at al-Bahrain, as a continuation of the breakdown by site and bead material provided in Fig. 2a. Questionable material attributions are treated as distinct from their confirmed counterparts.



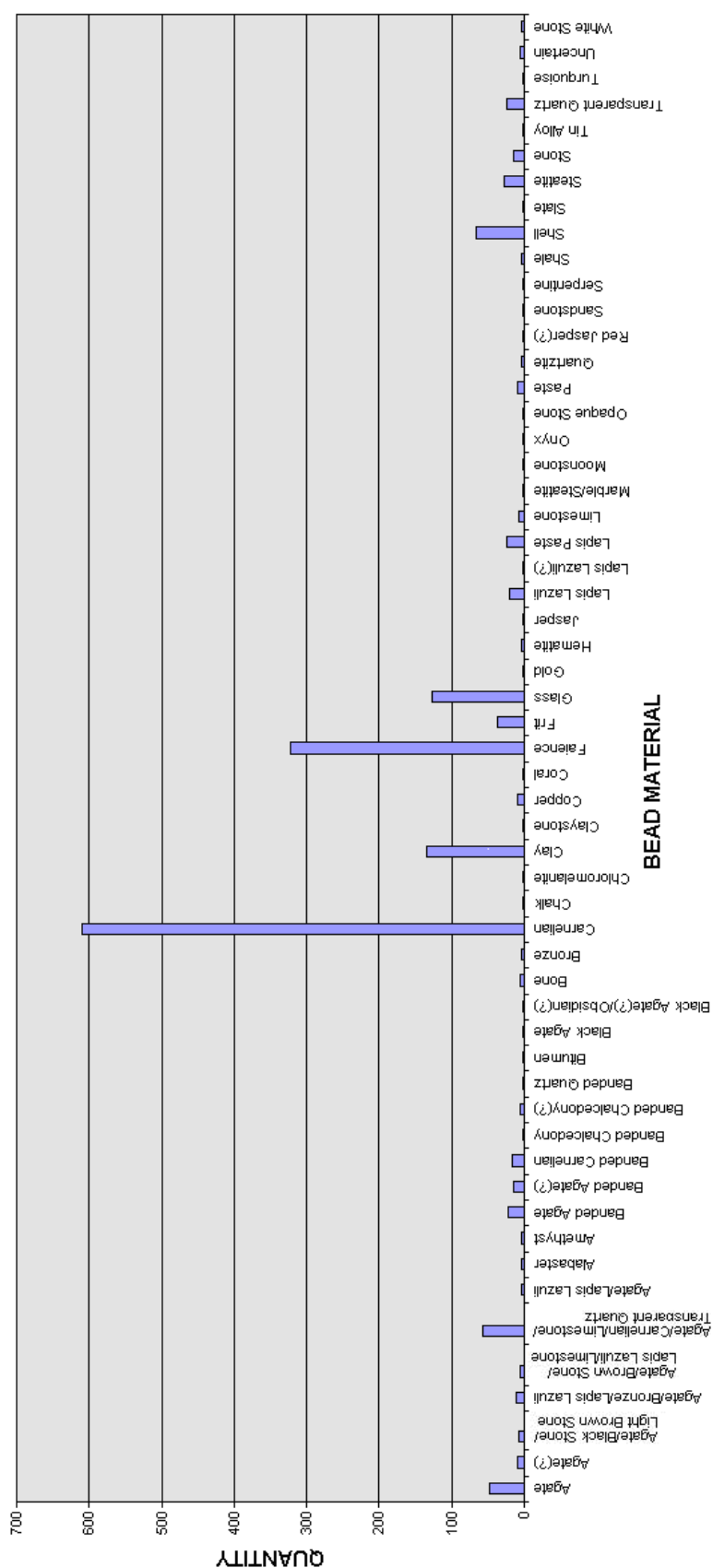
**Fig. 2c.** Material quantities from the sites of Saar, Shakhoura, Umm Jidr, and Wadi as-Sail, as a continuation of the breakdown by site and bead material provided in Figs. 2a and 2b. Questionable material attributions or those involving more than one possibility are treated as distinct from their confirmed counterparts. Seemingly non-existent amounts represent single cases.



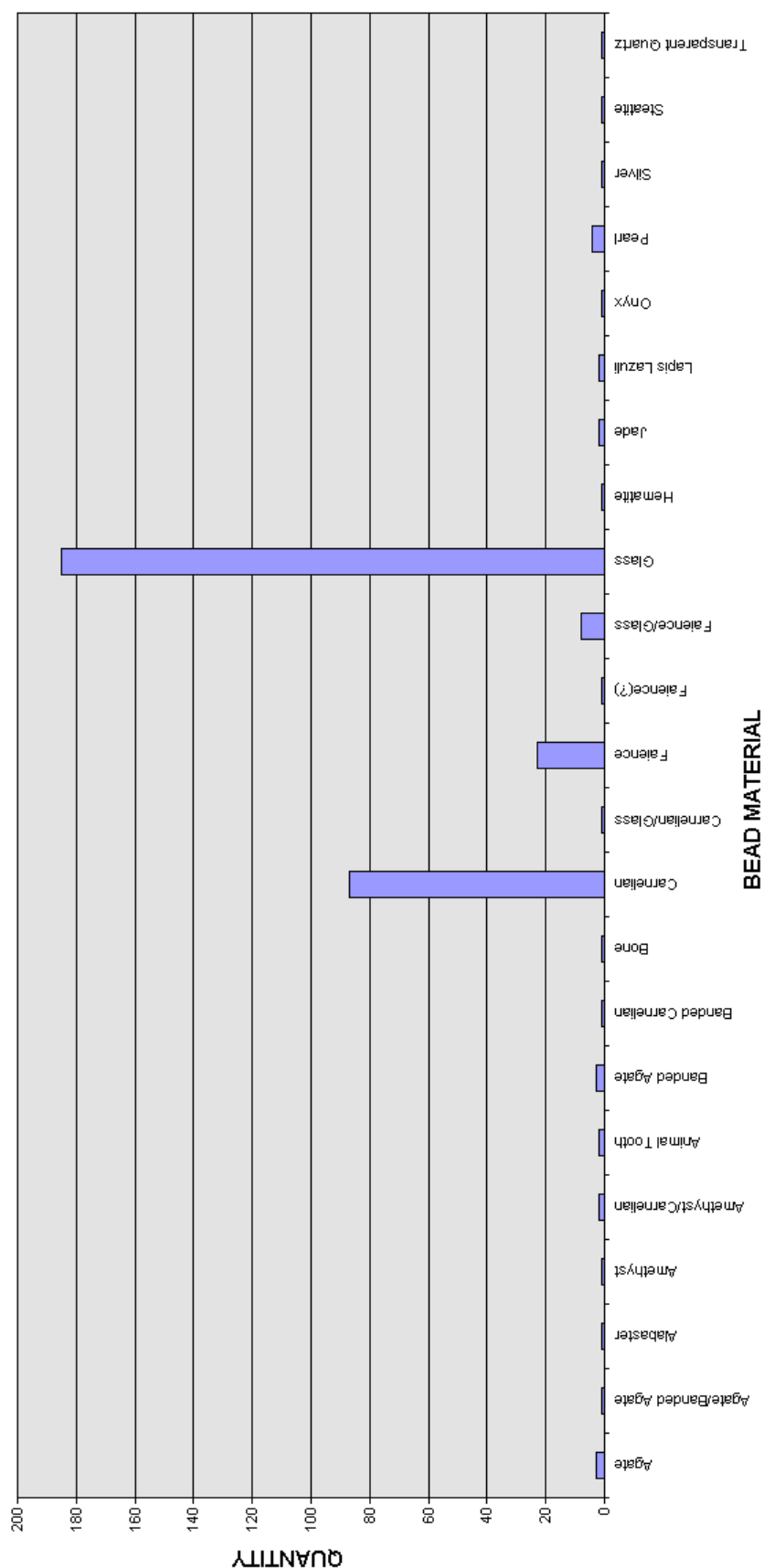




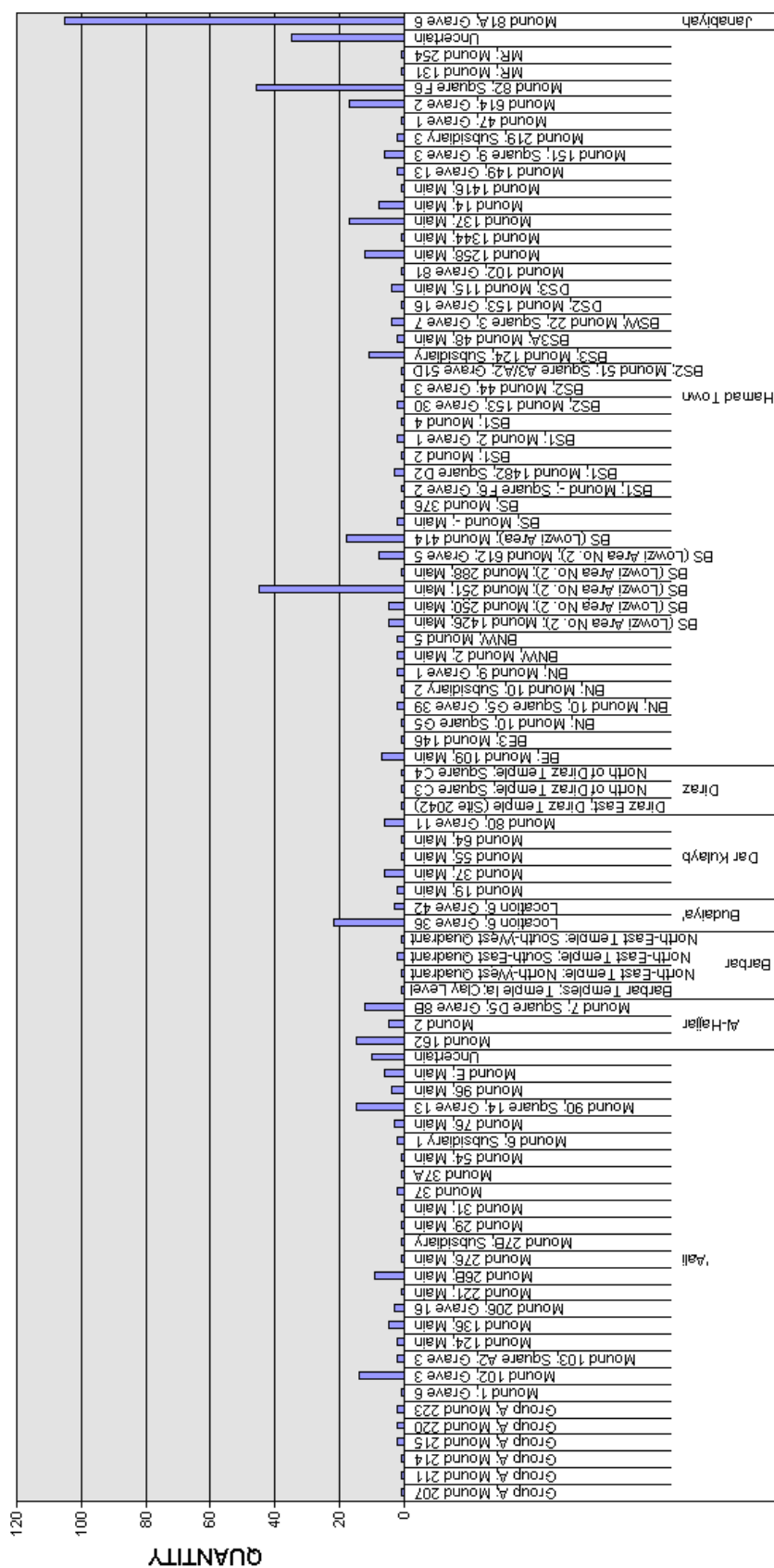
**Fig. 4.** Breakdown of the Tylos specimens in the Bahrain sample by bead material. The same three beads excluded from consideration in Fig. 3 (B367, B368, and B374) have been similarly excluded from this one, since they could belong to either the Dilmun or Tylos era. Moreover, nine beads (B3744 to B3752) have also not been taken into account in this graph because of the uncertainty of their attribution to Period V.



**Fig. 5.** Breakdown of the Period II specimens in the Bahrain sample by bead material. Questionable material attributions and those involving more than one possibility are treated as distinct from their confirmed counterparts. Beads B366, B1206, B1207, B1251, B4115, B4116, and B4117 as well as beads B1567 to B1593 are not taken into consideration in this graph, since they could belong to a chronological era other than Period II.

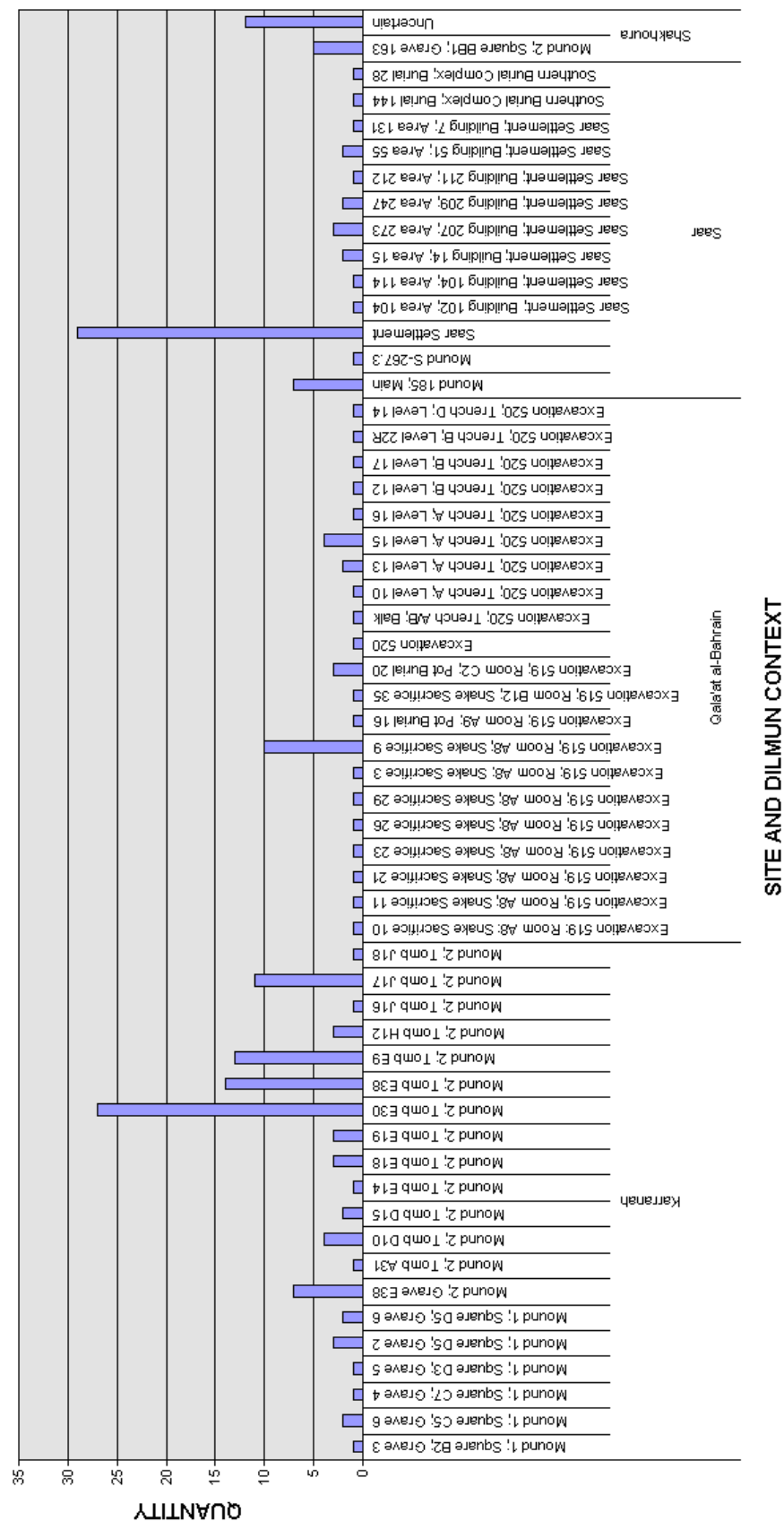


**Fig. 6.** Breakdown of the Period IV specimens in the Bahrain sample by bead material. The single case of questionable faience attribution has been treated as distinct from beads confirmed as being of this material. Moreover, beads B4115, B4116, and B4117 have not been included because they belong to a Ila-IV chronological range which means they could actually be Period II or III specimens. Similarly, beads B367, B368, and B374 have not been included because they could be Tylos specimens rather than Period IV ones.



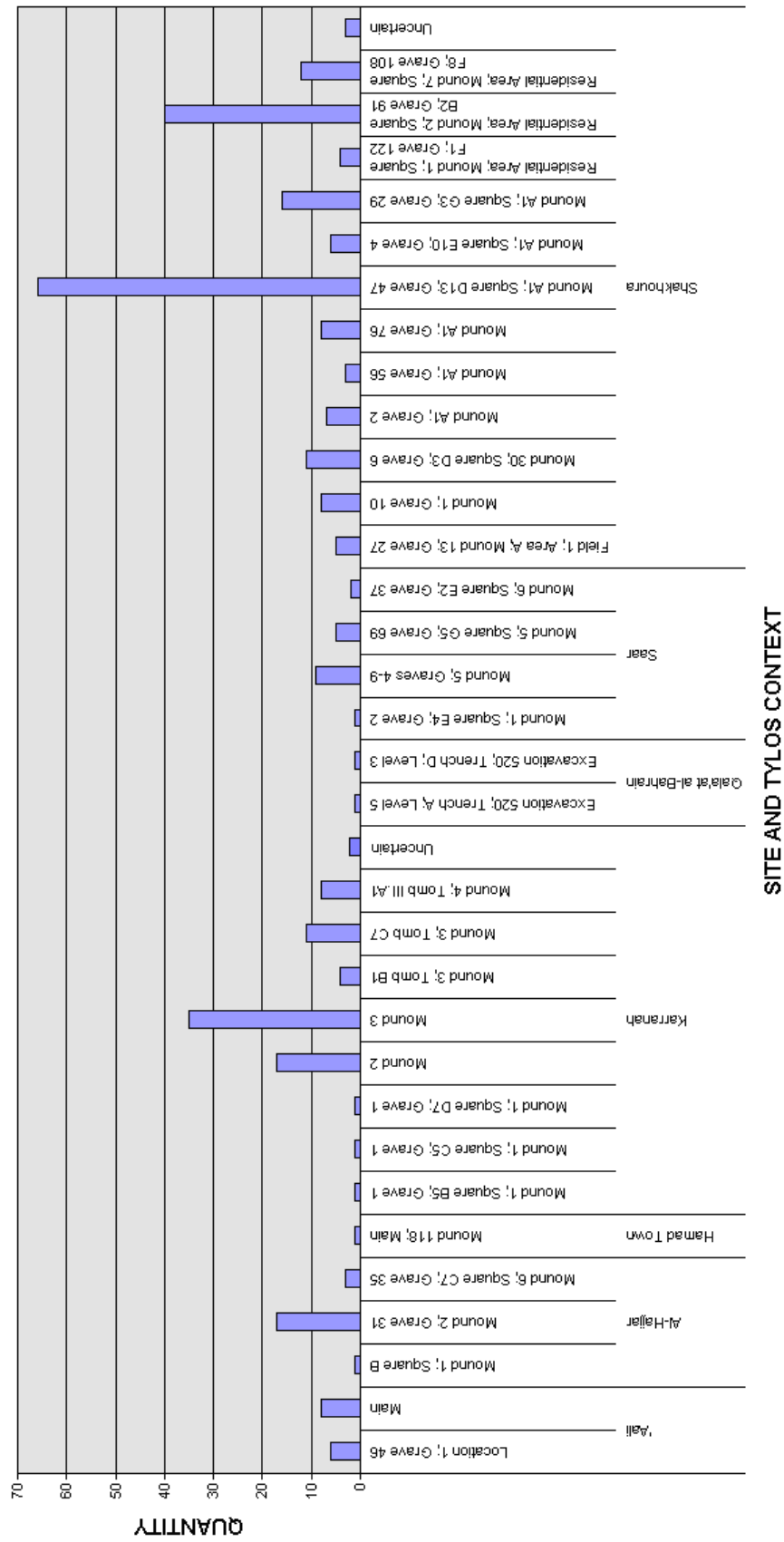
## SITE AND DILMUN CONTEXT

**Fig. 7a.** Dilmun carnelian bead quantities organized by site and context. The sites of Karrahanah, Qala'at al-Bahrain, Saar, and Shakhoura are excluded as these are covered in Fig. 7b. It should be noted that banded carnelian specimens and those cases in which a bead may be of carnelian or else some other material (thus lacking a single and certain material attribution) are also excluded from this graphic representation. Moreover, beads B1206, B1207, and B1251 are not taken into account in this graph, since their attribution to the Dilmun era is questionable.

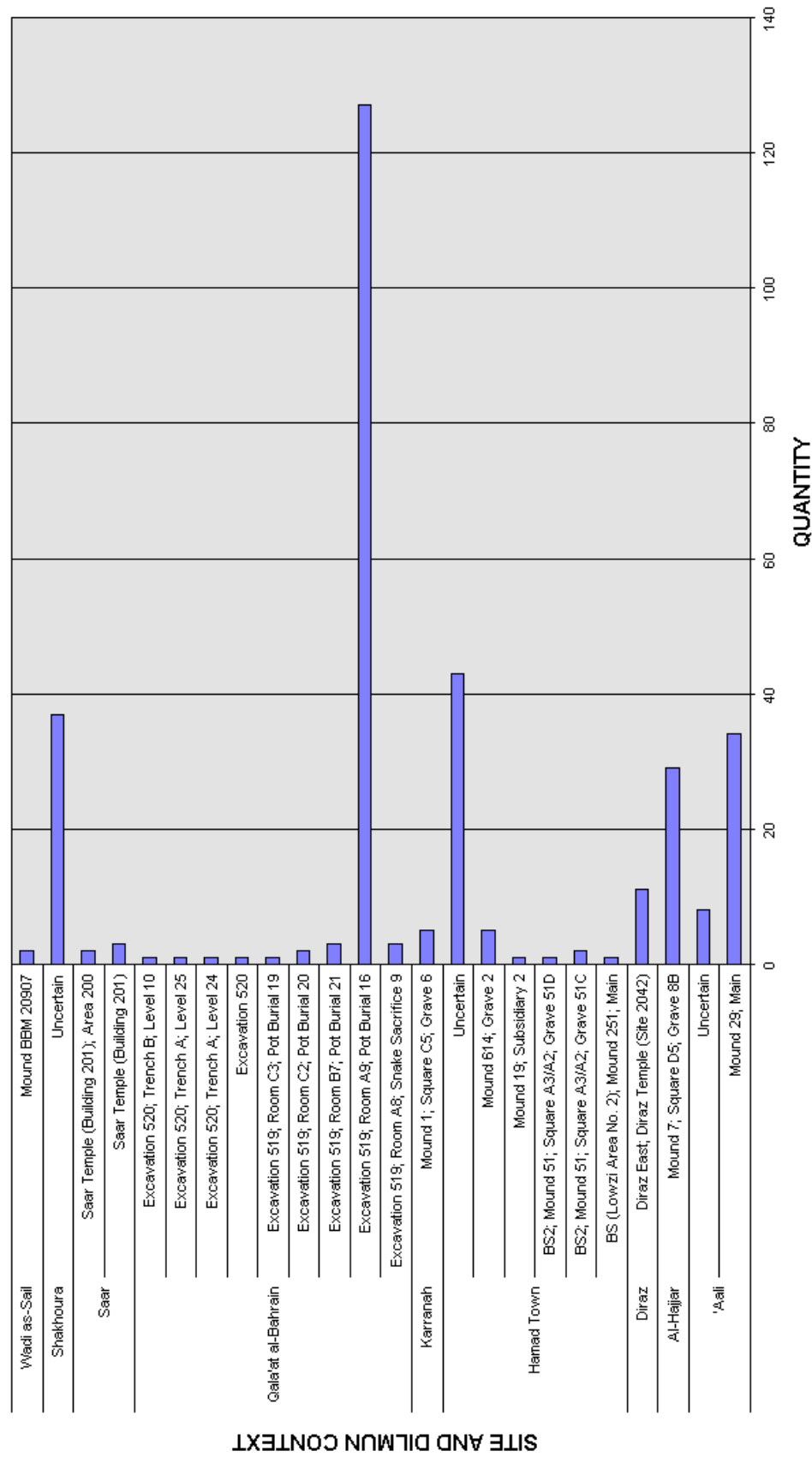


# SITE AND DILMUN CONTEXT

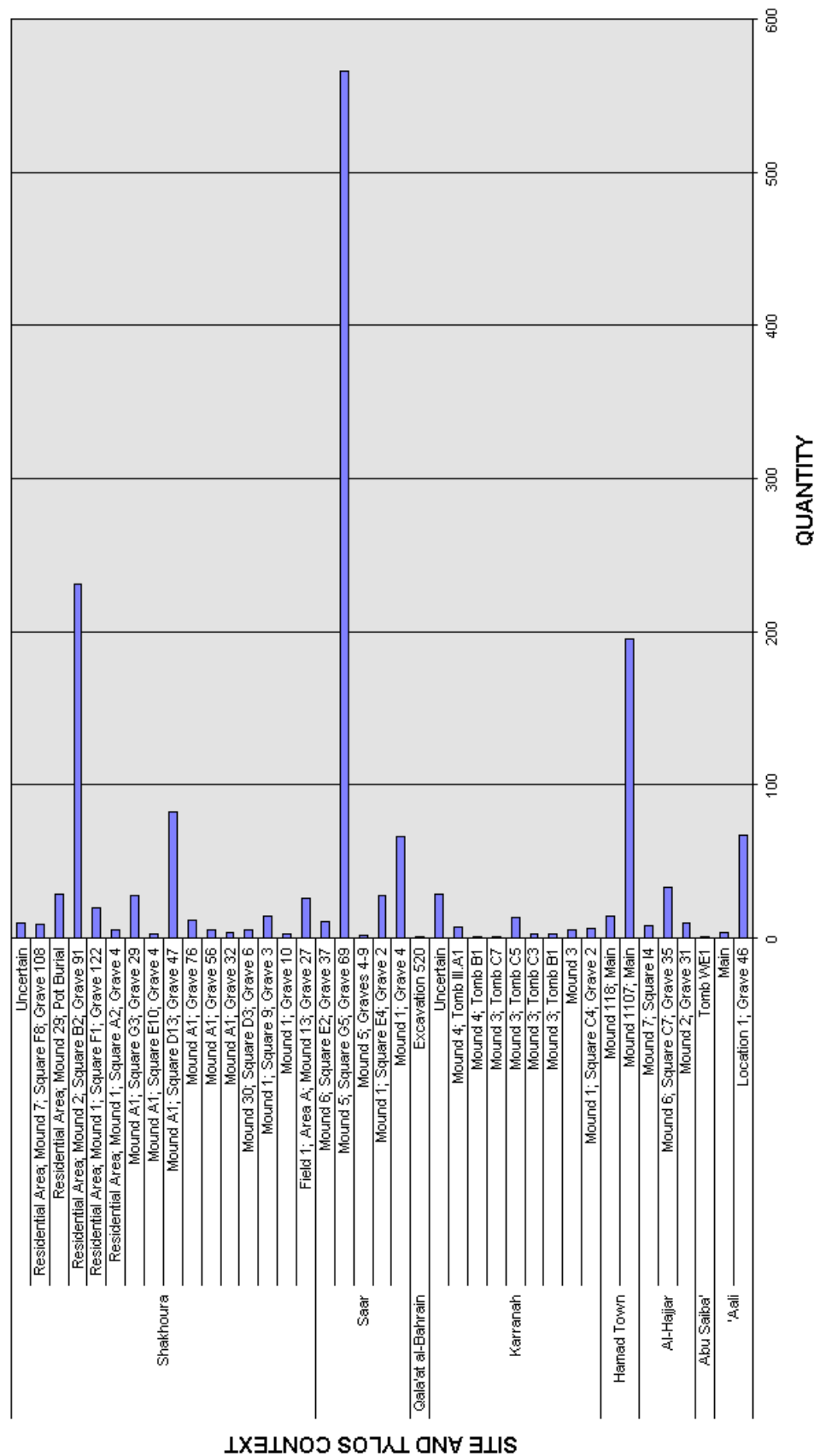
**Fig. 7b.** Continuation of Fig. 7a in which the Dilmun carnelian bead quantities from Karrahanah, Qal'at al-Bahrain, Saar, and Shakhoura are given, organized by site and context. It should be noted that banded carnelian specimens and those cases in which a bead may be of carnelian or else some other material (thus lacking a single and certain material attribution) are excluded from this graphic representation.



**Fig. 7c.** Tylos carnelian bead quantities organized by site and context. It should be noted that banded carnelian specimens and those cases in which a bead may be of carnelian or else some other material (thus lacking a single and certain material attribution) are excluded from this graphic representation. It should also be noted that beads B3744 to B 3752 are not taken into account herein because their attribution to Period V is not definite.



**Fig. 8a.** Dilmun glass bead quantities organized by site and context. It should be noted that specimens in the Bahrain sample which may be of glass or else some other material (thus lacking a single and certain material attribution) are excluded from this graphic representation.



**Fig. 8b.** Tylos glass bead quantities organized by site and context. It should be noted that specimens in the Bahrain sample which may be of glass or else some other material (thus lacking a single and certain material attribution) are excluded from this graphic representation.



MATERIAL	SITE	CONTEXT
Animal Tooth	Qala'at al-Bahrain	Excavation 519; Pot Burial 11
Bitumen	Saar	Saar Temple (Building 201); Area 200
Chalk	Hamad Town	Mound 14; Main
Chloromelanite	Hamad Town	BS2; Mound 51; Square A3/A2; Grave 51D
Clavstone	Dar Kulayb	Mound 24; Main
Coral	'Aali	Mound 31; Main
Garnet	Budaiya'	Location 6; Grave 36
Green Quartz	Qala'at al-Bahrain	Excavation 520
Jade	Hamad Town	BS (Lowzi Area No. 2); Mound 251; Main
Jasper	Saar	Saar Settlement; Building 207; Area 273
Moonstone	Janabiyah	Mound 81A; Grave 6
Mother-of-pearl	Karranah	Mound 2; Tomb E14
Pearl	Qala'at al-Bahrain	Excavation 519; Room A9; Pot Burial 16
Sandstone	Hamad Town	BS (Lowzi Area No. 2); Mound 612; Grave 5
Serpentine	Hamad Town	BS3A; Mound 14; Main
Silver	Qala'at al-Bahrain	Excavation 519
Tin Alloy	Barbar	Barbar Temples; Temple IIb (Eastern Court); Area VI
Turquoise	Barbar	Barbar Temples; Below Temple I; Area IX

**Tab. 1.** One-context bead materials from different Dilmun periods along with the contexts they appeared in. One-context materials that could actually belong to more than single provenience or else be absent on the basis of possible identification (for instance, the possible observation of marble from Mound 162 at al-Hajjar) are excluded.

MATERIAL	SITE	CONTEXT
Bone	Saar	Mound 6; Square E2; Grave 37
Chalcedony	Karranah	Mound 1; Square B5; Grave 2
Clay	Shakhoura	Mound A1; Grave 7
Copper Alloy	Qala'at al-Bahrain	Excavation 520
Frit	'Aali	Main
Ivory	Shakhoura	Mound A1; Grave 76
Limestone	Al-Hajjar	Mound 2; Grave 31

**Tab. 2.** One-context bead materials from the Tylos era along with the contexts they appeared in. The single context that has provided frit beads from 'Aali was excavated during the Bahrain National Museum's 1982 season at the site; this is mentioned so as to precisely identify the context.

<b>Bahrain Sample Materials According to Category</b>	
<b>Mineral</b>	Agate; Alabaster; Amethyst; Banded Agate; Banded Camelian; Banded Chalcedony (general); Banded Quartz; Black Agate; Black Stone (general); Brown Stone (general); Camelian; Chalcedony (general); Chalk; Chloromelanite; Clay; Claystone; Copper; Dark Stone (general); Garnet; Gold; Green Quartz; Hematite; Iron Ore; Jade; Jasper; Lapis Lazuli; Light Brown Stone (general); Limestone; Marble; Metamorphic Rock; Moonstone; Nephrite; Obsidian; Onyx; Opaque Stone (general); Pink Stone (general); Quartzite; Red Jasper; Sandstone; Serpentine; Shale; Silver; Slate; Steatite; Stone (general); Transparent Quartz (Rock Crystal); Turquoise; White Stone (general)
<b>Synthetic</b>	Bronze; Copper Alloy; Faience; Frit; Glass; Lapis Paste; Paste; Tin Alloy
<b>Organic</b>	Animal Tooth; Bitumen; Bone; Fish Otolith; Ivory; Mother-of-Pearl; Pearl; Shell

**Tab. 3.** The division of all bead materials (including suspected ones) in the Bahrain sample by category.

<b>Dilmun (Periods I-IV) Materials According to Category</b>	
<b>Mineral</b>	Agate; Alabaster; Amethyst; Banded Agate; Banded Camelian; Banded Chalcedony (general); Banded Quartz; Black Agate; Black Stone (general); Brown Stone (general); Camelian; Chalk; Chloromelanite; Clay; Claystone; Copper; Garnet; Gold; Green Quartz; Hematite; Jade; Jasper; Lapis Lazuli; Light Brown Stone (general); Limestone; Marble; Moonstone; Obsidian; Onyx; Opaque Stone (general); Quartzite; Red Jasper; Sandstone; Serpentine; Shale; Silver; Slate; Steatite; Stone (general); Transparent Quartz (Rock Crystal); Turquoise; White Stone (general)
<b>Synthetic</b>	Bronze; Faience; Frit; Glass; Lapis Paste; Paste; Tin Alloy
<b>Organic</b>	Animal Tooth; Bitumen; Bone; Mother-of-Pearl; Pearl; Shell

**Tab. 4.** The division of all Dilmun (Periods I-IV) bead materials in the Bahrain sample by category.

<b>Tylos (Period V) Materials According to Category</b>	
<b>Mineral</b>	Agate; Alabaster; Amethyst; Banded Agate; Banded Camelian; Camelian; Chalcedony (general); Clay; Dark Stone (general); Gold; Green Quartz; Lapis Lazuli; Limestone; Onyx; Pink Stone (general); Quartzite; Steatite; Stone (general); Transparent Quartz (Rock Crystal)
<b>Synthetic</b>	Copper Alloy; Faience; Frit; Glass; Lapis Paste
<b>Organic</b>	Bone; Ivory; Mother-of-Pearl; Pearl; Shell

**Tab. 5.** The division of all Tylos (Period V) bead materials in the Bahrain sample by category.

## 8.3 – Bead Colours

### Some General Observations

160 different colours or colour combinations have been noted in the Bahrain sample (see Figs. 9a-9c). These colours are naturally bound to the materials of which the beads involved are made. In many cases, the natural hue of the material features. In others, it has been modified. The cream or white of etched carnelian and even the redness so characteristic of carnelian itself are but examples of man-induced modifications (Francis, 2002: 13; Jyotsna, 2000: 87). Other examples include soaking banded agate in a sulphuric solution to produce black-and-white onyx or adding colouring agents to give glass its manifold colours (Francis, 2002: 10-13). Despite differences in natural and artificially induced (or added, at times) hues, the colours noted in the Bahrain sample are those that graced the final versions of the beads; hence copper beads, for instance, are assigned the hue of their metal rather than the green they possess after the passage of millennia. The same may be said of the hues of other beads and materials.

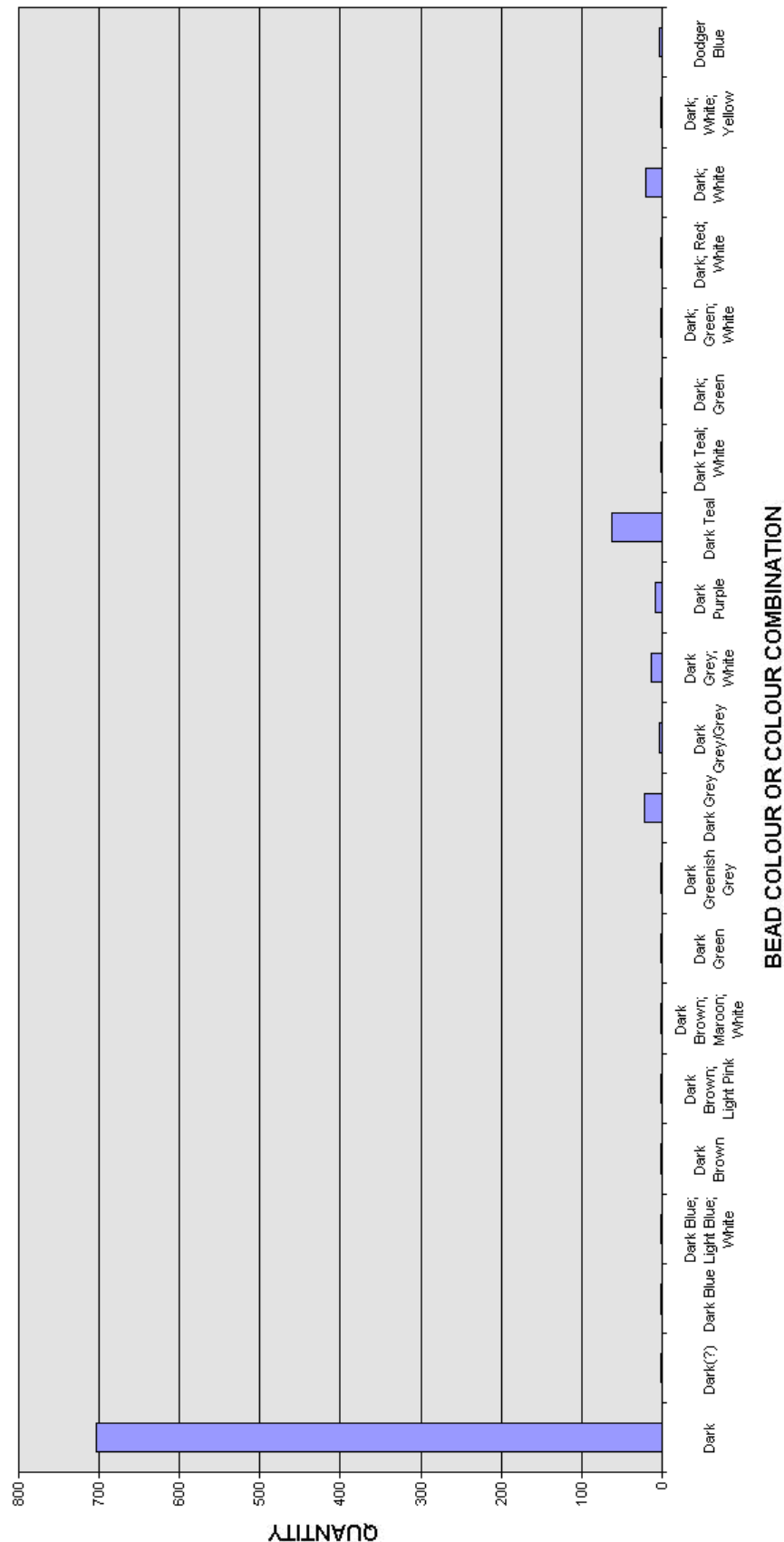
Though carnelian is the most widely encountered material in the sample, red does not similarly come first amongst the colours. Rather, a dark shade due primarily to glass (though occasionally other materials as well) figures the most widely with 704 cases in which it has appeared by itself. Second comes green at 572 cases, again mainly due to glass though it is also represented by faience, frit, and various minerals. And the red so closely associated with carnelian comes third, at 512 cases. The prominence of glass in Period V and the significant numbers of faience and frit beads in both the Dilmun and Tylos eras seems to have outweighed the influence of carnelian in the sample. Other colours that feature significantly include aquamarine (418 cases, due mainly to faience and frit); a combination of cream and red (329 cases, due to etched carnelian); brown (312 cases, due mainly to faience); and just cream (252 cases, due mainly to etched carnelian and shell, but also exhibited by a few additional materials). There are some cases of a hue appearing only once in the Bahrain sample, and these all qualify equally for the least featured ones.

## Colours in Periods II, IV, and V

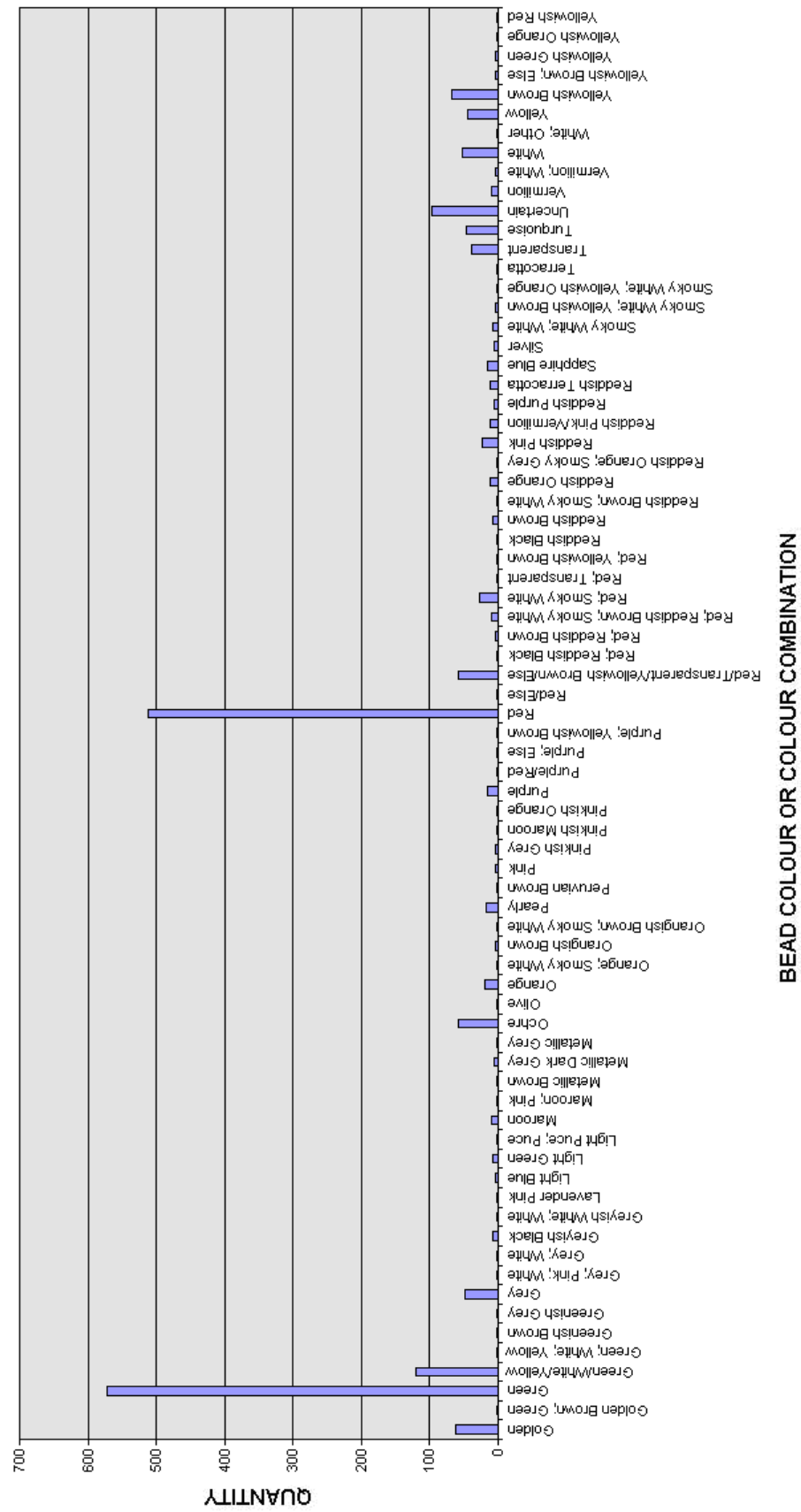
As with the different bead materials, the best epochs represented colour-wise are those of Periods II, IV, and V. Period II is represented by 123 distinct colours or colour combinations in the Bahrain sample (see Figs. 10a-10b). In Period IV, there is a drop to only 33 (not counting the hue of B374, which may be a Tylos rather than Late Dilmun specimen) before a rise is again experienced in Period V to 72 different colours or colour combinations (Figs. 11-12). Whilst certainly the number of beads from each period in the sample has an influence over how many hues are attributed to each, this does not explain why Period V (the beads of which form the majority in the sample) provided fewer colours or colour combinations than Period II; 51 less, in fact. There is a relationship between materials and preferences that is visible in this regard.

As with the materials used, selection seems to have been less varied in the Tylos era; this is a natural result of the colour-material dependency. For this reason we find that some of the less significant hues of Period II that were still present in Period V exhibited in the latter an increase in numbers. Amongst such increases were those displayed by the colours black, yellow, blue, and white (considered alone and not as part of colour combinations), which occur in 74, 41, 32, and 29 cases respectively amongst Period V specimens in the Bahrain sample (that is, almost 2.9%, almost 1.6%, almost 1.25%, and over 1.13% of the total number of Tylos beads that can be securely dated to that era) (see Fig. 13). These, except for the colour blue, had produced smaller percentages in Period II (based on the securely dated bead total for that epoch) and had not even been present amidst the Period IV colours.



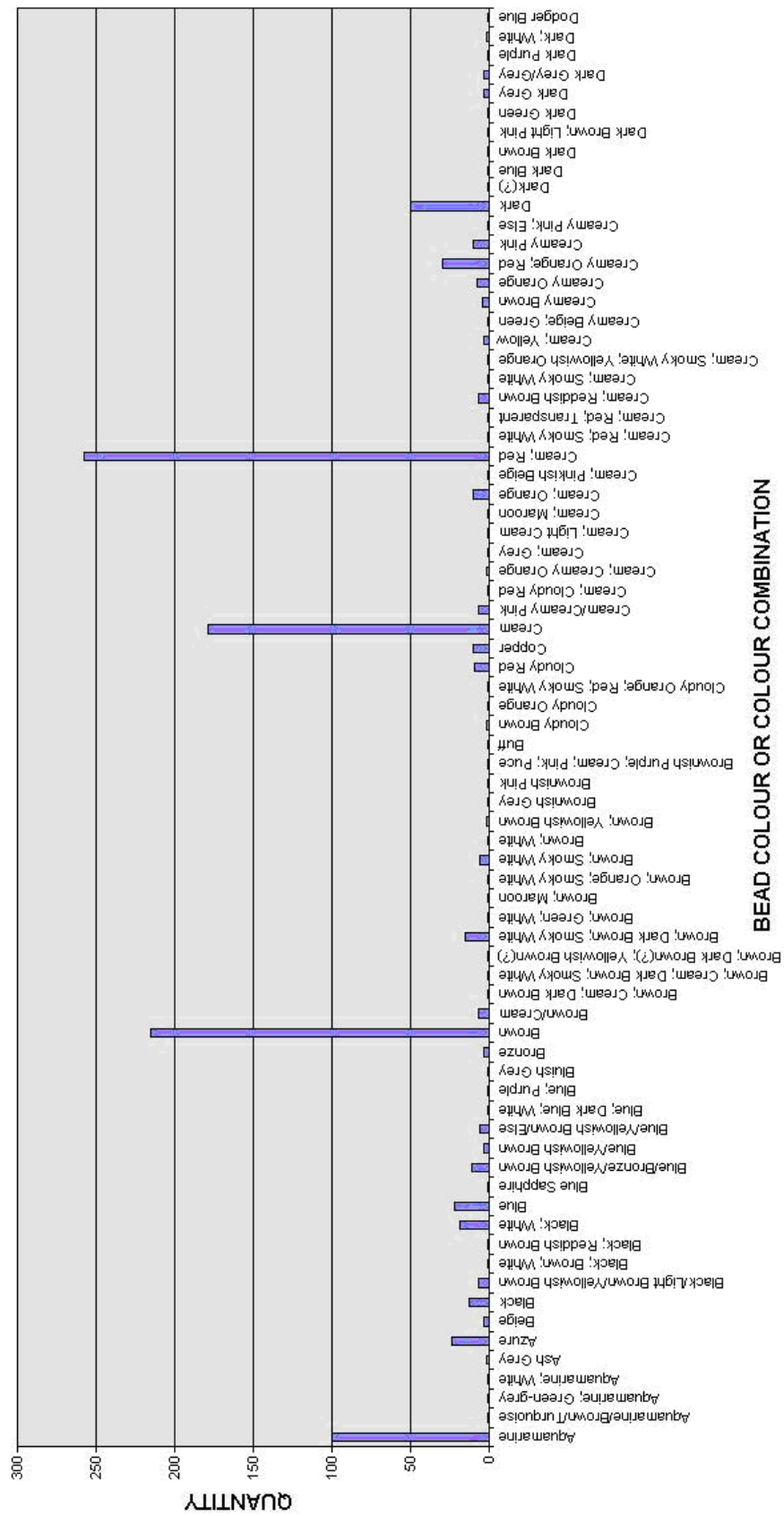


**Fig. 9b.** Second part of a breakdown of the Bahrain sample by bead colour or colour combination. Questionable attributions are treated as distinct from their confirmed counterparts.

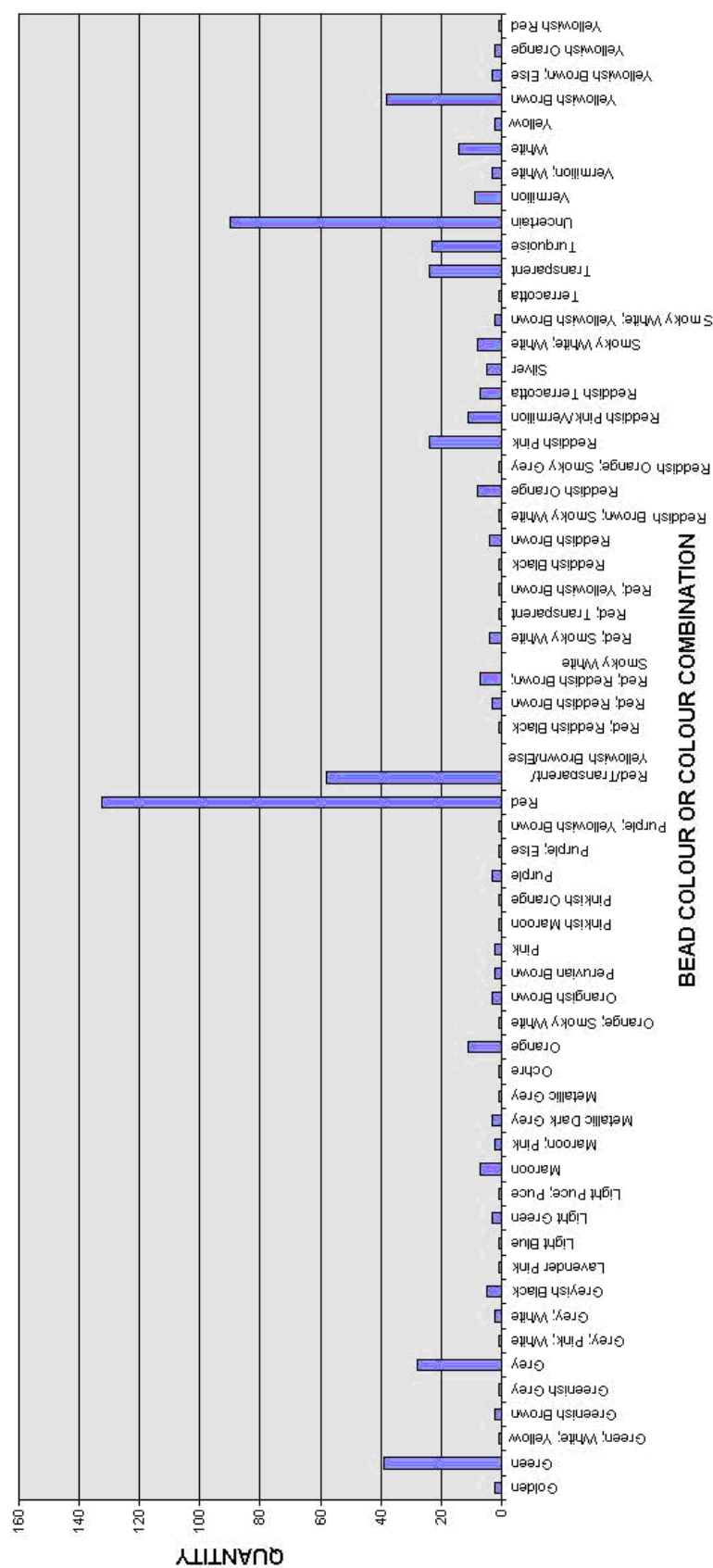


**Fig. 9c.** Third part of a breakdown of the Bahrain sample by bead colour or colour combination. Questionable attributions are treated as distinct from their confirmed counterparts.

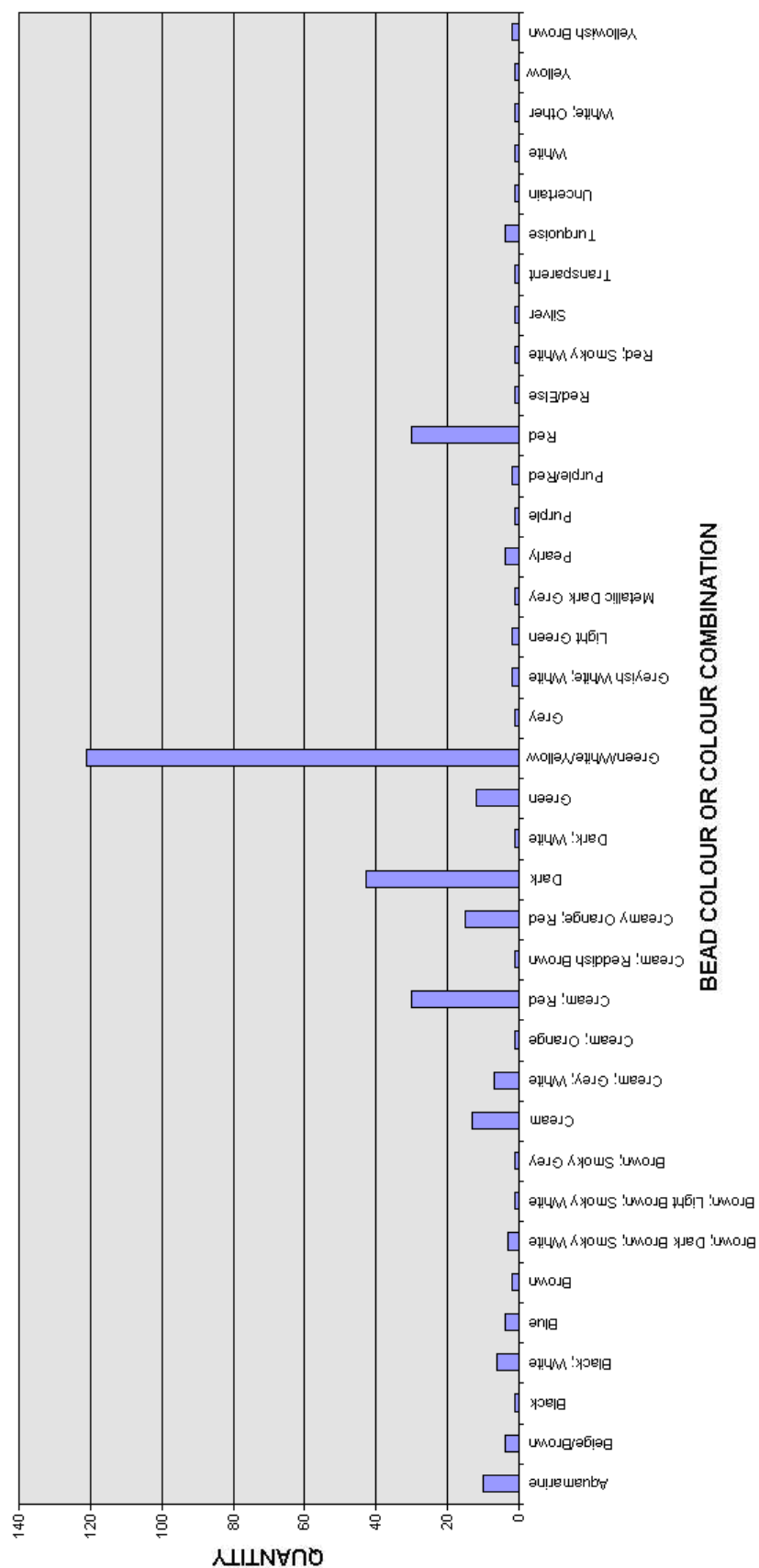




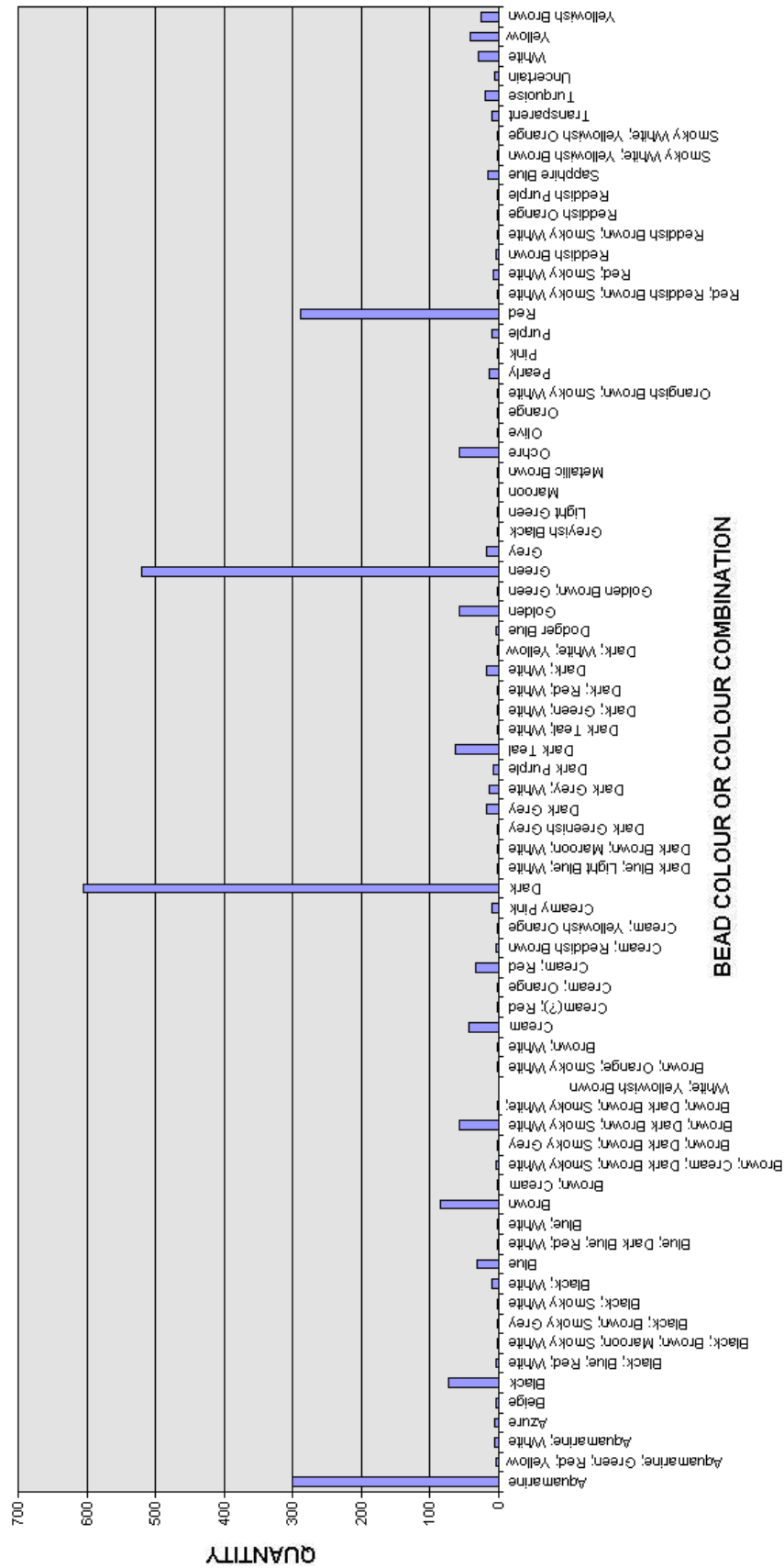
**Fig. 10a.** First part of a breakdown of the Period II beads in the Bahrain sample by colour or colour combination. Questionable attributions are treated as distinct from their confirmed counterparts. Beads B1251, B1572, B1578 to B1585, and B1589 to B1593 are not taken into account in this graph, since they could belong to a chronological era other than Period II.



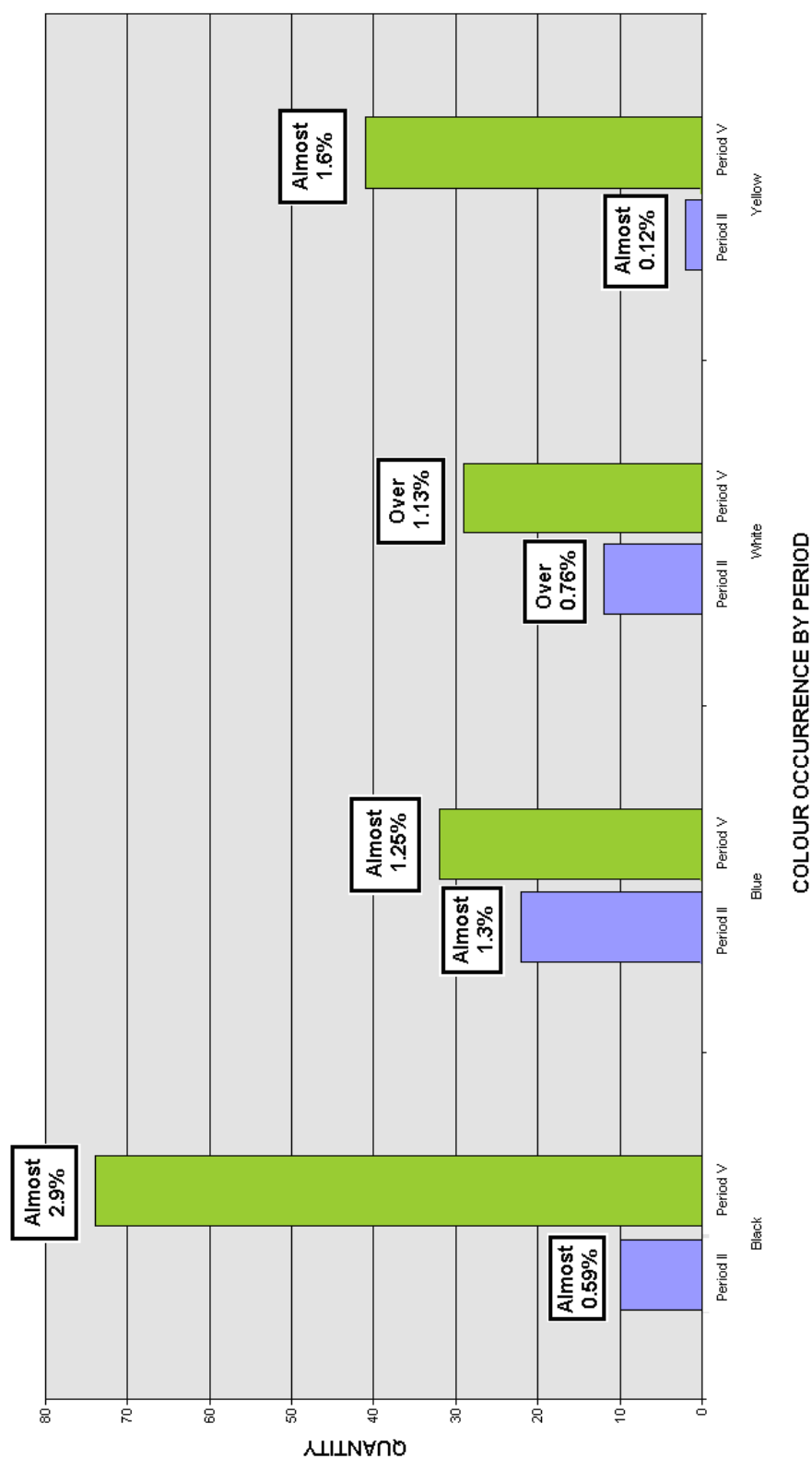
**Fig. 10b.** Second part of a breakdown of the Period II beads in the Bahrain sample by colour or colour combination. Questionable attributions are treated as distinct from their confirmed counterparts. Beads B366, B1206, B1207, B1567 to B1571, B1573 to B1577, and B1586 to B1588 as well as beads B4115, B4116, and B4117 are not taken into account in this graph, since they could belong to a chronological era other than Period II.



**Fig. 11.** Breakdown of the Period IV beads in the Bahrain sample by colour or colour combination. Questionable attributions are treated as distinct from their confirmed counterparts. This graph does not take into account beads B367, B368, B374, B4115, B4116, and B4117, since these could belong to another era rather than Period IV.



**Fig. 12.** Breakdown of the Period V beads in the Bahrain sample by colour or colour combination. Specimens B3744 to B3752 are not taken into account by this graph since their attribution to Period V is uncertain. Moreover, beads B367, B368, and B374 are also excluded from consideration because they could belong to Period IV rather than the Tylos era.



**Fig. 13.** A comparison between the number of occurrences of black, blue, white, and yellow (that is, by themselves and not as part of colour combinations) in Period II and Period V. The percentages indicated for each were obtained against the backdrop of the total number of beads that can securely be dated to the period concerned, thus avoiding cases of questionable attribution to a period or those belonging to chronological ranges that span more than one epoch. Beads B617, B1567, B1568, B1576, and B1577 are not taken into account in this graph, since they could belong to a chronological era other than the two with which it is concerned.

## **The Most Visible Hues in Periods II, IV, and V: A Look at Percentages**

The colours best represented across Periods II, IV, and V are aquamarine, brown, cream, a cream-red combination, a dark hue, green, and red. Cream and cream-red represent, for the most part, the prevalence of etched carnelian (though shell can also to some extent be associated with the former) (see Tab. 6). Comparably with etched carnelian, these hues show a decrease in percentage from period to period; a more extreme drop in percentage between Periods II and IV for the former, and between IV and V for the latter (see Fig. 14). This indicates a huge decrease in the numbers of completely etched carnelian beads and a gentler further drop to very low numbers in the Tylos era. Partially etched carnelian specimens, however, endured a small reduction in numbers between Periods II and IV, probably owing to fewer etched specimens in the latter, but no severe drop till Period V was reached. Thus whilst skill (or rather, thoroughness) in etching suffered between Early Dilmun and Late Dilmun, it was not till the Tylos era that etching fell out of favour or became less available even though it was still present.

Conversely, the dark hue identified as a distinct colour experienced an increase in percentage across chronological periods (see Tab. 6). In all three periods, this hue was primarily represented by glass, though some other materials, such as faience and stones, did occasionally contribute to it (see Fig. 15). Unlike etching-linked cream, this dark colour increased exponentially in percentage when compared across the three periods, thus allowing us to trace a conspicuous degree of glass beadmaking in Period IV, which coincides with a renewed interest in the material and its production in Mesopotamia at this time as part of an attempt to revive luxury good industries (see Lankton, 2003: 47). It should be pointed out that magnesium was the primary colouring agent which produced black glass (McCarthy, 2008: 916).

Green is another colour which shows an increase in percentage across Periods II, IV, and V (see Tab. 6). In the first of these, it was associated with faience, frit, glass, serpentine, and jasper (see Fig. 16). In Period IV, it was associated primarily with faience, though two examples of jade and a glass case have also been noted. In Period V, however, despite being due to green quartz in one case and faience and frit in seven others, the main source for the hue was glass beads. Thus we perceive that, for the most part, synthetic materials formed the basis of the colour in the three periods under question. Mineral examples were few across the chronological spectrum, with two cases from Period II and one from each of the later periods.

Green was represented by faience and frit (despite occasional glass specimens) during the Dilmun era. In the Bahrain sample, it also indicates a growth in these technologies in passing from Period II to Period IV. Amongst the Period V beads, faience and frit still provide occasional examples though green becomes far more indicative of glass. The total number of Tylos green beads is 520. 363 green beads of glass from this period were recovered from Saar, being the largest amount of beads of this hue from a single site. The sudden increase of green to representing 20.28% of Tylos bead colours must therefore be attributed to the heyday of glass beadmaking in Period V (see the appropriate section in Chapter 8.5) and represents this heyday in the Bahrain sample.

There may also be a significant ideological basis, not just a material one, for the prevalence of green in Periods II, IV, and V as well as in the Bahrain sample as a whole (since it is the second most common hue). The colour may have had a religious connotation associated with certain gods such as Ningishzida and Inzak. Such a consideration will be returned to in Chapter 8.5, in the section of our archaeological narrative dealing specifically with Late Dilmun (i.e., Period IV and its subdivisions).

Aquamarine and red are two colours that suffered in percentage in Period IV (compared to Period II), but then recovered some prominence in Period V. In the case of the former, whilst Period IV aquamarine beads in the Bahrain sample show slightly over half the percentage held by their Period II counterparts, in the Tylos era the percentage of beads of this hue rose to over double (11.74%) that of Early Dilmun (see Tab. 6). Aquamarine generally indicates faience and frit (and, to a lesser extent, glass) in relation to all three periods as represented in the Bahrain sample (see Fig. 14). Some of the more significant figures are the 84 IIa aquamarine faience beads from Hamad Town and, in Period V, 221 aquamarine faience beads from Shakhoura. Period IV's 10 aquamarine beads, whether of faience or glass, belong to the chronological subdivisions covered by IVc-e.

Whilst it may seem that a smaller percentage of aquamarine beads in Period IV compared to Period II conflicts with the information provided by similar green hues about technological growth related to synthetic materials, we know from elsewhere (see Chapter 8.2) that this is not the case. Rather, what is being observed is a discrepancy based on hue (aquamarine as opposed to green), which is more telling of the components used in the glazing amalgam to create the faience and frit beads involved. Copper is typically the cause of the blue-green colour of faience and frit, and the ratio between copper and calcium tends to determine whether an item is more blue or green (Lankton, 2003: 45; Noble, 1969: 436). The

greater percentage of green beads as opposed to aquamarine ones in Period IV indicates a comparative proportional increase in the presence of specimens containing higher copper levels, especially when set against the percentages of these hues in Period II, and may even indicate a difference in source or reliance upon a source (both for the copper-based raw material and, if the beads arrived ready-made in Bahrain, for the finished products themselves).

With red, though a similar pattern to that of aquamarine exists, it is less marked, with fluctuations going from 9.65% down a notch to 9% before rising to 11.62% (see Tab. 6). Red is mainly associated (despite exceptions) with carnelian; specifically carnelian that is not etched (see Fig. 17). We therefore see that it peaked somewhat in the Tylos era. This does not mean carnelian was more present amongst the Tylos beads (especially since it has been shown above that the largest carnelian amount in the Bahrain sample derives from Early Dilmun), but rather that carnelian without etching was compared to the bead totals of the earlier epochs.

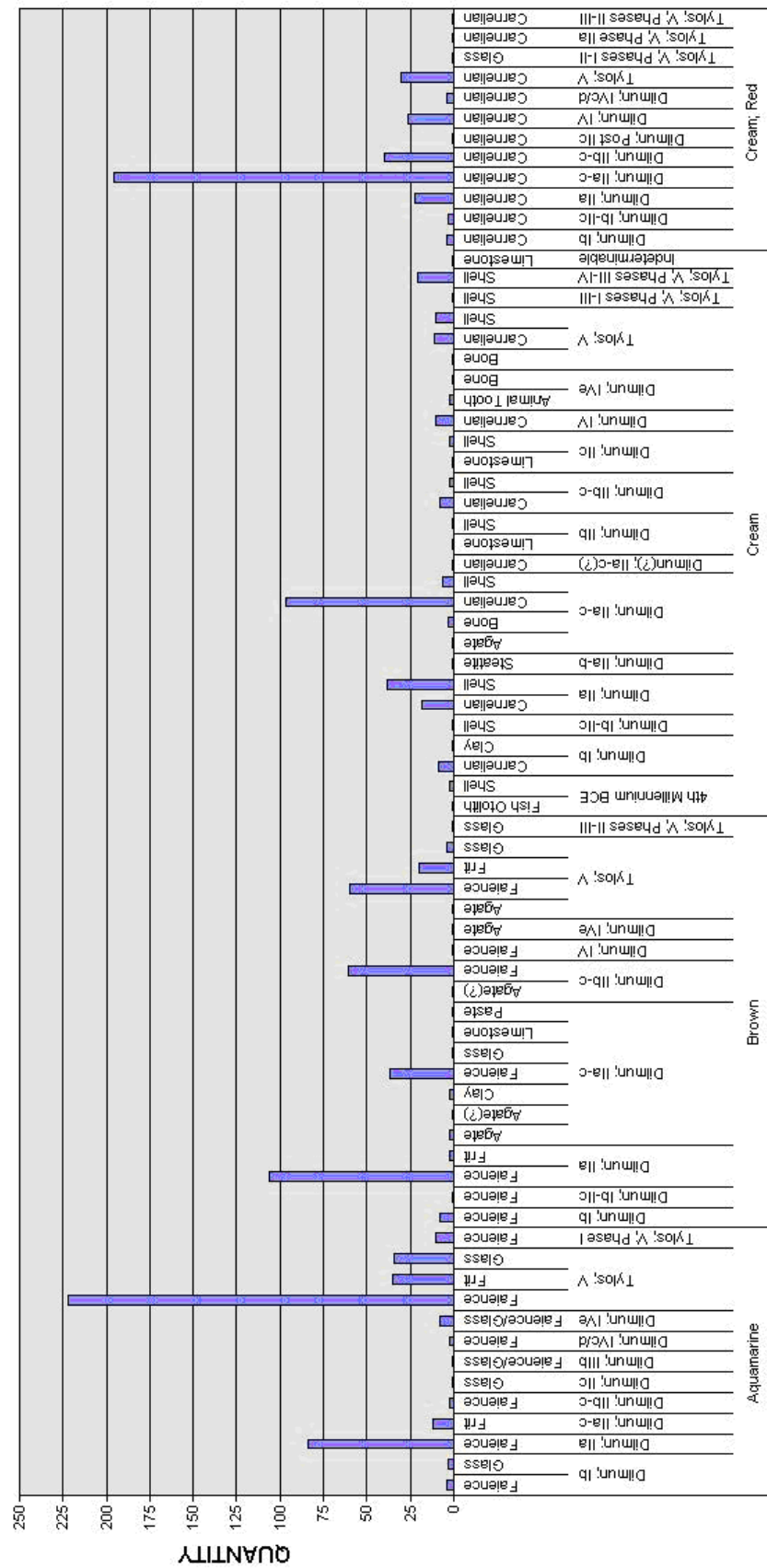
Brown displays a peculiar pattern: it was quite prevalent in Period II (12%), but then dropped considerably in percentage in Period IV (0.6%) before experiencing a slight rise thereafter (see Tab. 6). The two brown beads of Period IV, however, are not enough to give us much information beyond the obvious one of a severe drop. However, they represent faience and agate respectively, and these same two materials (alongside frit) represent it in relation to other epochs as well (see Fig. 14). Amongst the Period II beads, for instance, whilst we have two definite specimens and two possible ones of brown agate, two examples of brown clay, and two examples of brown frit as well as single cases of brown limestone and paste beads, most of the ornaments of this colour are of faience. Hamad Town alone has produced 106 brown IIa faience beads as well as 30 IIa-c and 61 IIb-c examples. The 86 Period V brown beads in the Bahrain sample are mostly faience and frit specimens, with only five of them glass beads and a single example of agate.

Brown faience contains a high amount of iron, which is what gives it its colour (McCarthy, 2008: 916). In light of this, it is interesting to observe that, in a sense, brown followed the basic pattern of aquamarine across the three epochs of Periods II, IV, and V (that of a dip and then rise), but recovered itself only slightly in the Tylos era and did not supersede its Early Dilmun counterpart (as with aquamarine). Period IV therefore seems to have represented a slight turning away from iron- and more calcium-based faience pigments towards more copper-based ones. In Period V, there was a recovery, but more in terms of calcium content than iron used for faience and frit production.

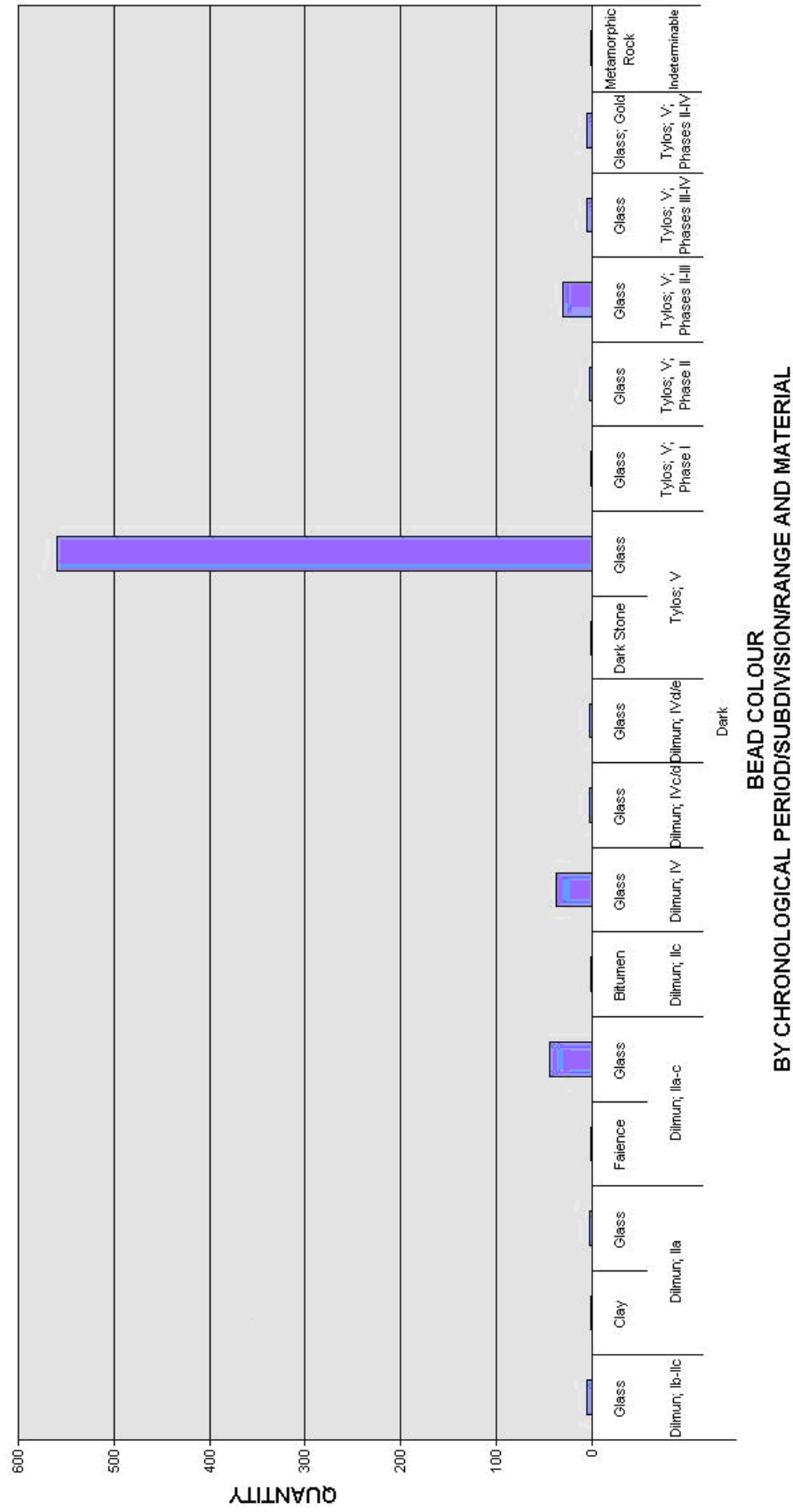


PERIOD II		PERIOD IV		PERIOD V	
Colour	Quantity (Percentage)	Colour	Quantity (Percentage)	Colour	Quantity (Percentage)
Aquamarine	99 (5.52%)	Aquamarine	10 (3%)	Aquamarine	301 (11.74%)
Brown	215 (12%)	Brown	2 (0.6%)	Brown	86 (3.35%)
Cream	179 (9.99%)	Cream	13 (3.9%)	Cream	44 (1.72%)
Cream; Red	259 (14.45%)	Cream; Red	30 (9%)	Cream; Red	33 (1.29%)
Dark	50 (2.79%)	Dark	43 (12.91%)	Dark	605 (23.6%)
Green	39 (2.18%)	Green	12 (3.6%)	Green	520 (20.28%)
Red	173 (9.65%)	Red	30 (9%)	Red	298 (11.62%)

**Tab. 6.** The quantities and percentages associated with the most prominent hues existent across Periods II, IV, and V. Beads B366, B367, B368, B374, B4115, B4116, and B4117 as well as specimens B3744 to B3752 are all not amongst the numbers in the table, since more than a single period has been suggested for their dating. The percentages given are those produced against the bead total of the period in question; such totals naturally do not take into account the excluded beads mentioned above. All percentages are rounded up to a maximum of two decimal places.

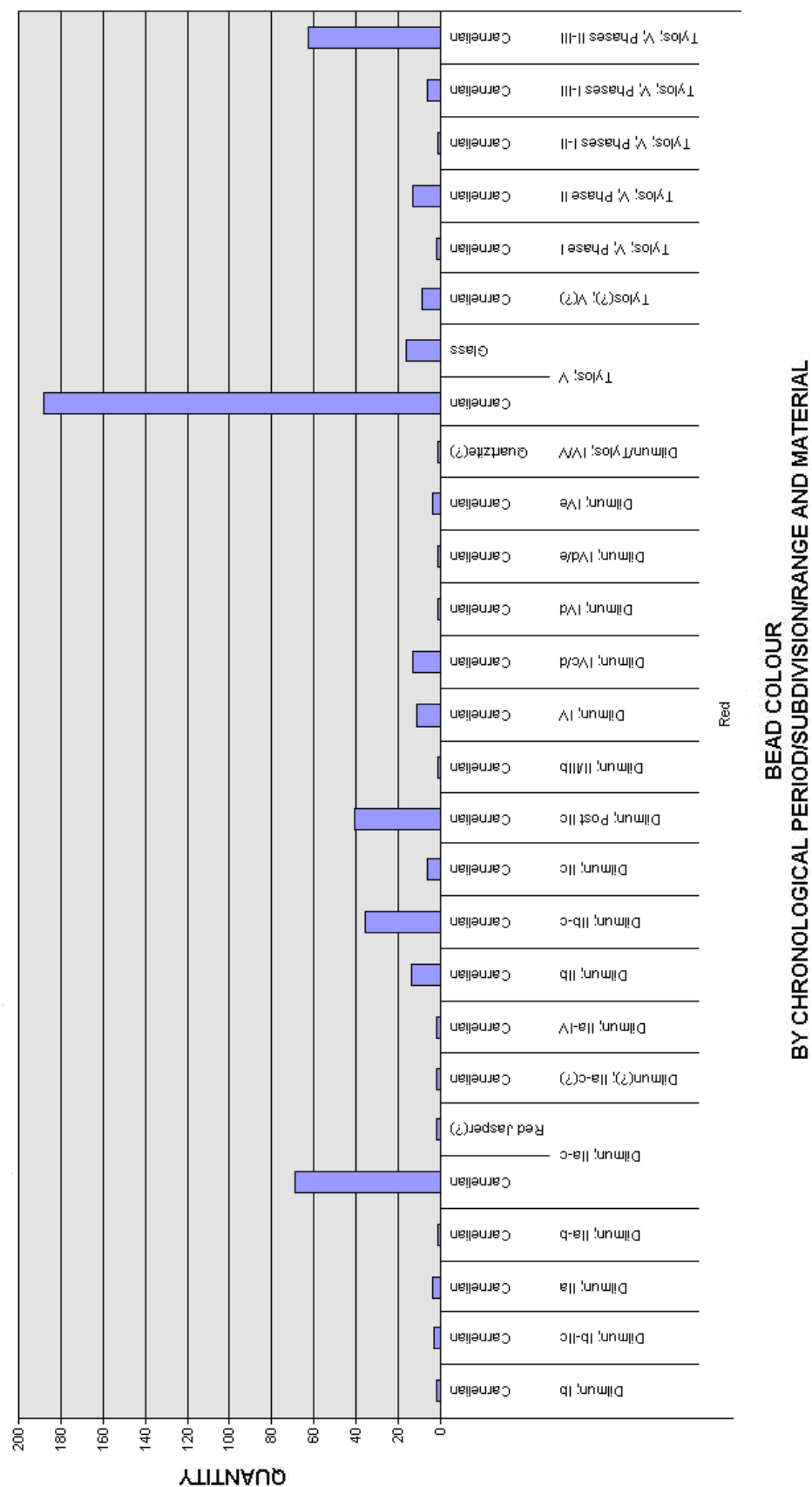


**Fig. 14.** Bead quantities displaying the colours aquamarine, brown, and cream as well as a cream-red combination, organized by chronological period/subdivision/range and material.



**Fig. 15.** Bead quantities displaying a dark hue, organized by chronological period/subdivision/range and material.





**Fig. 17.** Bead quantities displaying the colour red, organized by chronological period/subdivision/range and material.

## 8.4 – Bead Diaphaneity

The degree of diaphaneity possessed by a bead is directly related, in most cases, to the material of which it is made (see Figs. 18a-18b). Mineral beads tend to opacity or translucency, depending on the material in question, and at least in the case of transparent quartz (rock crystal) achieve transparency. Metals are always opaque. Ancient glass can be opaque, translucent, or transparent, depending on its degree of clarity or the inclusion of a colouring agent.

There are several different degrees of diaphaneity in the Bahrain sample, represented by opacity, translucency, and transparency as well as combinations of these (see Tab. 7). In terms of the three basic categories of diaphaneity, however, and ignoring less definite cases, opaque beads form the predominant group in the sample, there being 3,543 individual specimens. Translucency is exhibited by 1,121 beads. And finally, we find transparency in only 38 beads.

Although it may not be possible to compare fluctuations in diaphaneity across all the chronological periods of ancient Bahrain, simply because not all periods are represented to the same extent in the Bahrain sample (there being more beads from some and less from others), it is possible, however, to examine the better represented epochs such as Periods II, IV, and V and so see how opacity, translucency, and (at times) transparency compare within these (see Figs. 19a-21b). It then also becomes possible to make broad comparisons between Periods II, IV, and V. Though it may be admitted that Period V beads form the majority of the Bahrain sample and Period II contexts suffered more robbing (see Chapter 7.6), these factors bear more on quantity than diaphaneity; so, whilst the diaphaneity of Period II cases may be affected somewhat, a study and comparison is still possible.

Examining the percentages of each degree of diaphaneity in the above epochs, we find that though opacity represents the majority in each, a greater amount of translucent examples derives from Period II (see Fig. 22). By Period IV, the difference in percentage between opaque and translucent cases becomes even more striking, with almost 88.59% being of the former and only 10.81% of the latter (see Fig. 23). Period V, however, witnesses a recovery in the percentage of translucent cases so that whilst it does not approach the almost 34.12% of Period II, it does nonetheless rise to almost 18.1% (see Fig. 24). It is also significant that only in Period II do we find transparency forming almost 1.65% of the cases (see Fig. 22). With regard to later periods, it forms less than 1%.

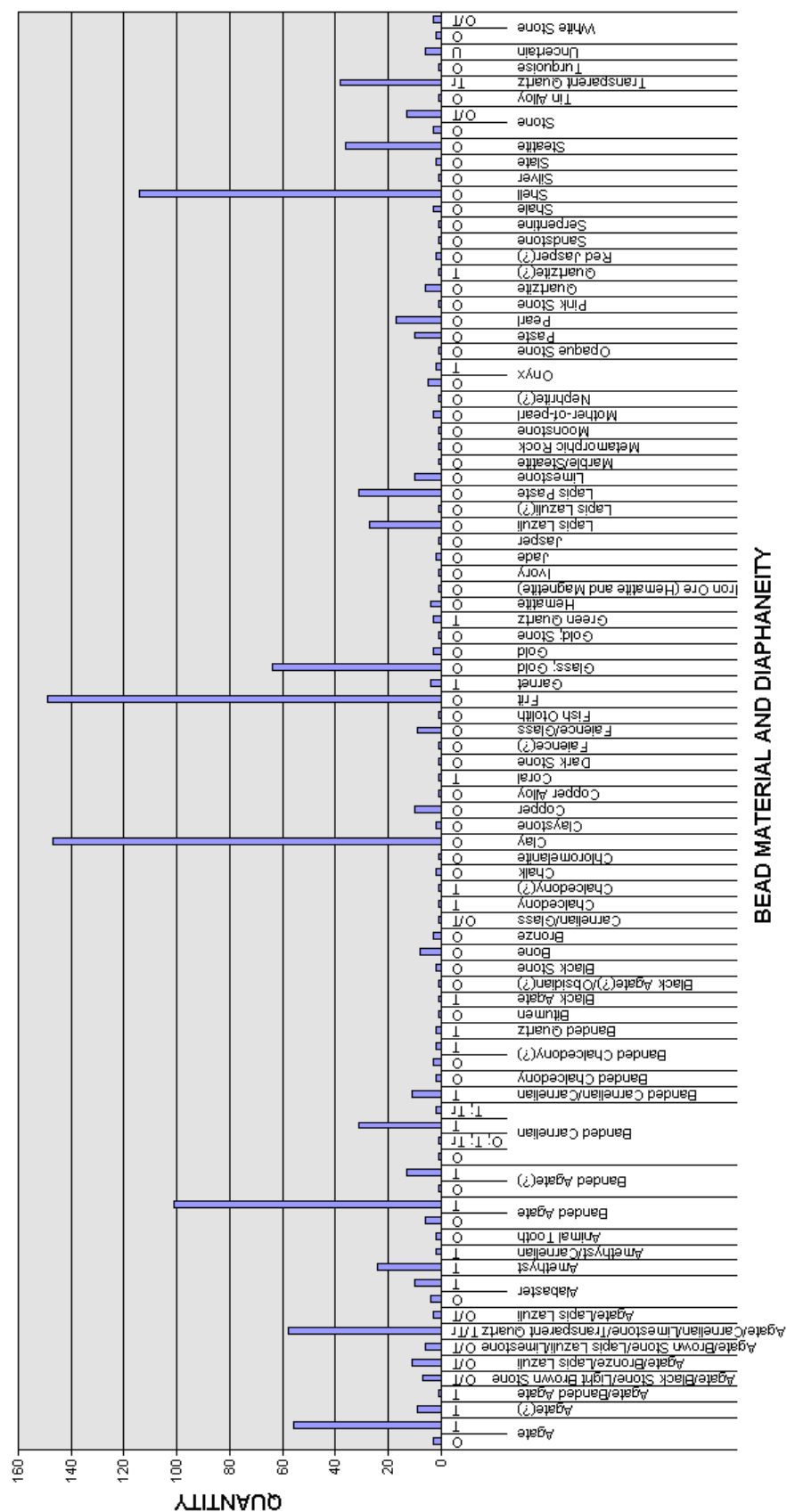
Since (as explained above) diaphaneity is closely related to material, except in certain modified examples, it often illustrates particular tendencies. The more visible presence of transparency in Period II shows a greater inclination towards mineral beads in that epoch (though other material categories are present as well) due to transparency and rock crystal going hand-in-hand in the Bahrain sample (see Figs. 19a-19b). For the same reason, we find lower transparent quartz (i.e., rock crystal) numbers producing lower transparency percentages in Periods IV and V (see Figs. 20-21a). Period IV seems to indicate preferences moving away from translucency, though this is more likely due to a decrease in the materials associated with it, which is quite telling in terms of Bahrain's economic ties at that time. This, however, seems to be made up for in part by a greater reliance on other, more opaque, substances.

In the Tylos era, because Bahrain has somewhat recovered its former position as a player in the international commercial networks of the time, there is a comparable recovery of translucency. This must surely owe a great deal to the prominence of glass in this period, though a still relatively high percentage of opacity in spite of this seems to indicate that even so, there was a preference for opaque beads (see Fig. 21b and Fig. 24). Thus in the colouring and appearance of glass beads, whilst there was a tendency towards and appreciation of translucency, opacity was often favoured by darker colours (even black in certain glass cases). This is representative of the desire for glass substitutes for those colours to which people were accustomed due to the former preponderance of mineral beads, and so similar hues affording similar opacity is exhibited in the Tylos era. This makes sense, given that glass was more widely available in Period V than a great many of the mineral substances used to produce beads. In some cases, we even find clear examples of mineral bead imitation; there are several black-and-white glass beads in the Bahrain sample, for instance, that are plainly onyx imitations both in hue and appearance.

It is also important to consider the percentages attributed to degrees of diaphaneity across different archaeological sites (see Fig. 25), particularly when these are viewed chronologically (see Figs. 26a-26d). If we attempt this with a focus on mortuary sites, we observe a curious phenomenon: the prevalence of translucency in two particular cemeteries when all their contemporaries produced more opaque beads. Period II burials from both Saar and Karranah indicate a preference for translucent beads, with greater numbers of these (see Figs. 27-28). Since the Saar burials, due to proximity, must have served the Settlement at that site, the detection of a similar phenomenon at Karranah suggests that tombs at the latter may

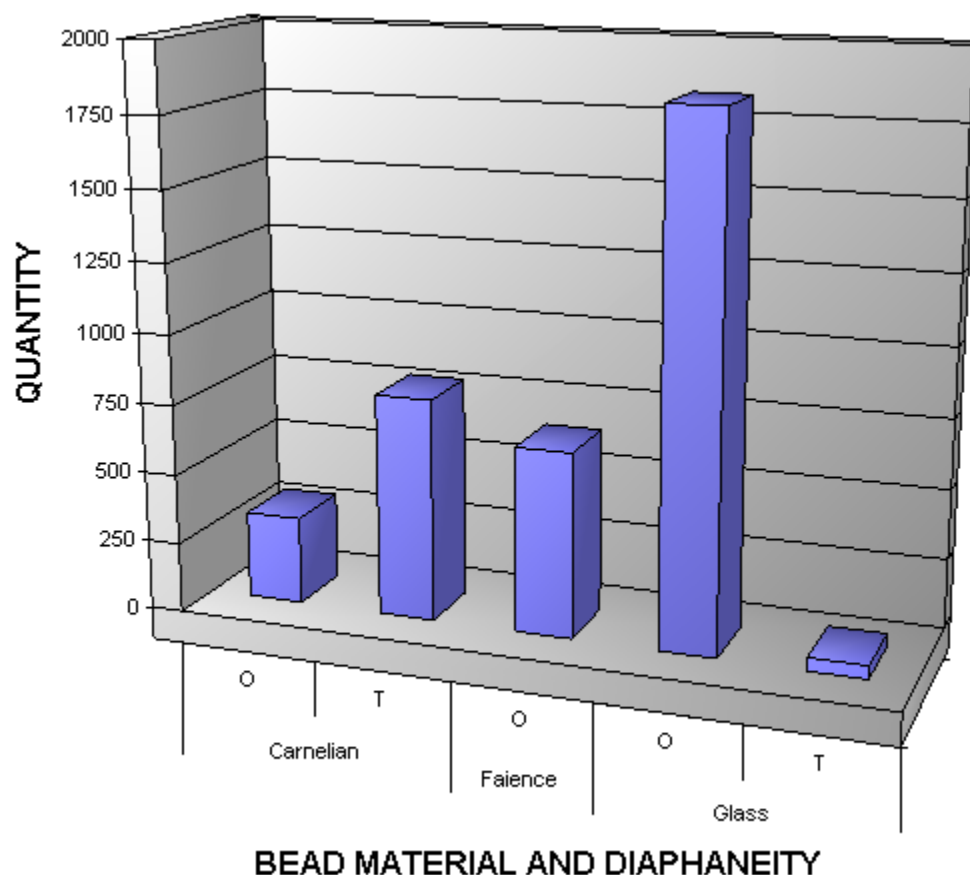
have also served for the burial of the populace at Saar. Another possibility is that one or more of the nearby villages, affected by tendencies and conditions at the Saar Settlement, may have furnished the dead for the graves at Karranah. Or perhaps even an independent settlement with the same tendencies as the one at Saar was responsible. Whatever the relationship, a similar phenomenon has not been observed with regard to any of other major Period II mortuary sites and so seems exclusive to a particular population or group of people acting as a link between the Saar Settlement (or a similar one) and Karranah.





# BEAD MATERIAL AND DIAPHANEITY

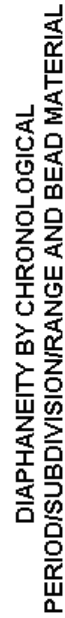
**Fig. 18a.** Bead quantities illustrating the relationship between different materials and diaphaneities in the Bahrain sample. Though cases involving possible carnelian, glass, and faience attributions have been included, confirmed examples of these materials are given in Fig. 18b. It should be pointed out that "O", "T", "Tr", and "U" respectively stand for "opaque", "translucent", "transparent", and "uncertain".



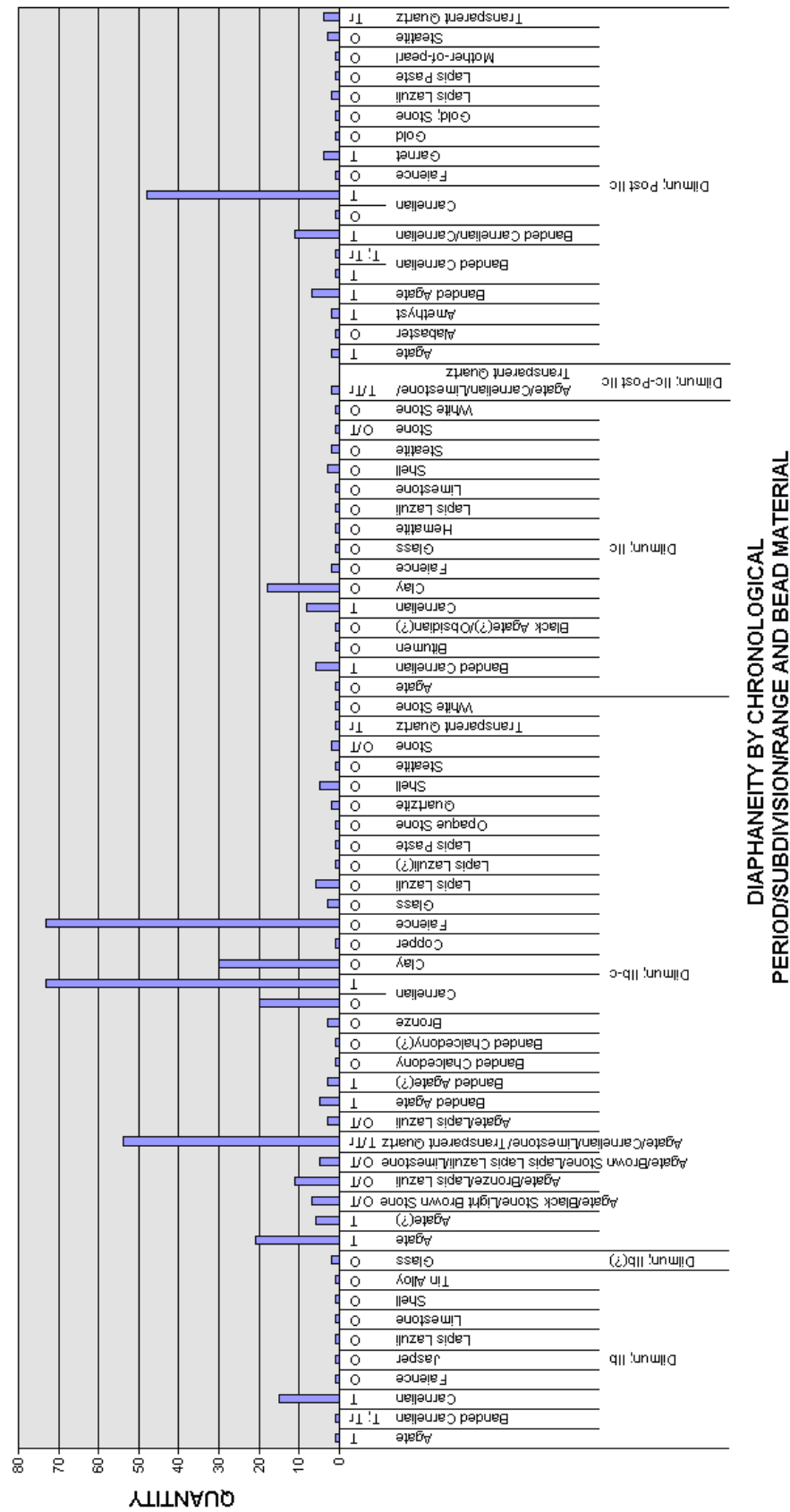
**Fig. 18b.** Bead quantities illustrating the relationship between confirmed cases of carnelian, glass, and faience beads and different diaphaneities. "O" and "T" respectively stand for "opaque" and "translucent".

DIAPHANEITY	NO. OF BEADS (% OF SAMPLE TOTAL)
Opaque	3,543 (over 73.61%)
Opaque or translucent	44 (over 0.9%)
Opaque, translucent, and transparent	1 (0.02%)
Translucent	1,121 (over 23.29%)
Translucent or transparent	58 (over 1.2%)
Translucent and transparent	2 (over 0.04%)
Transparent	38 (almost 0.79%)
Uncertain	6 (over 0.12%)

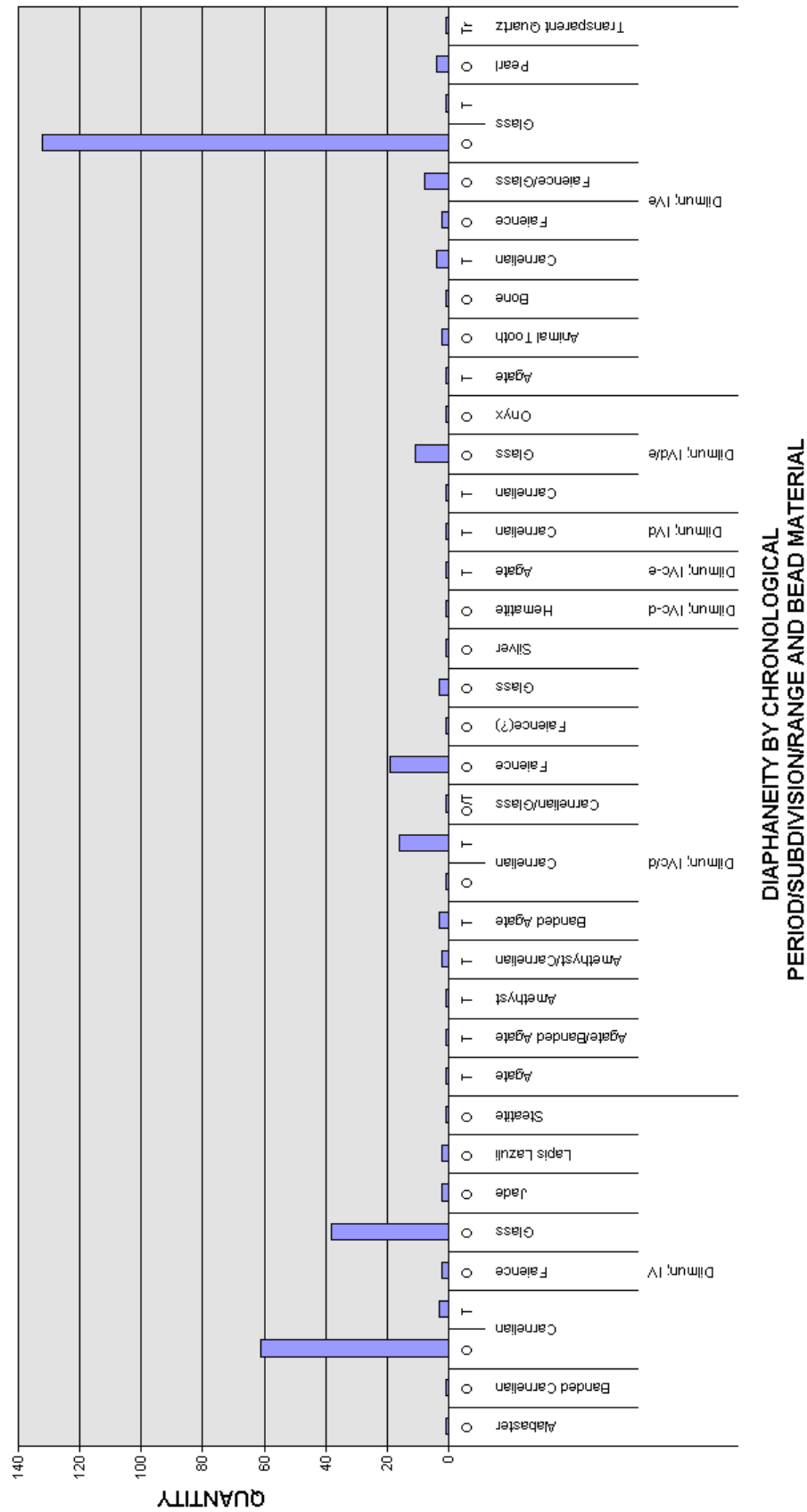
**Tab. 7.** Degrees of diaphaneity and their combinations as they appear in the Bahrain sample along with the number of specimens illustrating each and the percentages formed by such numbers of the sample total.



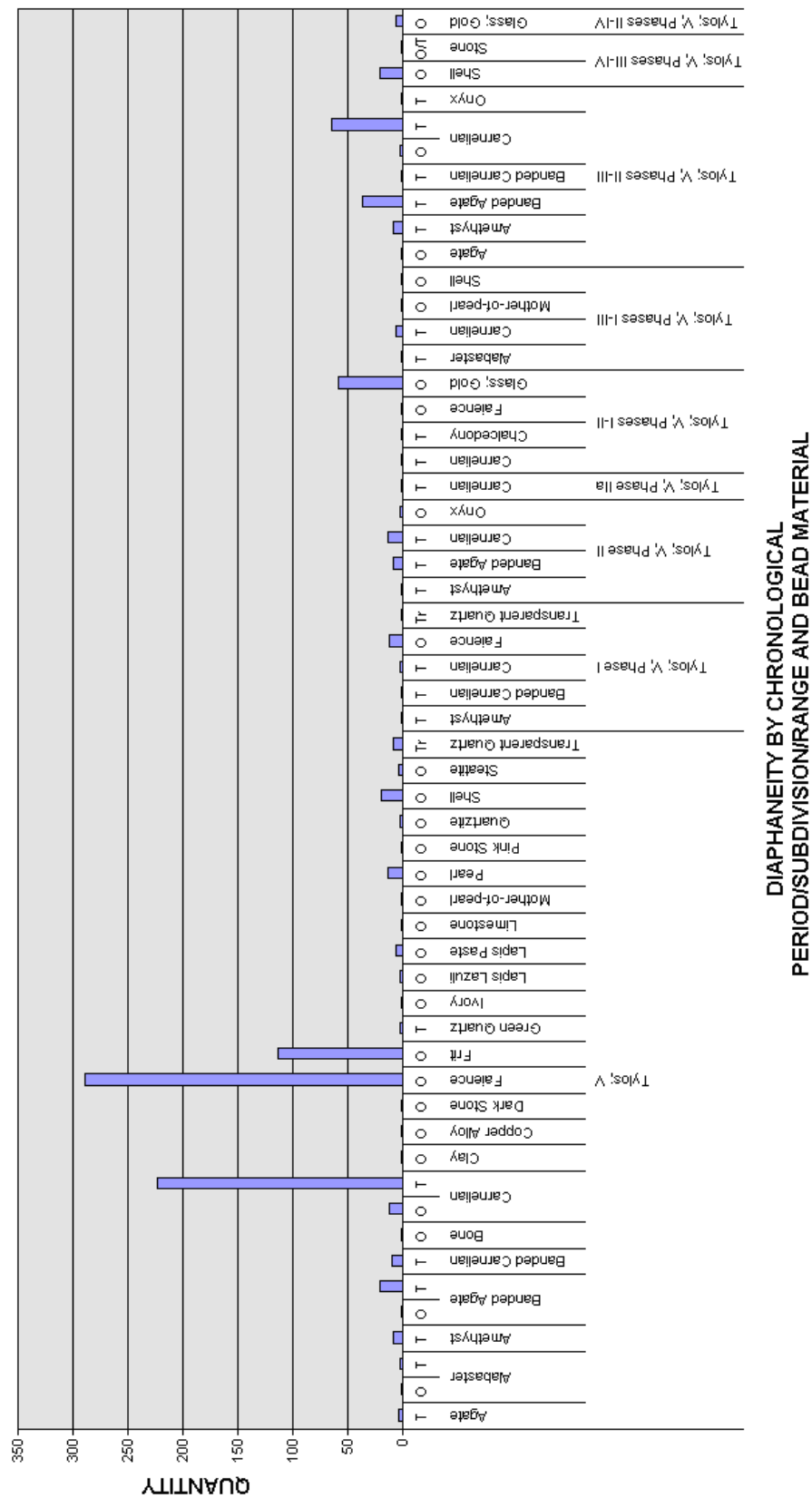
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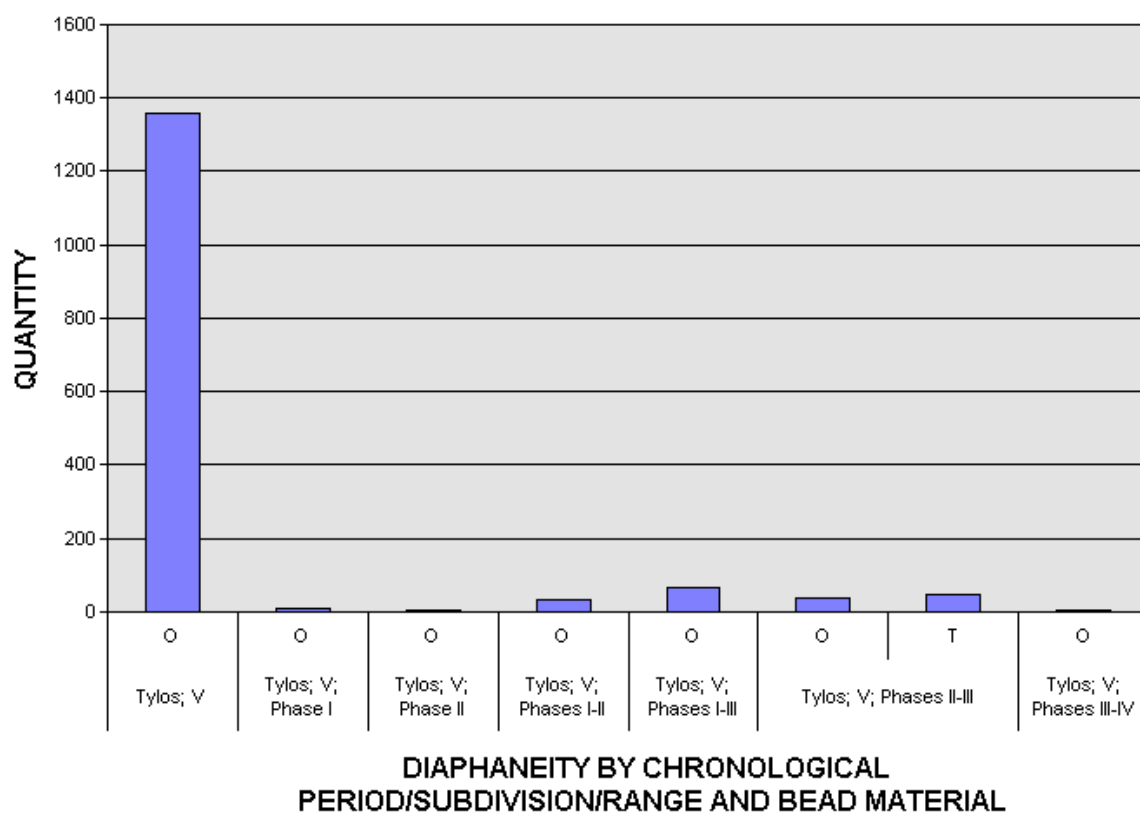
**Fig. 19b.** Second part of a breakdown of Period II bead diaphaneity quantities by chronological subdivision/range and material. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent". Beads B366, B1567 to B1593, B4115, B4116, and B4117 are not taken into account in this graph, since they could belong to a chronological era other than Period II.



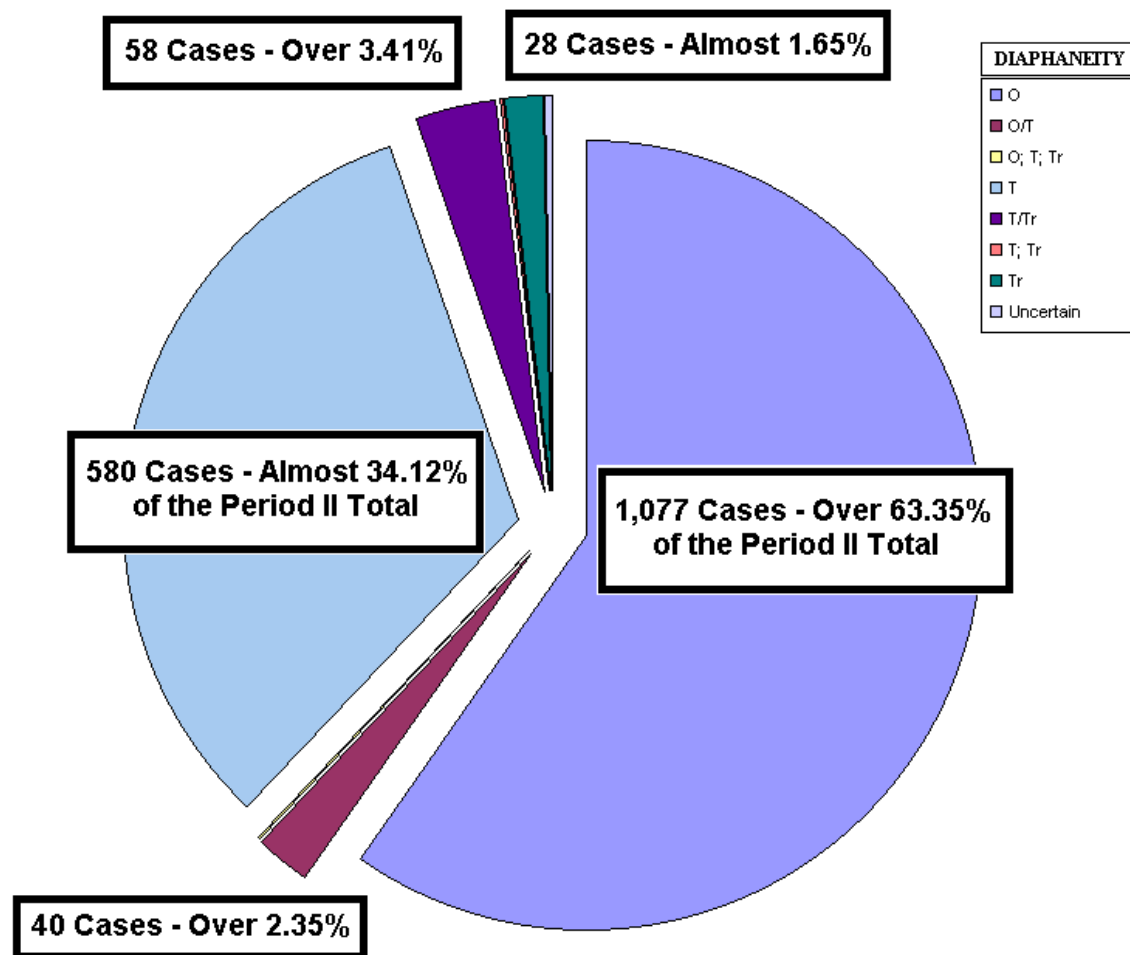
**Fig. 20.** Breakdown of Period IV bead diaphaneity quantities chronologically and by material. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent". Beads B367, B368, B374, B4115, B4116, and B4117 are not part of the quantities displayed in this graph since they could belong to another era rather than Period IV.



**Fig. 21a.** Breakdown of Period V bead diaphaneity quantities chronologically and by material. Glass (but not gold-glass combination) beads are excluded, as these are covered in Fig. 21b. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent". Beads B3744 to B3752 are not taken into account in this graph, since their attribution to Period V is questionable. Similarly, beads B4115, B4116, and B4117 are not included amongst the graph's quantities because they could be Period IV specimens rather than Tylos ones.

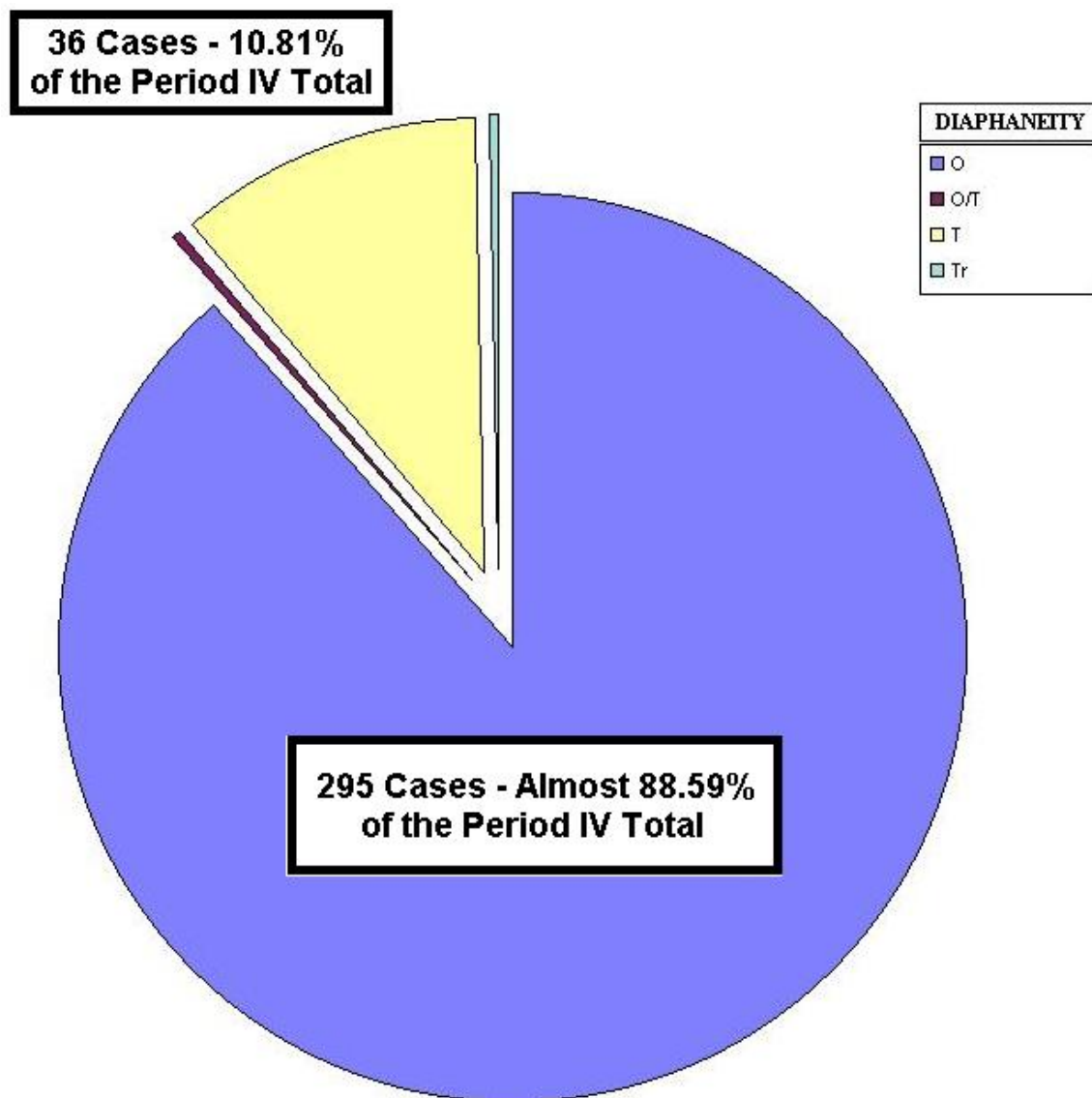


**Fig. 21b.** Period V glass bead diaphaneity quantities, organized chronologically. "O" and "T" respectively stand for "opaque" and "translucent"

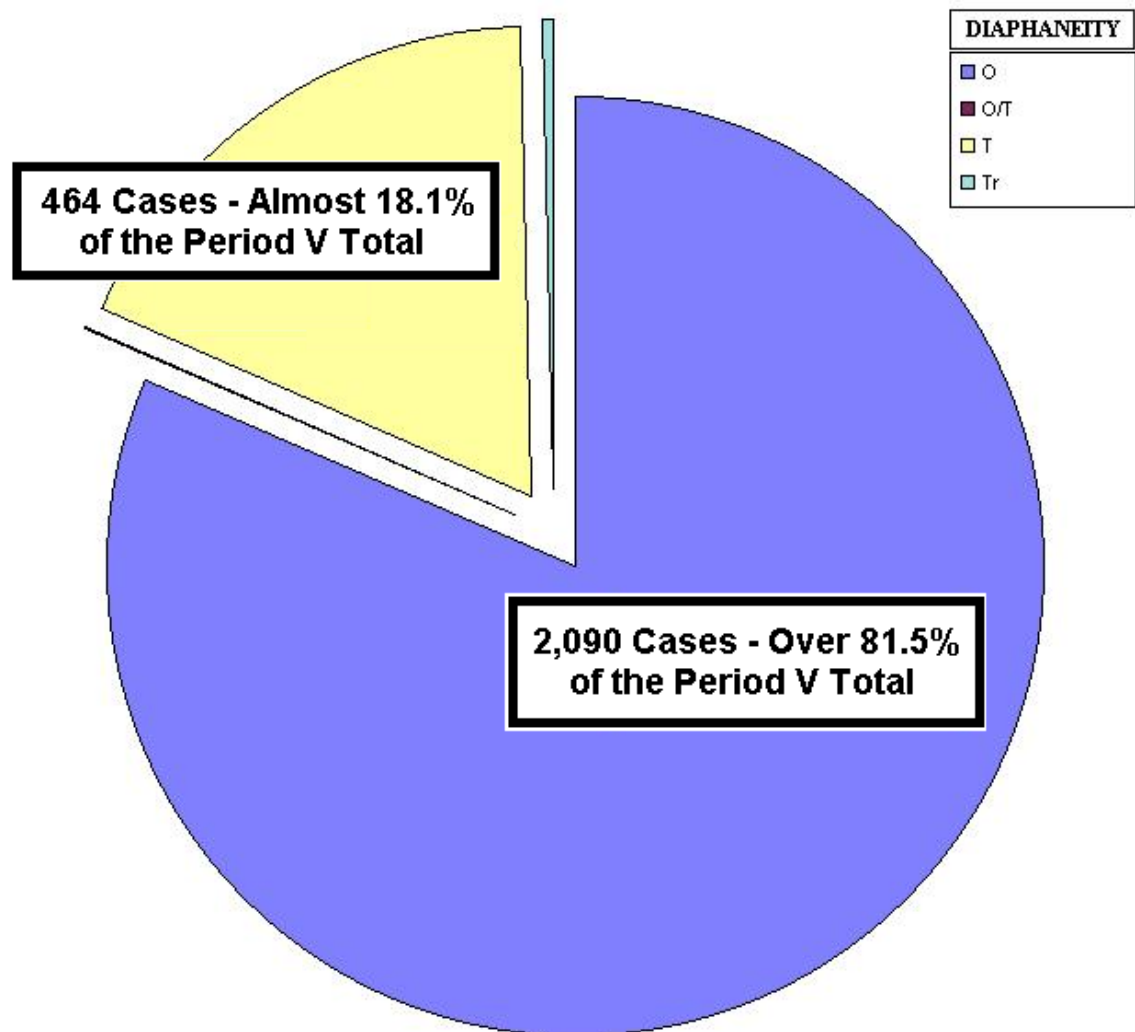


**Fig. 22.** Pie chart showing percentages of different degrees of diaphaneity held by Period II beads in the Bahrain sample. Beads B366, B1567 to B1593, B4115, B4116, and B4117 are not amongst the numbers forming the percentages of the chart, since they could belong to a chronological era other than Period II. All slices of the chart without percentages form less than 1%. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent".

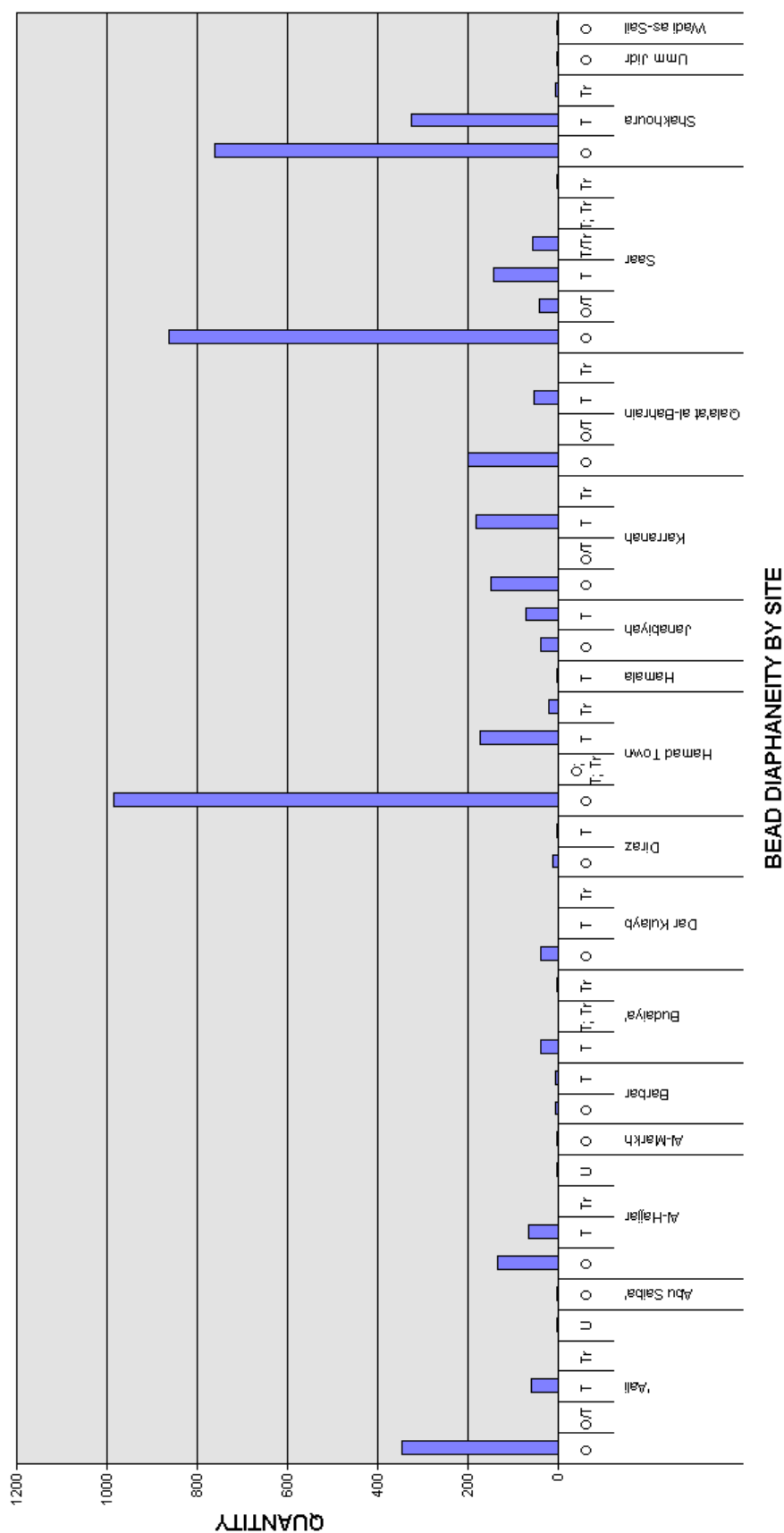




**Fig. 23.** Pie chart showing percentages of different degrees of diaphaneity held by Period IV beads in the Bahrain sample. Beads B367, B368, and B374 are not amongst the numbers forming the percentages of the chart, since they could belong to either Period IV or Period V. Similarly, beads B4115, B4116, and B4117 are not included because they have been assigned to a Ila-IV chronological range which means that they could belong to an era prior to Period IV. All slices of the chart without percentages form less than 1%. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent".

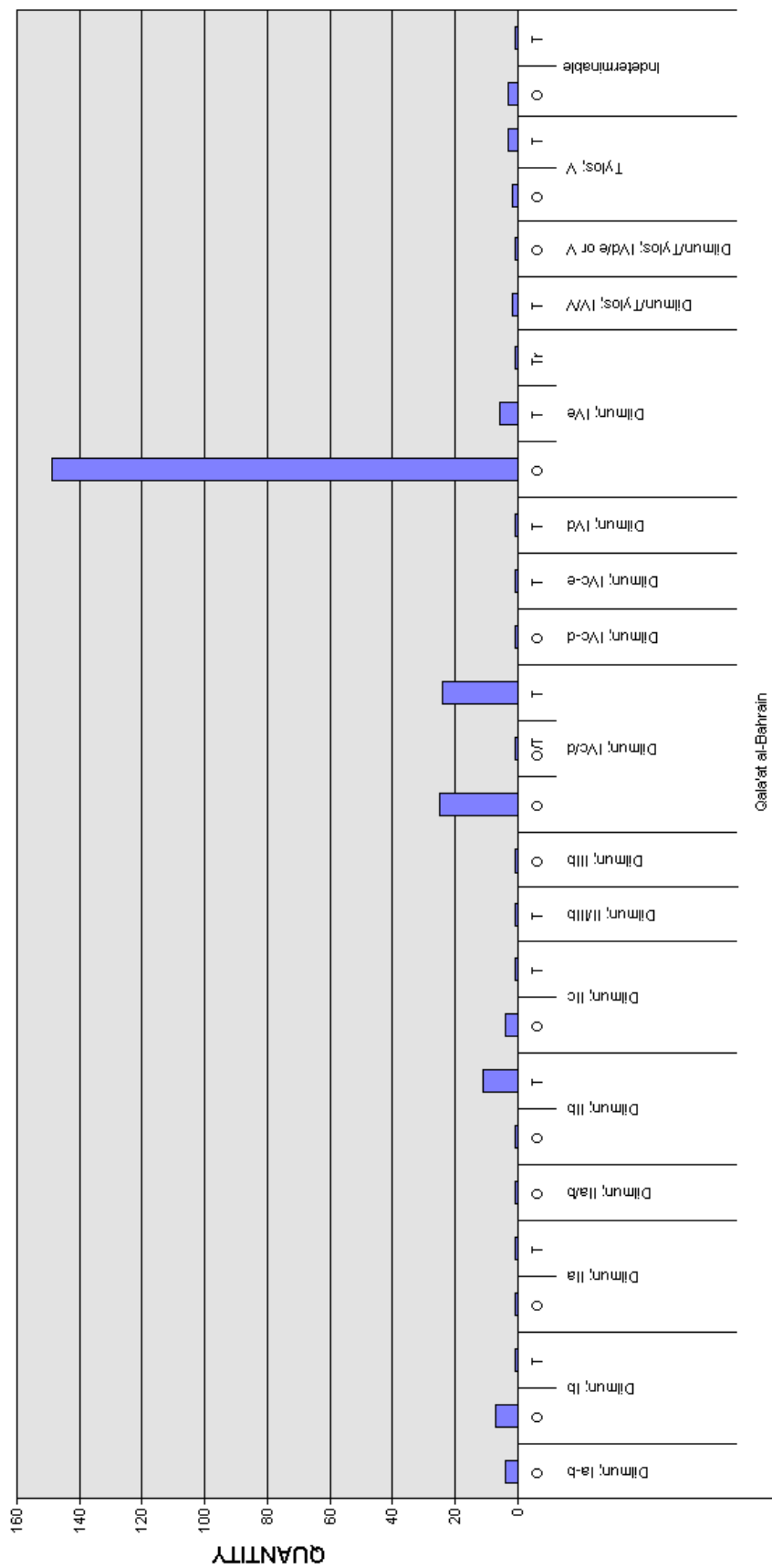


**Fig. 24.** Pie chart showing percentages of different degrees of diaphaneity held by Period V beads in the Bahrain sample. Beads B3744 to B3752 are not amongst the numbers forming the percentages of the chart, since their attribution to Period V is questionable. Similarly, beads B367, B368, and B374 are not included because they could belong to Period IV. All slices of the chart without percentages form less than 1%. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent".



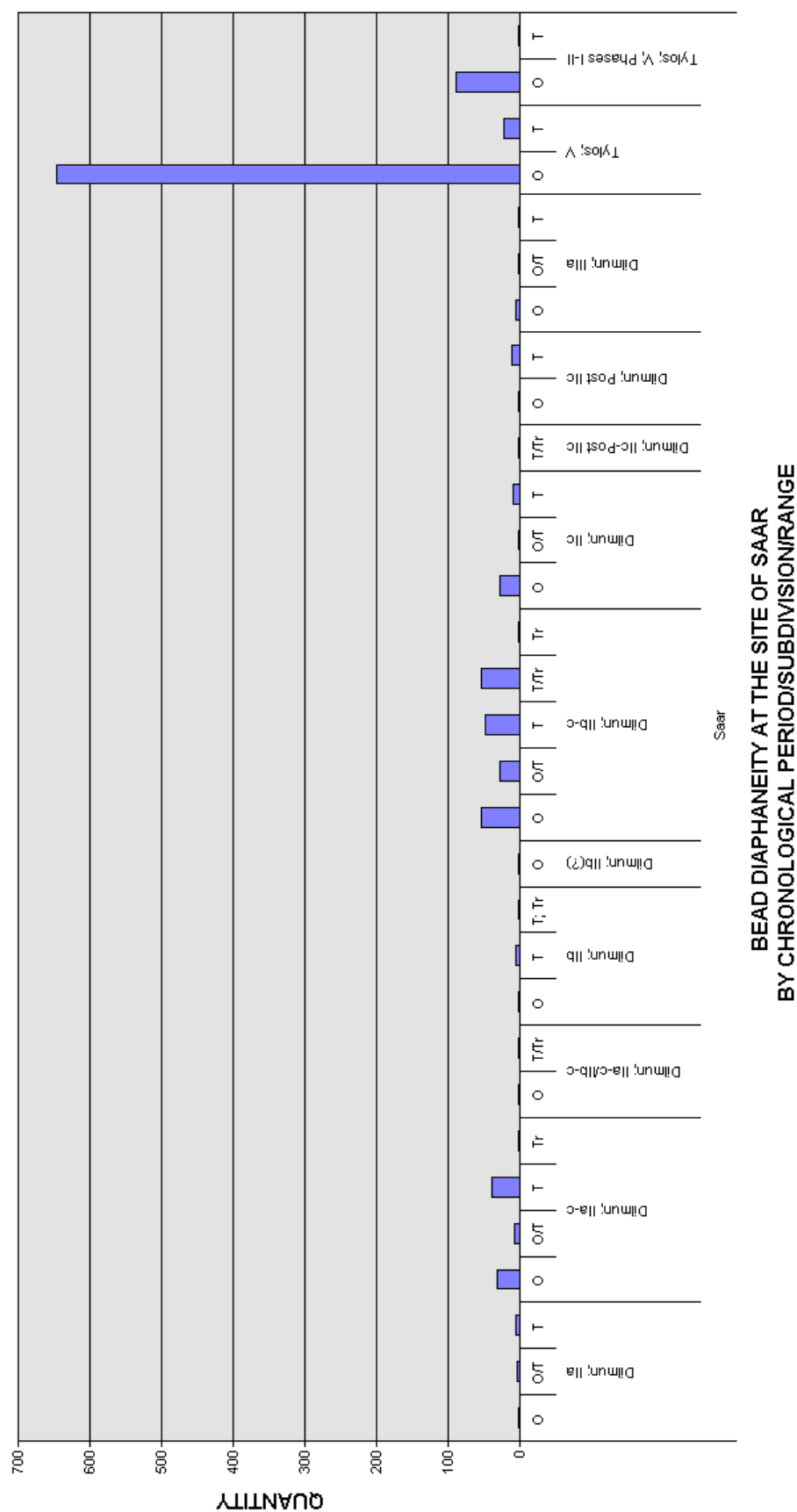
**Fig. 25.** Breakdown of bead diaphaneity quantities in the Bahrain sample by site. "O", "T", "Tr", and "U" respectively stand for "opaque", "translucent", "transparent", and "uncertain".

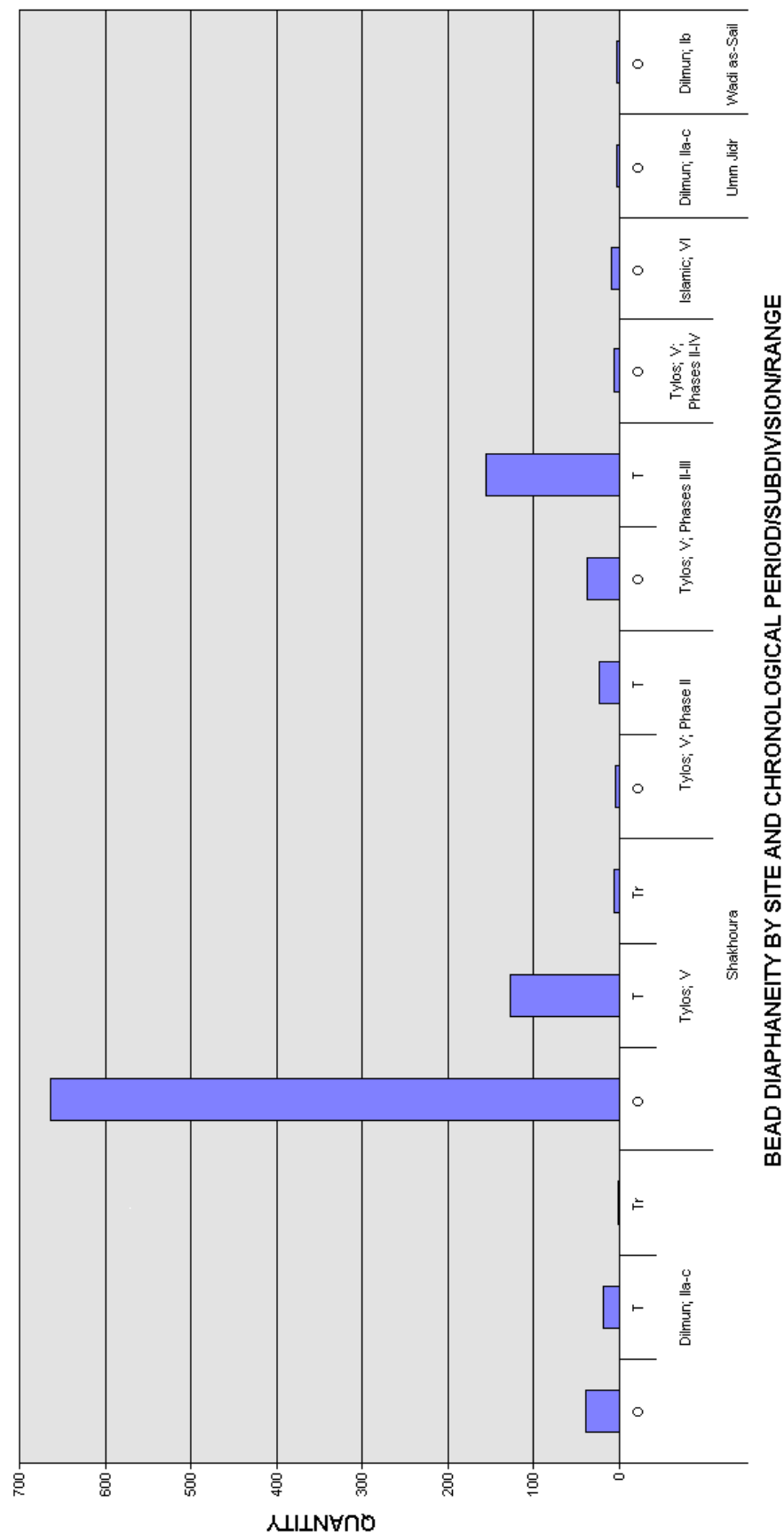




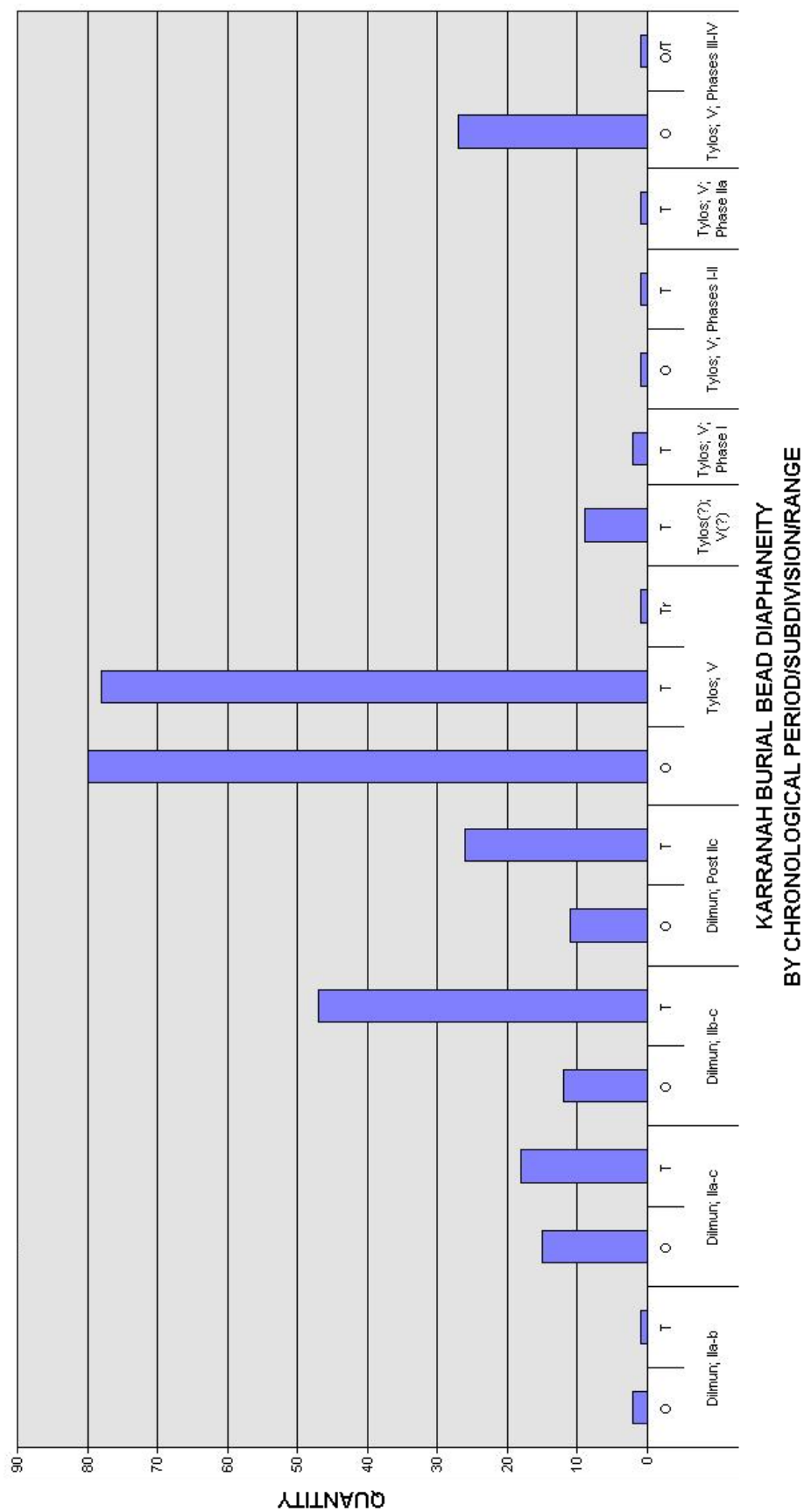
**BEAD DIAPHANEITY AT THE SITE OF QALA'AT AL-BAHRAIN  
BY CHRONOLOGICAL PERIOD/SUBDIVISION/RANGE**

**Fig. 26b.** Second part of a presentation of bead diaphaneity quantities in the Bahrain sample organized by site and chronological period/subdivision/range. This graphic representation portrays such quantities from the site of Qala'at al-Bahrain. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent".

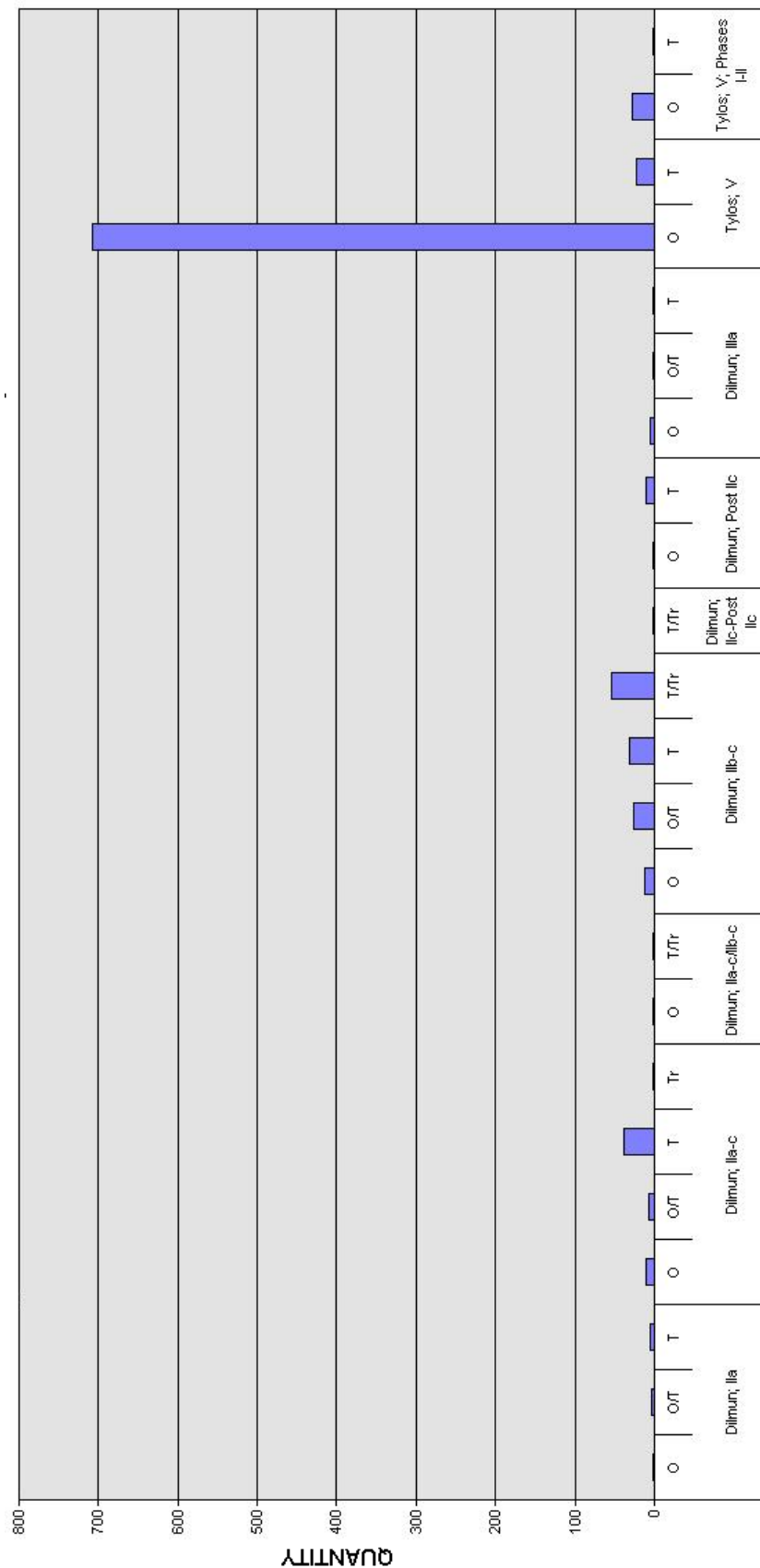




**Fig. 26d.** Fourth part of a presentation of bead diaphaneity quantities in the Bahrain sample organized by site and chronological period/subdivision/range. This graphic representation portrays such quantities from the sites of Shakhoura, Umm Jidr, and Wadi as-Sail. "O", "Tr", and "T" respectively stand for "opaque", "translucent", and "transparent".







**Fig. 28.** Bead diaphaneity quantities from burials at Saar (and not the Saar Settlement, it should be pointed out), organized by chronological period/subdivision/range. "O", "T", and "Tr" respectively stand for "opaque", "translucent", and "transparent".

## 8.5 – Archaeological Narrative

### The Oldest Beads Revisited

#### A. Early Materials and the Appearance of a Hardstone

Having covered the domains of bead material, colour, and diaphaneity as featured in the Bahrain sample, we may now return to the narrative of social and economic development expounded in the previous chapter and shed some additional light on it (or augment it) by means of these subjects. Of course, we begin with the Bahrain sample's earliest bead specimens: the three 4<sup>th</sup> millennium BCE beads (see Roaf, 2003a: 9). It is not surprising that these beads are organic in nature, being of fish otolith and shell, for as W.G.N. van der Sleen, Joyce Diamanti, and others have observed, such organic substances represent some of the earliest materials employed for ornamentation (Diamanti, 2003: 8-9; Van der Sleen, 1973: 55). The oldest beads are often of this sort, and such appears also to be the case in the Bahrain sample. However, it should be added that minerals and other organic substances were also exploited for beadmaking at the time these three beads were in use.

By the start of the 3<sup>rd</sup> millennium BCE, “widespread exploitation of ornamental hardstones” became “of major economic and social importance” (Diamanti, 2003: 9). It was during this millennium that the culture prevalent on the Arabian mainland opposite Bahrain, and which would achieve a remarkable development on the Islands, first appeared (Crawford, 1998: 38-51). At the same time, we have evidence of the beginnings of a pre-Dilmun funerary culture revealing itself upon Bahrain in the form of the Hamad Town grave (located in Square G1 of Mound 26 in the BSW1 area) that has produced the oldest burial beads thus far encountered upon Bahrain (and dated by means of two accompanying Jemdet Nasr pots) (Laursen, pers. comm., 2013). The necklace contained in the grave includes specimens of steatite and etched carnelian (some made entirely white by a thorough use of the process). By the early 3<sup>rd</sup> millennium BCE, therefore, and certainly in the case of the carnelian beads just referred to, it appears that traces of hard mineral exploitation had reached Bahrain.

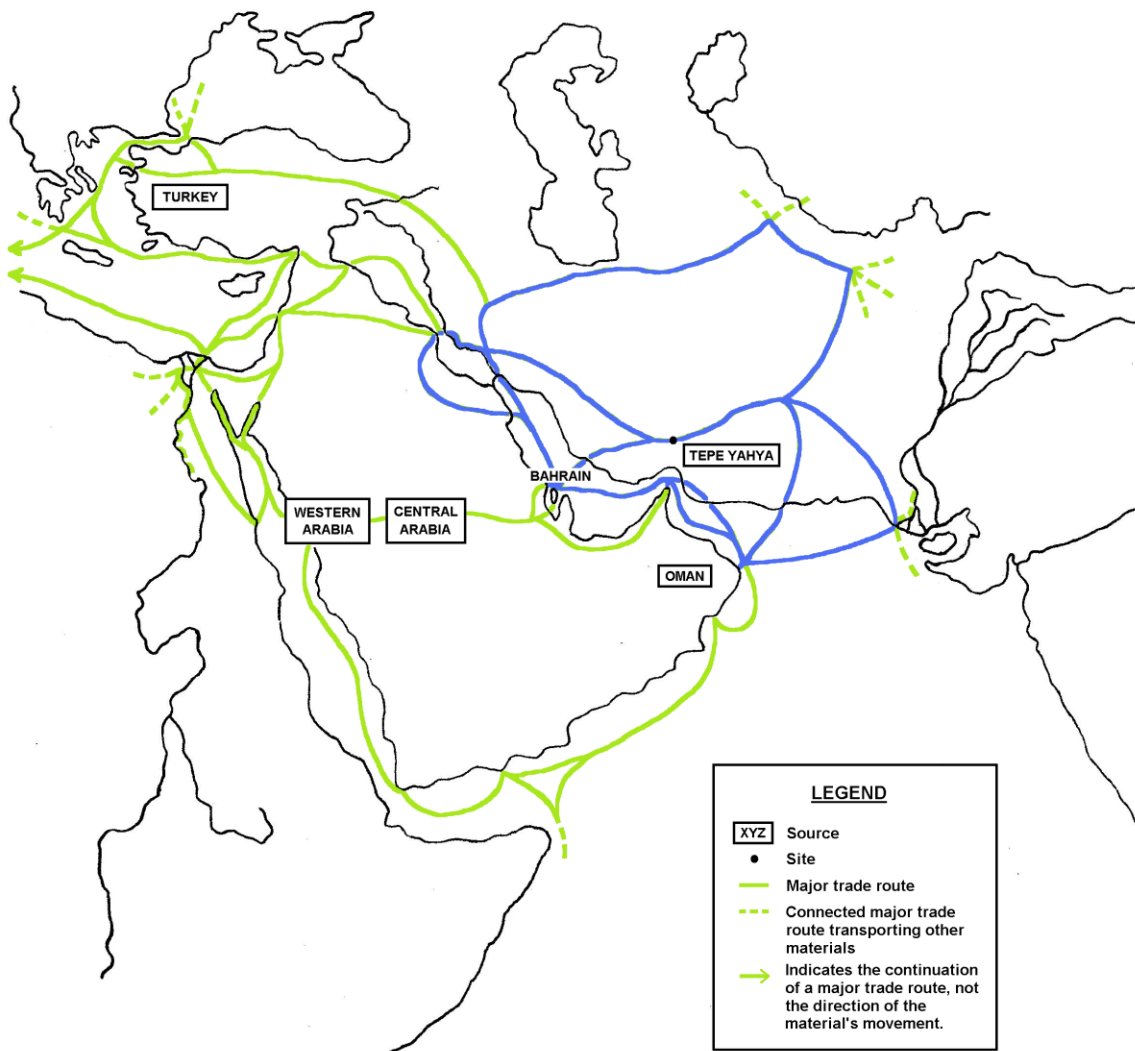
Whilst a discussion of steatite and carnelian may seem more relevant to the Dilmun era, when they featured more prominently in Bahrain, it is perhaps useful to address the question of their sources at this point so as to form a clearer picture of the commercial

interaction and the exchange of raw materials that is visible even at this early stage in Bahrain's past.

## **B. Steatite Sources**

Steatite, a form of chlorite, has certain prominent sources all accessible to Bahrain via sea or overland trade (see Map 1). The hills around Tepe Yahya in Persia possess chlorite/steatite, and the exploitation of the deposits there has been traced back to the 3<sup>rd</sup> millennium BCE (Beale, 1973: 133, 136, 140-144, Figs. 1-2; Crawford, 2004: 184-185; Kohl, 1978: 468; Mortazavi, 2005: 107-108). The western and central portions of the Arabian mainland, not to mention Oman, also possess prominent sources of chlorite/steatite, as does Turkey (Beale, 1973: 136; Crawford, 1998: 45; Crawford, 2004: 185; Potts, 1986: 391).

**CHLORITE/STEATITE SOURCES  
AND MAJOR TRADE ROUTES**



**Map 1.** Chlorite/steatite sources mentioned in the text and the major trade routes that transported such materials. Those routes that moved Persian chlorite/steatite and were shared with the transportation of lapis lazuli are indicated in blue. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

### C. Carnelian Sources

Carnelian is a form of iron-rich chalcedony, similar to agate, and so is found in much the same areas where agate deposits are located (see Map 2). The primary sources of carnelian are those in India, particularly in the Gujarat region; Ratanpur and Khambhat come immediately to mind (De Waele and Haerinck, 2006: 32; Francis, 2002: 103-111, 117, 180, 244). Carnelian is also found in the Deccan Plateau (De Waele and Haerinck, 2006: 32). Sources in South India exist in the Golconda region as well as the Krishna-Godavari doab (Francis, 2002: 118).

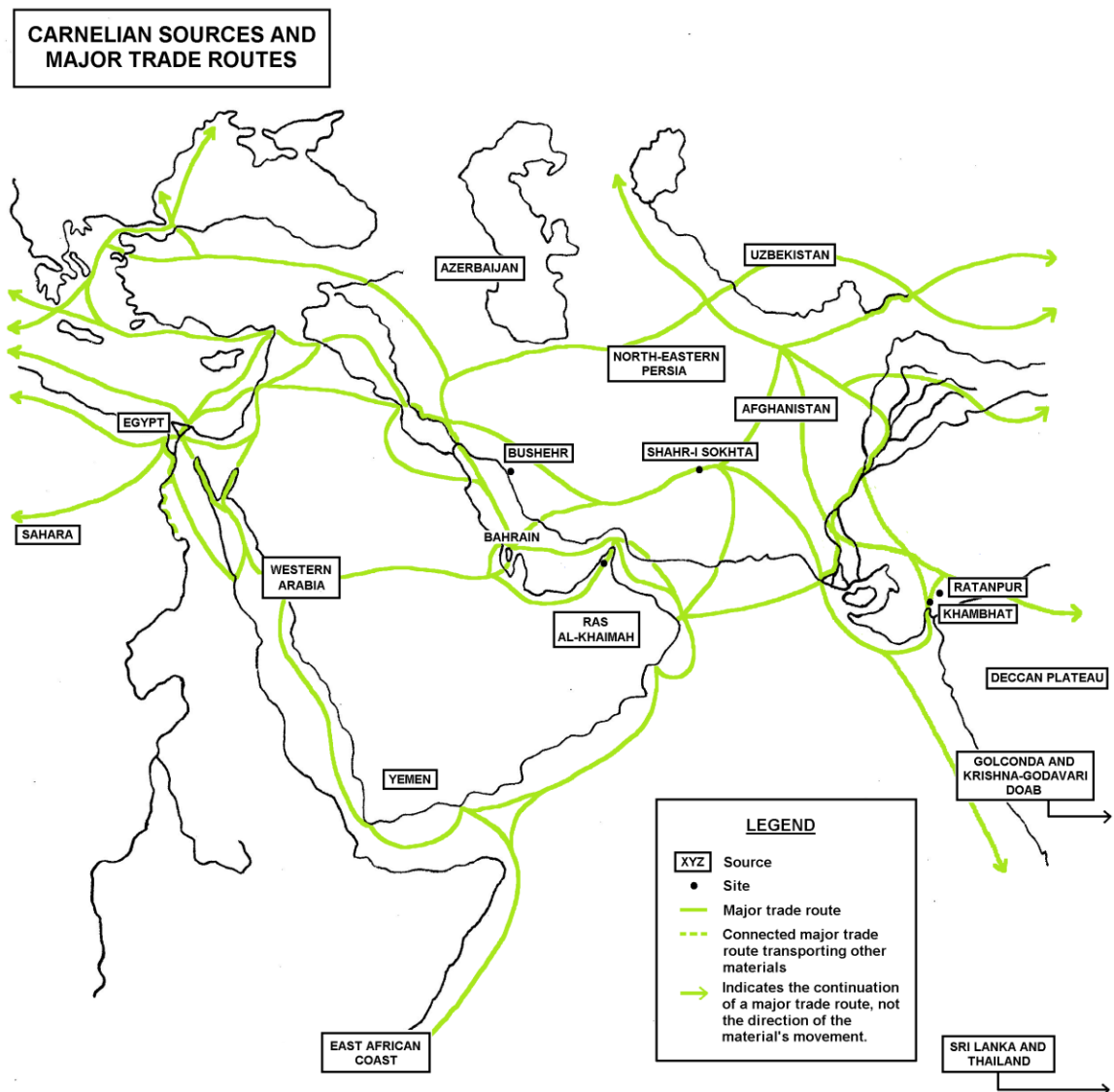
Other sources of carnelian, less well-known than those of India, exist that could have been exploited. Sources in Afghanistan, Azerbaijan, and Uzbekistan represent Central Asia regions that possess carnelian (De Waele and Haerinck, 2006: 32; Simpson, 2003: 64-65). In terms of sources on the Arabian Peninsula, carnelian and agate deposits exist near Ras al-Khaimah in the modern-day United Arab Emirates as well as in Yemen (De Waele, 2007: 300, 305; De Waele and Haerinck, 2006: 32; Francis, 2002: 175; Insoll, 2005: 294-295). Carnelian also exists in the western portions of the Arabian mainland, already mentioned with regard to chlorite/steatite (De Waele and Haerinck, 2006: 32).

In Persia, carnelian deposits exist within the vicinity of Bushehr and in the Helmand Basin (particularly Shahr-i Sokhta) in Seistan (Beale, 1973: 136, Fig. 1; De Waele and Haerinck, 2006: 32; Whitehouse, 1975: 129). Sources also exist in north-eastern Persia.

Carnelian can also be found along the East African coast and deposits exist in North Africa, especially in Egypt and the Saharan region (Horton, 2004: 72-73; Insoll and Shaw, 1997: 12, 15; Leemans, 1960: 27; Sutton, 2001: 51-54). There are also sources in South-East Asia, which may be mentioned here alongside the others though actually they may be more relevant to the later portions of this chapter and the Tylos era. Such South-East Asian sources include those in Sri Lanka and Thailand (Theunissen, Grave, and Bailey, 2000: 85, 91-93, 100-102).

Whilst some of the carnelian sources mentioned have documented exploitation belonging primarily to later epochs, such as the Islamic era, this does not preclude their use in earlier periods as well, particularly when bearing in mind their close proximity to many of the ancient sites exhibiting a need for such a material. However, the majority of these sites, and most of those in India are the prime examples of this, possess a long history of exploitation covering the Dilmun and Tylos eras on Bahrain and beyond (both in an anterior and posterior

direction). Bahrain's commercial reach, as Dilmun and Tylos, encompassed most if not all the regions associated with carnelian at one point in time or another.



**Map 2.** Carnelian sources mentioned in the text and the major trade routes that transported the material. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

#### **D. Persia and the Indus Region: A Matter of Likelihood and Contact**

With regard to the early 3<sup>rd</sup> millennium BCE, and based on the grave that has provided Bahrain's earliest funerary beads, it seems that the Islands were more likely in contact with particular sources as opposed to others. In this, they were like the Oman Peninsula and the region of Tell Agrab in southern Mesopotamia. Both of these regions have produced steatite beads similar to those of the Bahrain burial (Laursen, pers. comm., 2013). Steatite appears to have been imported from Persia due to proximity to all three regions mentioned. Moreover, the lapis lazuli routes to Mesopotamia ran through Persia, making steatite from the latter quite accessible (Crawford, 2004: 180-181; Lamberg-Karlovsky, 1997: 91; Van De Mieroop, 2007: 53-54). The arrival of Persian steatite on Tarut Island, close to Bahrain on the eastern coast of the Arabian Peninsula, in the late 3<sup>rd</sup> millennium BCE emphasizes the dependence on Persian sources (though others, such as those in central Arabia were also drawn upon) (Crawford, 1998: 45-47). Mesopotamia appears to have also shared in such dependence upon Persia (see Crawford, 2004: 185).

Carnelian did, for the most part at least, come from India. The testimony of Mesopotamian cuneiform texts from the late 3<sup>rd</sup>/early 2<sup>nd</sup> millennium BCE supports this by mentioning carnelian specifically as coming from Meluhha (i.e., the Indus Valley) (André-Salvini, 2000: 29; Francis, 2002: 7; Van De Mieroop, 2007: 53-54). It seems therefore that the Indus region was the main provider of carnelian to the Arabian Gulf in the late 3<sup>rd</sup>/early 2<sup>nd</sup> millennium BCE.

It also seems this was the case in the centuries leading up to the time of the cuneiform texts. For example, we have evidence of carnelian beads of the Indus variety at the Royal Cemetery of Ur from graves that predate the texts and belong to the Early Dynastic (c. 2900-c. 2350 BCE) and Akkadian (c. 2350-c. 2150 BCE) periods in Mesopotamia (Diamanti, 2003: 12). The contact between Mesopotamia and the Indus is further made visible by archaeological evidence for Harappan immigrants settled at Ur (De Waele and Haerinck, 2006: 32; Lankton, 2003: 35). Whether these immigrants were responsible for at least some of the carnelian beads at the Royal Cemetery or not (and unworked nodules discovered at the site do seem to suggest some carnelian beadmaking did take place there), contact with the Indus and the definite arrival of raw carnelian from a region with a history of hardstone exploitation (even at the time), must surely account for the material arriving from Harappan lands (see Kenoyer, 2008: 25-26). We have further evidence, of an epigraphic nature, for contact with

the Indus from the time of Sargon of Akkad, who portrayed ships from Meluhha docked in southern Mesopotamia (Bibby, 1996: 153).

Epigraphic evidence from Mesopotamia encountered so far, however, has been silent about possible sources of carnelian “closer to home”. Despite the reliance on the Indus for carnelian taken for granted by most archaeologists, the situation was likely more complex.

Still, why would Mesopotamia seek Indus carnelian if alternative sources existed nearby? Either these sources were considered inferior (perhaps in mineral quality) or had still to be exploited (at least at the time of the cuneiform texts). But if they were in use, they evidently were not seen as deserving attention (in written testimony) when compared to the Indus. Whilst one cause for this may have been the distance involved, emphasizing the reach of Sargon’s influence in his inscription, it is nonetheless clear that the Indus was seen as commercially synonymous with a number of goods amongst which carnelian was prominent.

Another reason to associate such early carnelian as exemplified by the Hamad Town grave with the Indus is the fact that they are etched. In the 3<sup>rd</sup> millennium BCE, etching was mainly the province of the Indus (De Waele and Haerinck, 2006: 31-32). Despite the fact that we observe wholesale etching of carnelian beads, turning them entirely or almost entirely white or cream-coloured, which is hardly observed amongst Indus beads, the process itself must have been transferred by means of contact with the Harappan civilization, and particularly its beadmaking industry. Thus the Indus must have been appreciated, both as a source of raw material and a region of beadmaking, for materials and techniques to be acquired therefrom.

The beads from the Hamad Town grave may be seen as exemplifying the interaction present during the Jemdet Nasr period between Mesopotamia, Persia, and the Indus. Since Jemdet Nasr pots have been found alongside the same specific variety of steatite spacer in both Bahrain and Oman (and the latter have yet to be encountered without the former), a Mesopotamian origin for this type of bead seems likely and is supported by the spacer finds at Tell Agrab. Just how much (if any) involvement Bahrain had in the Mesopotamian interaction is debatable, judging from the basis of a single necklace. However, with the advent of the Early Dilmun period, Bahrain’s involvement became definite.



## **Period I and Its Subdivisions**

### **A. The Early Affluence of Dilmun in Period I**

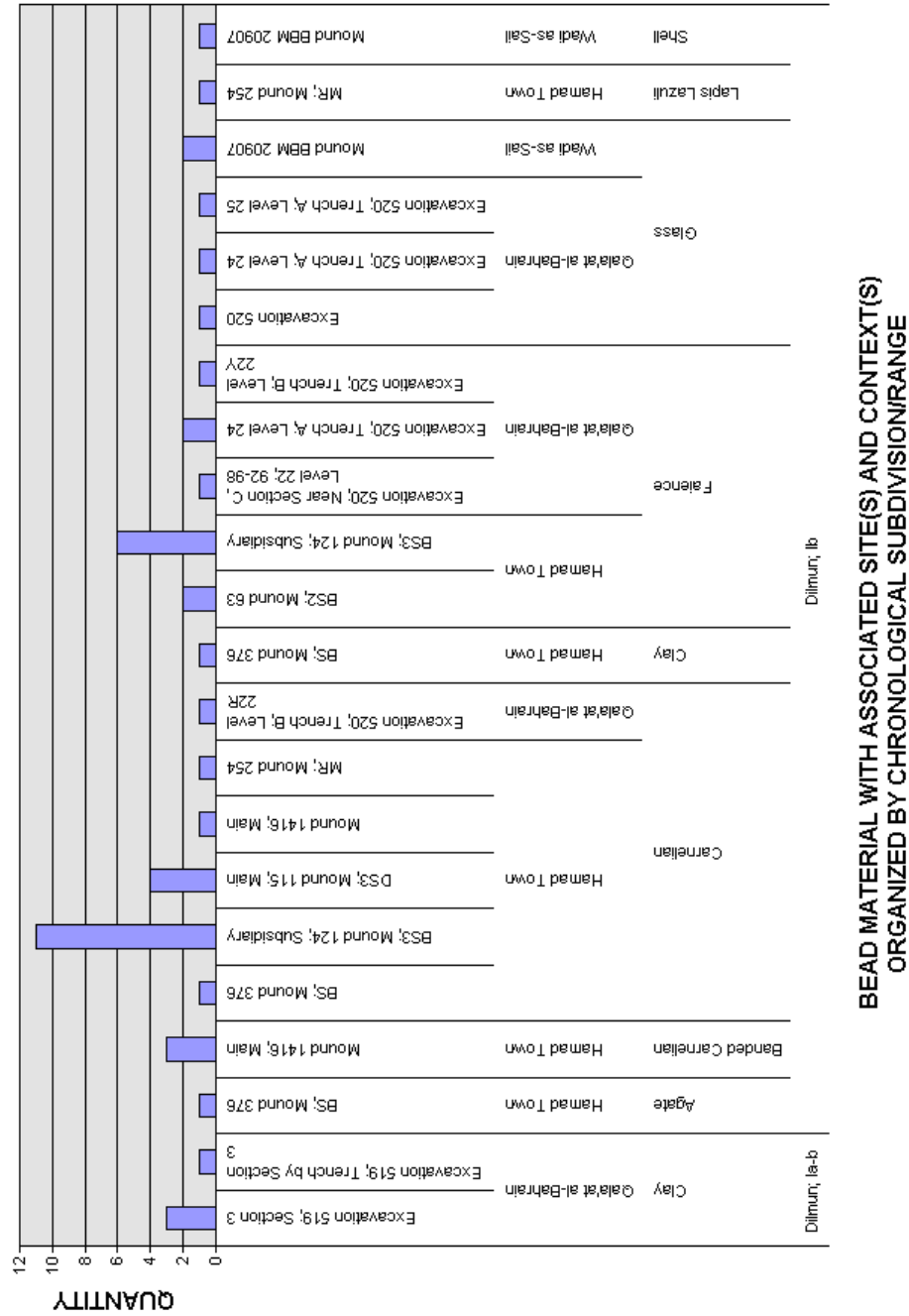
Late in the 3<sup>rd</sup> millennium BCE, the mortuary culture prevalent on the Arabian mainland directly opposite Bahrain arrived on the Islands (Højlund, 2007: 123, 129). Thus Bahrain entered its Period I and the Early Dilmun era. The site of Qala'at al-Bahrain achieved a marked importance (Højlund, 2007: 123; MacLean and Insoll, 2011: 21-24). That this was due to its being a port for maritime trade is apparent, for it gazed out upon the waters surging past the northern end of Bahrain's main island (see MacLean and Insoll, 2011: 24). It is also evident by the range of Period I bead materials in the Bahrain sample.

Only four clay beads belong to a Period Ia-b chronological range at Qala'at al-Bahrain and indeed the Bahrain sample as a whole, but a greater variety may be specifically attributed to Ib or a Ib-IIc chronological range both at the site and across Bahrain (see Fig. 29). To Ib, eight different beads materials can definitely be attributed, including some telling ones, that came from Qala'at and certain Early Type burial mounds resembling the funerary culture that had recently spread to Bahrain. Most of these seem to point to a high standard of wealth, and it seems that from its earliest days Dilmun had achieved a significant affluence.

### **B. Period Ib Carnelian Beads**

19 carnelian specimens and three banded carnelian ones in the Bahrain sample derive from Period Ib (see Fig. 29). Only one of the former was from Qala'at, but 18 came from several Early Type mounds at Hamad Town (along with the banded carnelian cases), the highest number (11 beads) being from a subsidiary burial of Mound 124 in Hamad Town's BS3 area. Based on what has already been noted regarding carnelian sources, a connection between Bahrain and the Indus existed in Period I. This is supported by Mesopotamian cuneiform texts and other finds from Bahrain (see Højlund, 2007: 123). It was apparently a connection that was appreciated, and which gave carnelian a certain value that was even then quite visible. Because of this, carnelian (even disregarding its banded variety, though these should be included) outnumbered other materials as beads in Period Ib. Carnelian and lapis lazuli were two of the most sought after materials of the 3<sup>rd</sup> millennium BCE in the Near East and given great value (see Diamanti, 2003: 12; Lamberg-Karlovsky, 1997: 91; Lankton, 2003:

34-35). How much this was the case in Dilmun is implied by Ib carnelian specimens, already outshining other stones in its earliest period on Bahrain.



**Fig. 29.** Bead quantities representing Period I materials along with the site(s) and context(s) of each, organized by chronological subdivision/range. Beads B1567 to B1593, 27 in all, are not taken into account in this graph, since they could belong to one of the first three chronological subdivisions of Period II rather than Period Ib.

### C. Faience: The Second Most Numerous Ib Material

The second most numerous Period Ib material in the Bahrain sample is faience, there being 12 Ib examples (see Fig. 29). The significance of faience lies in the fact that it represents, along with glass, one of the first (chronologically) synthetic materials in the sample. As far back as 5400 BCE, faience beads were being produced in the Near East, particularly in Mesopotamia and Syria (Fortin, 1999: 152; Lankton, 2003: 37). They achieved a remarkable development in Egypt (after their appearance there in the early 4<sup>th</sup> millennium BCE), and “Egyptian Blue” is a variety particularly well-known to archaeology (Lankton, 2003: 37; Moorey, 1994: 168). The faience beads of ancient Bahrain, however, do not resemble those of Egypt. Nor do they resemble those from the Indus, which were made from “ground steatite”, were denser than their western counterparts, and featured glazing which went deep into the underlying bead body (Lankton, 2003: 45). Rather, Bahrain’s ancient faience beads are closer in quality and hue to those of Mesopotamia and Syria, already mentioned.

In the late 3<sup>rd</sup> millennium BCE, Period I and the beginning of Period IIa on Bahrain, Syrian sites possessed particular prominence for faience manufacture (Lankton, 2003: 45). Many of Bahrain’s late 3<sup>rd</sup> millennium as well as 2<sup>nd</sup> millennium BCE faience beads may have come from such sites, if they were not locally produced in Dilmun. Nonetheless, early faience was considered a “prestige technology” (Lankton, 2003: 46). It has even been described as the “first high-tech ceramic” (Vandiver and Kingery, 1986: 19). As such, it would have been the province of the elite and the wealthy, deemed valuable because of its innovative nature and representation of a standard of technology yet to become widely available. The finding of six Period Ib specimens alongside 11 carnelian beads in a single grave (the subsidiary chamber of Mound 124 in Hamad Town’s BS3 area, which has already been mentioned above) hints at a particular affluence for its time. It also appears that a great deal of early faience was employed as a turquoise “substitute”; this can be traced back to the 4<sup>th</sup> millennium BCE (Lankton, 2003: 46; Taniguchi *et al.*, 2002). This is natural, since the copper-based blue-green colour of faience often resembles the hue of turquoise. Being easier to produce and acquire than beads of turquoise, which necessitated the acquisition of a rare raw material, faience beads were cost-effective imitations of their mineral counterparts.

#### D. Period Ib Glass Beads

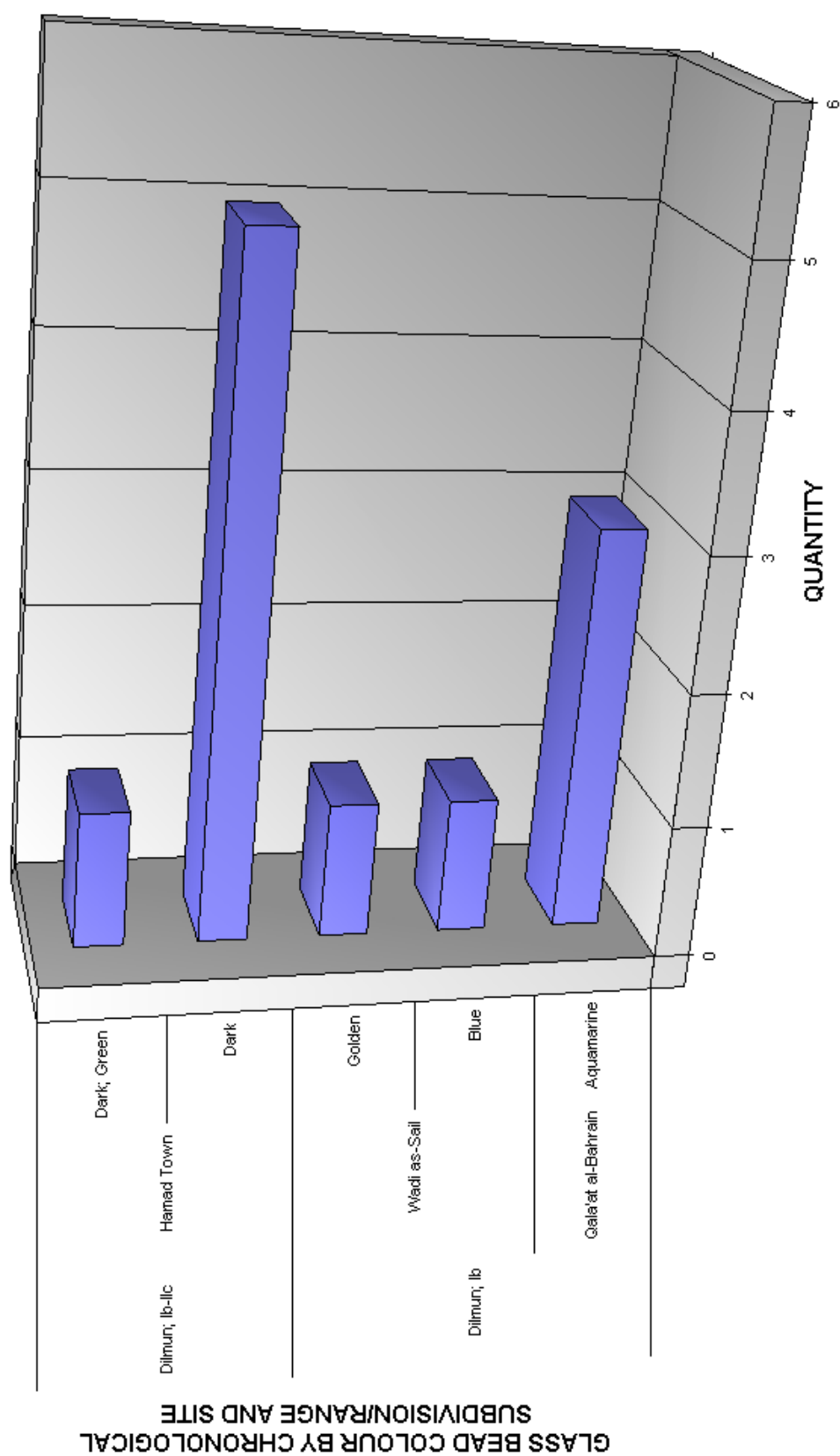
Five specifically Ib glass beads are visible in the Bahrain sample, three of which were excavated at Qala'at al-Bahrain whilst two came from Mound BBM 20907 at Wadi as-Sail (see Fig. 29). The finding of glass in Period Ib contexts is quite important, since it shows Dilmun as having quickly come into contact with a material in the early centuries of its use, prior to its prominence becoming cemented during the 2<sup>nd</sup> millennium BCE. Prior to the span of time between 1700 and 1500 BCE, and beginning around the middle of the 3<sup>rd</sup> millennium BCE, glass technology was still in its infancy with occasional examples deriving from the experimentation of craftsmen (Bienkowski and Millard, 2000: 129; Lankton, 2003: 39; Renfrew and Bahn, 2004: 345). The fact that we have early glass from Period I contexts points out that Dilmun was early on in contact with the sites experimenting with glass technology (if Bahrain did not harbour one or more itself), which reveals not only the extent of its access to such an innovation but, significantly, its prosperity.

Glass remained for long, after its initial introduction, a “prestige good”, with some proof of its “prestige” status in the 2<sup>nd</sup> millennium BCE being its accompanying gold in ornamental pieces, its inclusion in requests between rulers, and its accompanying other luxury materials commercially across great distances (Lankton, 2003: 45). The value of glass at this time (much like faience in its own) was due to its innovative nature, the pyrotechnology required for its production (which was not widely available), and its early appearance primarily in contexts suggesting wealth and status. If such were the case in the 2<sup>nd</sup> millennium BCE, how much more so it would have been prior to 2050 BCE. Indeed, corroboration of this assumption comes from the fact that two of the Period Ib glass beads were recovered from an Early Type mound with an outer ring-wall, identified as an “elite” burial (see Højlund *et al.*, 2008: 149, Fig. 17). Because of this and earlier observations, we may consider the Period Ib glass beads as not only early examples but also evidence of Dilmun’s affluence in this period.

Besides being a luxury in themselves, it seems that glass beads, from their earliest appearance in Bahrain in Period Ib, were used to imitate some of the precious minerals that held the highest esteem in the 3<sup>rd</sup> millennium BCE. The five specifically Period Ib glass beads in the Bahrain sample seem to show this tendency (see Fig. 30). Imitation was often attempted by means of colour, with magnesium producing dark hues (even black), copper greenish hues, cobalt bluer ones, etc. (see Francis, 2002: 10-11; McCarthy, 2008: 916; Van der Sleen, 1973: 22).

The aquamarine beads from Qala'at al-Bahrain may well have imitated turquoise, deemed rare and precious in the 3<sup>rd</sup> millennium BCE (see below), much as faience was employed to do. Though using glass for turquoise imitations has been suggested in the past regarding other Near Eastern finds, a second possibility is that blue-green glass may have been sought for its similarity to faience rather than turquoise, but deemed a higher quality and “more luxurious” equivalent (Lankton, 2003: 45-46). Of course, both materials may have found a parallel in blue-green glass, resulting in a need for both being met; for glass was more available than turquoise and of better quality than faience.

The two glass beads from the “elite” Wadi as-Sail burial are golden and blue respectively (see Fig. 30) (Højlund *et al.*, 2008: 149, Fig. 17). The former naturally reproduces the colour of the associated precious metal whilst the latter appears to imitate lapis lazuli. Many examples of early glass were imitations of lapis lazuli, the most valuable mineral of the 3<sup>rd</sup> millennium BCE in the Near East (Lamberg-Karlovsky, 1997: 91, 96; Lankton, 2003: 40, 45). The second “elite” bead is but another case.



**Fig. 30.** Period I glass bead colours in the Bahrain sample and the quantities that represent them. These include the colours of the five specifically Ib beads employed to produce glass imitations of other materials.

## **E. B1479 and the Importance of Lapis Lazuli**

A lapis lazuli bead (B1479) accompanying one of the carnelian cases mentioned above, both excavated from Mound 254 of Hamad Town's MR area, thus becomes an indication of wealth, with its related commercial implications (see Fig. 29). From the end of the 4<sup>th</sup> millennium BCE and through the 3<sup>rd</sup> millennium to follow, lapis lazuli was the Near East's most widely sought and treasured bead material (Francis, 2002: 7; Lankton, 2003: 25, 31-32). Proof of its value may be seen in the inclusion of lapis lazuli beads in the renowned Treasure of Ur, recovered at Mari, and in Queen Puabi's headdress, excavated at the Royal Cemetery of Ur (Diamanti, 2003: 12; Dubin, 2006: 33; Fortin, 1999: 84; Lankton, 2003: 31). What is interesting is that past estimations have considered 74% of all ancient lapis lazuli to have come from the tombs of Queen Puabi and her consort; moreover only 21% of the tombs at the Royal Cemetery contained this material at all (Lankton, 2003: 32). Of course, it is difficult to confirm such estimates, and surely they do not consider more recently excavated material; however, they do point to the scarcity with which lapis lazuli has been encountered in archaeological contexts as well as the extreme value accorded it in the 3<sup>rd</sup> millennium BCE. It seems the value of lapis lazuli reached such dizzying heights that it even warranted the Mesopotamian King Enmerkar attempting to re-open its trade because the city of Aratta in Persia was hindering the arrival of the stone in Uruk (Herrmann, 1968: 38-39; Kohl, 1978: 468).

The Period Ib lapis lazuli bead from Hamad Town is an example deriving from a context dating to the time of its importance. However, despite being so greatly valued and frequently mentioned Mesopotamian religious inscriptions, the archaeological recovery of lapis lazuli from 3<sup>rd</sup> millennium BCE sites has been a rare occurrence (Lankton, 2003: 39; Tallon, 1995: 61). This was evidently the reason behind attributing such a high percentage of the total 3<sup>rd</sup> millennium lapis lazuli finds to the tombs of Queen Puabi and her consort, and it either points to the scarcity of the material or else (and possibly combined with the former) the great value in which it was held that decreed its interment with the dead. However, such interment did occasionally take place in Mesopotamia (e.g. the tombs just mentioned at the Royal Cemetery of Ur) and we find the Period Ib lapis lazuli bead representing another case in Bahrain. This says much about the wealth of the individual buried in Mound 254 and the affluence that could be encountered in Dilmun even during Period I.



## **F. Lapis Lazuli: Sources and Major Trade Routes**

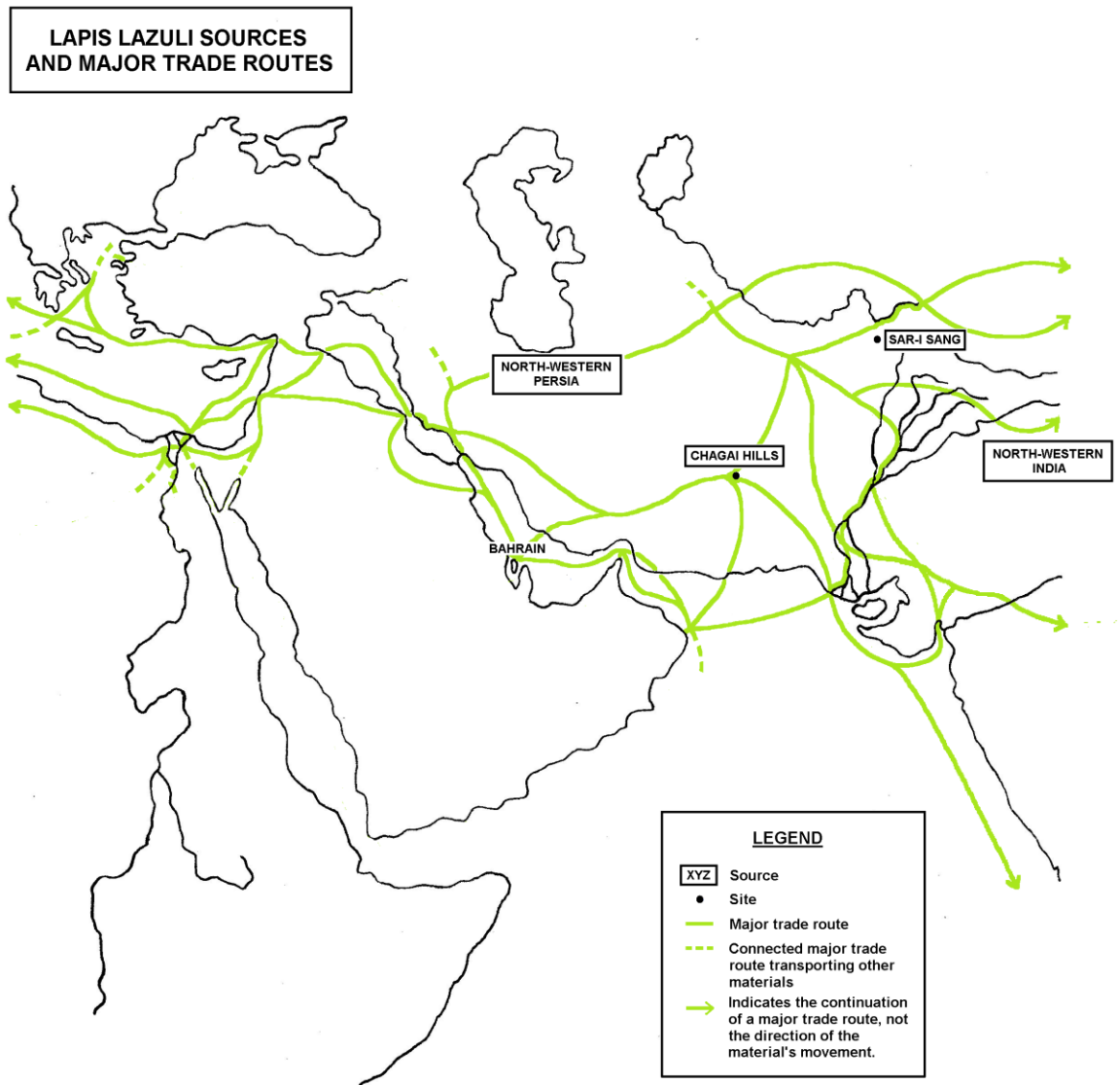
Despite the value placed on lapis lazuli during the 3<sup>rd</sup> millennium BCE, which must have been enhanced by its distant sources as far as Mesopotamia and Dilmun were concerned, something must also be said regarding the commercial implications of the Hamad Town find. The most prominent source of lapis lazuli during the 3<sup>rd</sup> millennium and even in the millennia to follow was the Badakhshan region (specifically Sar-i Sang) of modern-day Afghanistan (see Map 3) (Francis, 2002: 7; Herrmann, 1968: 21-27). A secondary source was also known in the Chagai Hills, located on the border between Afghanistan and Pakistan (Lankton, 2003: 32). There were also sources in north-western India (Beale, 1973: 137). North-western Persia has also been named in 13<sup>th</sup> and 14<sup>th</sup> century CE accounts as a region with veins of lapis lazuli (Beale, 1973: 137; Herrmann, 1968: 27-28). However, it seems unlikely these veins concern us since the accounts not only belong to a much later epoch, but Peter Francis, Jr. also considered a Mazandaran source “unlikely” and any near Azerbaijan or Kerman as short-lived ventures seemingly associated with the time of the texts involved (Francis, 1989: 24; Herrmann, 1968: 27-28). Because Badakhshan and the vicinity of the Chagai Hills were undoubtedly the most renowned sources of lapis lazuli in the Bronze Age and in later periods, we can be certain that this material mostly came from these regions regardless of period.

The lapis lazuli eventually made it to Mesopotamia by means of overland routes through northern and southern Persia, passing along the Great Khurasan Highway close to the Caspian Sea and Tepe Hissar in the case of the former and past Tepe Yahya and Tepe Malyan (which may have been the Aratta of the Enmerkar tale) respectively (Bienkowski and Millard, 2000: 145; Crawford, 2004: 180-181; Herrmann, 1968: 27; Lankton, 2003: 32, 34). The latter route also converged on maritime commercial ones passing through the Arabian Gulf. Along these same routes, steatite could also have arrived in Mesopotamia (as mentioned above). Another route for lapis lazuli headed south from Sar-i Sang towards the Arabian Sea, passing within vicinity of Shahr-i Sokhta (which itself was not far from the Chagai Hills, another source of the material); from the coast, where it intersected a maritime route from India, it took a westerly course through the Straits of Hormuz and along the Gulf to Mesopotamia’s southern ports (Dubin, 2006: 35; Francis, 2002: 7; Lankton, 2003: 32). At least two of the routes mentioned, the last and earlier one through southern Iran, were accessible to Dilmun as a maritime trading culture. Excavations at Shahr-i Sokhta have shown that lapis lazuli was cut

into “blocklets”, which were then either used locally or transported (Foglini and Vidale, 2000: 476; Lankton, 2003: 32).

Many of the Persian sites located along or near the channels transporting lapis lazuli were also working the raw material into beads in the 3<sup>rd</sup> millennium BCE. In Persia, such sites as Tepe Hissar and Shahr-i Sokhta were so involved; in a manner comparable to these, the sites of Sarazm and Shortughai in Central Asia were also inclined to beadmaking (Bienkowski and Millard, 2000: 145, 262; Crawford, 2004: 180-181; Dubin, 2006: 30; Lankton, 2003: 32). There is a strong possibility that the lapis lazuli beads therefore arrived in Dilmun as finished products along the same lines of trade transporting the material to the Arabian Gulf. Once the sites mentioned above were abandoned, similar sites located in much the same regions would have continued to meet the demand for lapis lazuli (and lapis beads) travelling along the ancient commercial routes established for the material.

The exploitation of lapis lazuli and its transportation along the commercial routes mentioned or comparable ones were taking place for millennia prior to the 3<sup>rd</sup> millennium BCE (Lankton, 2003: 32). With the advent of the Early Dilmun period, Bahrain took a central part in what was an already existent commercial structure. In doing so, however, it seems to have appropriated this structure somewhat by establishing itself as a major stopover and middleman in that trade (see Højlund, 2007: 123). Whilst it is not inconceivable that the Period Ib lapis lazuli bead may have arrived in Bahrain from Mesopotamia, owing to contacts between the two, it is much more likely that the bead was brought to the Islands through the maritime routes discussed above.



**Map 3.** Lapis lazuli sources mentioned in the text and the major trade routes that transported the material. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

## **G. The Significance of Lapis Lazuli**

With regard to the significance of lapis lazuli in Mesopotamia, and likely in ancient Dilmun, it has been stated that lapis lazuli “symbolized the beneficent forces of nature and the life force for the Sumerians” and that it “represented the power of the Sumerian gods, who spoke through the beauty of the stone” (Lankton, 2003: 31-32). Apart from its commercial importance, these were but some of the reasons why it held pride of place amongst the Mesopotamian mineral repertoire, even in cultures that succeeded the Sumerians. Bearing this in mind, it becomes understandable why lapis lazuli would find a prominent place in Dilmun (besides the apparent show of wealth). It also becomes understandable why glass would be made to imitate lapis lazuli and appreciated as such in an Early Dilmun “elite” burial (viz. Mound BBM 20709). Perhaps importance was given to blue-green turquoise for much the same reason and this accounts for the preponderance of similarly coloured faience beads in the Bahrain sample (second only to carnelian in the Dilmun era and its subdivisions); for, as we have already noted, faience was regarded as a cheap turquoise imitation quite early on in the history of its use.

The appearance of a lapis lazuli bead (B1479) in Mound 254 of Hamad Town’s area DS3 becomes even more conspicuous, and further light is shed upon the need for glass imitations of lapis lazuli in Mesopotamia and such contexts as Mound BBM 20709, when one considers that despite its precious nature, there was a shortage in the availability of the material that began towards the end of the 3<sup>rd</sup> millennium BCE (see Lankton, 2003: 40). The two Bahraini cases, of an actual lapis lazuli bead and an imitation, from this time indicate both Dilmun’s wealth and commercial reach (in terms of the former) and its participation in the commercial fortunes of Mesopotamia.

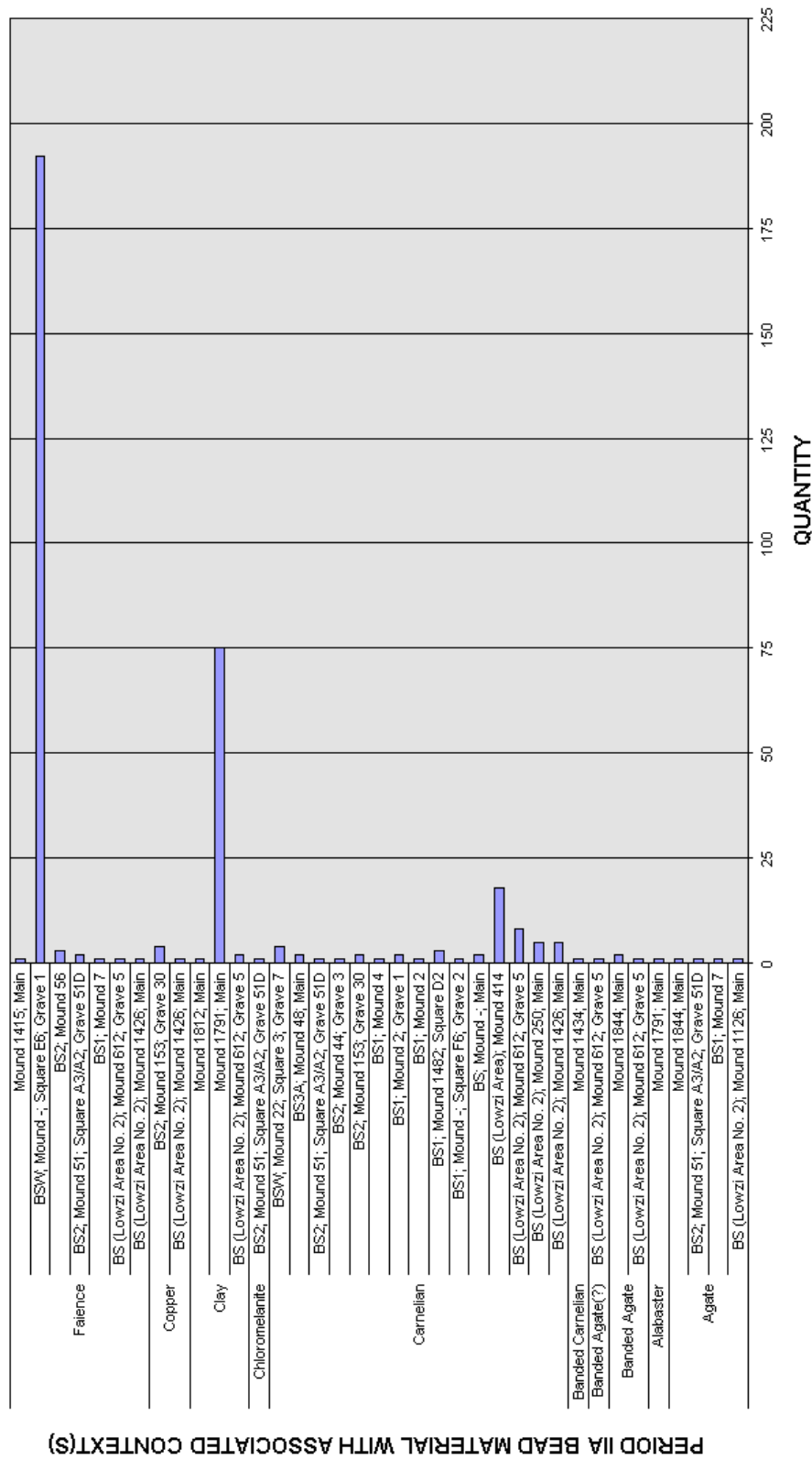
The lapis lazuli shortage also accounts for the greater number of carnelian beads in both Periods Ib and IIa on Bahrain; for carnelian, whilst similarly though slightly less valued than lapis lazuli in the Near East during the 3<sup>rd</sup> and 2<sup>nd</sup> millennia BCE, did not suffer such a shortage. The discrepancy in numbers between the two highly valued materials can thus be explained.

## **Period IIa**

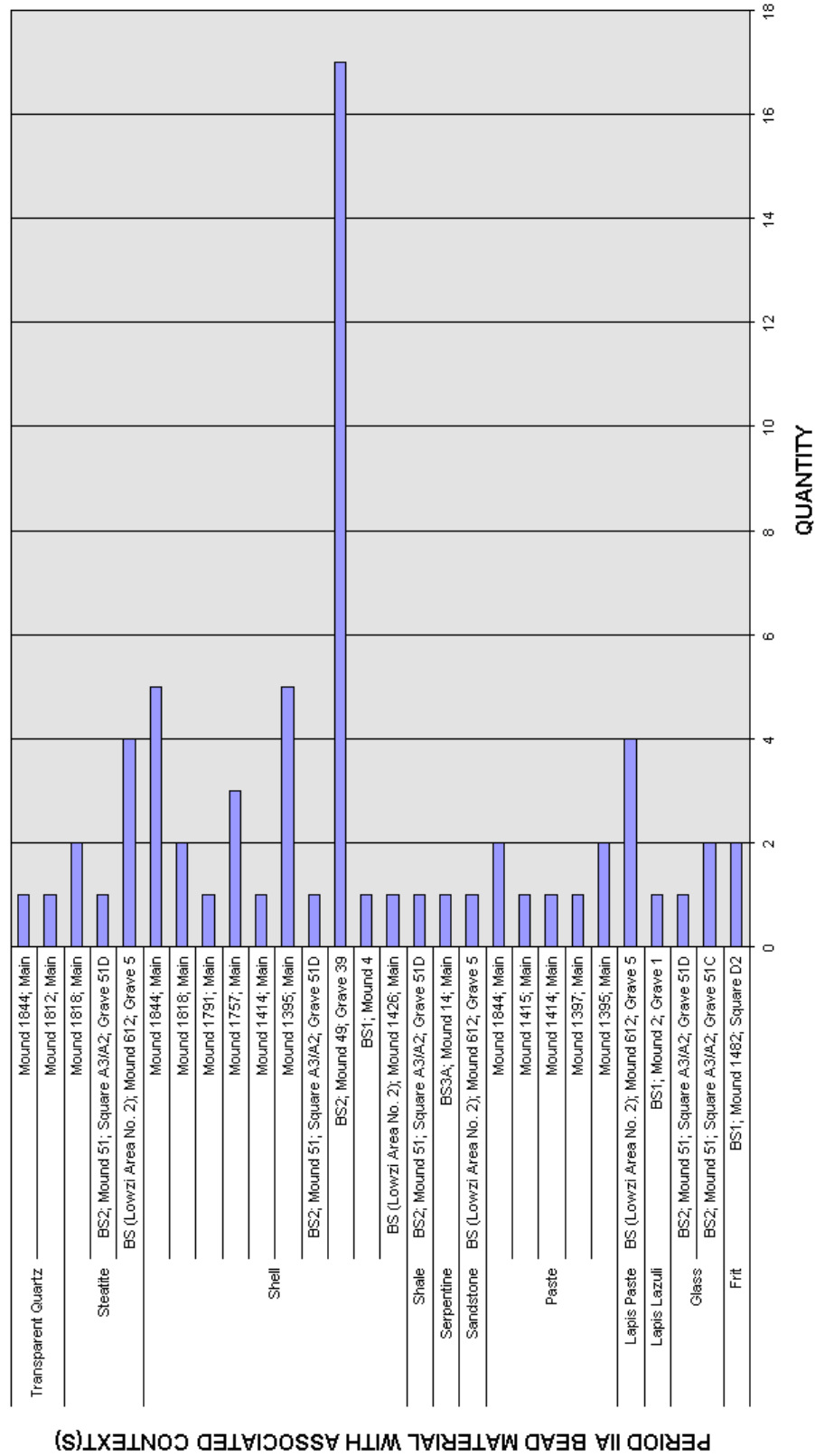
### **A. A Greater Diversity of Bead Materials and the Site of Hamad Town**

Whilst Bahrain, as Dilmun, seems to have followed the general trends that held sway in Mesopotamia during Period I, it had also begun to assume an importance in the maritime trade of the region. Indications of this exist in the form of particular bead materials testifying to such commercial involvement and reach, particularly at the urban site of Qala'at al-Bahrain as well as some Early Type tumuli located further south at Hamad Town and Wadi as-Sail. At the start of Period II, however, the significant boom in both the number of bead materials encountered and the numbers attributed to each of these, not necessarily at all sites but certainly across Bahrain and for the most part, reveal an unprecedented expansion of this involvement and reach.

A great many of the beads associated with Period IIa belong to a IIa-c chronological range which, it must be pointed out, do impinge somewhat upon (and must surely increase) the actual quantities belonging to the IIa subdivision proper. However, taking only those beads securely dated to the IIa subdivision, four sites concern us. The first of these is Hamad Town, which has already provided us with some significant Period Ib bead materials. In IIa, it was one of eight Late Type Mound cemeteries that developed on Bahrain in relation not only to economic development but the establishment of a particular Dilmun identity and social hierarchy - indeed, the beginnings of an Early Dilmun state – that made such development possible (see Højlund, 2007: 18, 129). The increase to 20 different IIa bead materials at Hamad Town, compared to the earlier Ib quantity, makes such development apparent (see Figs. 31a-31b).



**Fig. 31a.** First part of a breakdown of bead quantities representing Period Ila materials at the site of Hamad Town along with associated contexts. The questionable attribution of banded agate has been treated as distinct from its confirmed counterpart. Beads B1567 to B1581, B1585 to B1588, and B1592 and B1593 are not taken into account in this graph since they could belong to a chronological epoch other than Period Ila. It should be noted that this graph only takes into account those beads specifically assigned to the Ila chronological subdivision.



**Fig. 31b.** Second part of a breakdown of bead quantities representing Period Ila materials at the site of Hamad Town along with associated contexts. Beads B1582 to B1584 and beads B1589 to B1591 are not taken into account in this graph since they could belong to a chronological epoch other than Period Ila. It should be noted that this graph only takes into account those beads specifically assigned to the Ila chronological subdivision.

## **B. Hamad Town's Most Visible IIA Bead Materials: Carnelian, Clay, and Faience**

Whilst some of the Period Ib materials still featured in IIA, there are others that newly entered the funerary assemblage from Hamad Town as per the Bahrain sample. Non-banded carnelian went up to 56 cases in the sample, in comparison with specimens from the earlier epoch (see Fig. 31a). But carnelian was outnumbered at Hamad Town in Period IIA by clay beads (78 cases), and even more so by faience (201 cases), which became the most numerous material. Inferences can be drawn from these values, particularly when compared to Period Ib and the IIA-c chronological subdivision.

The amount of carnelian beads certainly increased in IIA and remained higher than in Ib throughout the rest of Early Dilmun and for most of Bahrain's past as indicated by our bead sample (excepting the Middle Dilmun period). This reflects the new level of social complexity exhibited by Dilmun in Period II, and particularly the IIA subdivision, as well as the economic means attending such complexity (see Højlund, 2007: 124-125). It is this which made the burgeoning of the commercial site of Qala'at al-Bahrain, the appearance of other settlement sites such as Saar, and the solidification of Dilmun's burial culture into eight cemeteries and several other funerary sites possible (see Højlund, 2007: 124-125, 129). Naturally, greater wealth and economic means may be associated with such complexity, making carnelian and other highly prized materials more available. But a weightier connection with the Indus is not altogether irrelevant either.

Indeed, the connection between Dilmun and the Indus was strengthened during Period IIA. This has been observed with regard to choosing stamp as opposed to cylinder seals when such things were being "institutionalized" in Dilmun at this time (Højlund, 2007: 125). The existence of a group of IIA seals that are especially "Indus" in their icons as well as Indus script appearing on other Bahraini seals further support the influence of Harappan culture on Dilmun at this time (During Caspers, 1979: 126; Højlund, 2007: 125; Kjaerum, 1994: 322-323, 344; Parpola, 1994: 309-310). The prevalence of trade with the Indus finds evidence in Dilmun's adoption of Indus weight measures and shapes and urban planning at Qala'at al-Bahrain that is reminiscent of Indus cities (During Caspers, 1979: 125-126; Højlund, 2007: 125; Rao, 1986: 379; Potts, 1990: 187-188). It is therefore no coincidence that the cuneiform textual reference to Indus carnelian being brought to Dilmun in the "Enki and Ninhurzag" myth belongs to a time synonymous with Period IIA on Bahrain (see André-Salvini, 2000: 29).



But whilst a growing relationship with the Indus explains the abundance of carnelian in Period IIa, the markets carnelian beads were destined for were partly local and partly situated in Mesopotamia. An understanding of this is implied by the “Enki and Ninhurzag” cuneiform reference (49A-49P). Moreover, as was shown in the previous chapter, evidence of Mesopotamian influence was just as prevalent in Dilmun as that of Indus culture in Period IIa. In Ib, Dilmun already exhibited an appreciation for carnelian and lapis lazuli (and even faience) that paralleled its northern neighbour. In IIa and thereafter, such appreciation appears to have been an ongoing feature of Dilmun culture and the luxuries enjoyed by the wealthy. It is this which must account in some additional measure for the increase in carnelian specimens in IIa as opposed to Ib.

It also bears heavily on the increase in faience numbers in Period IIa. Faience was a mark of prestige in the earlier epoch in Mesopotamia and Dilmun, and it appears this was still somewhat the case in IIa. For at this chronological stage, with increased social complexity and the attendant wealth, a comparable increase in faience quantities occurred. Having been thus bound to Dilmun’s growing fortunes, faience can be taken as an indication of such growth and still held “prestige” status in IIa. However, it never came close to overtaking carnelian, despite the false impression gleaned from the IIa Hamad Town beads. The reason faience appears to outnumber carnelian is because of a sizable amount coming from a single context: Grave 1 of Square E6 in an unrecorded Late Type mound from Hamad Town’s BSW area (see Fig. 31a). This grave produced 192 of the 201 faience bead total from Hamad Town; a fact more indicative of that particular burial than faience in Period IIa. A similar situation accounts for the great clay bead numbers, also outnumbering carnelian at Hamad Town but once again only doing so in our eyes because the majority of our Bahrain sample specimens (75 out of 78) were obtained from a single burial (Mound 1791) (see Fig. 31a).

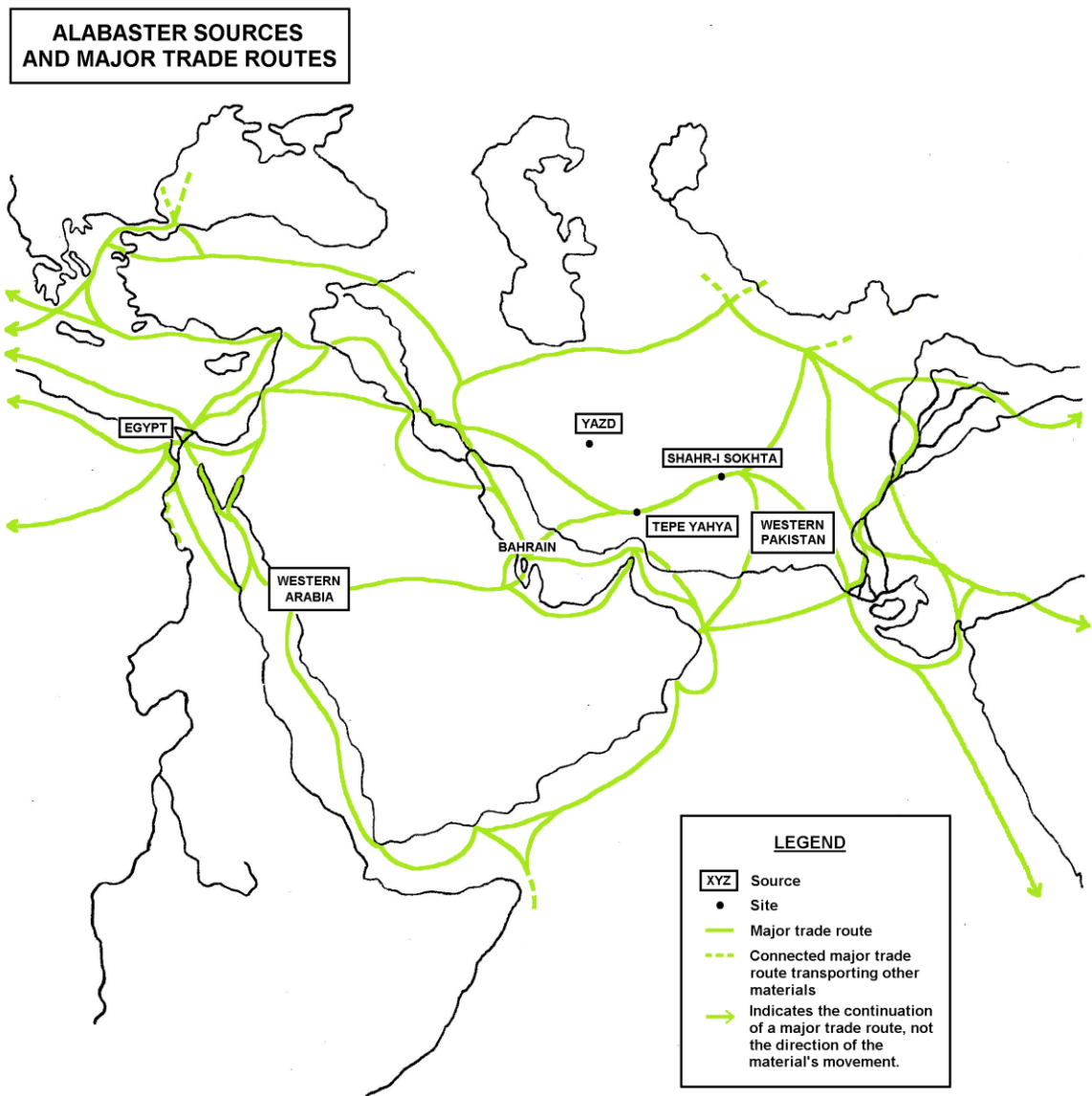
### **C. Other Materials Noted Amongst the IIa Beads from Hamad Town**

In addition to carnelian, clay, and faience, the increased range of Hamad Town bead materials in Period IIa in the Bahrain sample include such substances as alabaster, chloromelanite, copper, paste, sandstone, serpentine, shale, and transparent quartz (rock crystal) (see Figs. 31a-31b). Some of these, such as sandstone and shale, are hardly of any value. Others, such as alabaster, copper, serpentine, and transparent quartz provide further support for Dilmun’s commercial role in IIa. Whilst it certainly partook in the trade networks

stretching between Mesopotamia, mainland Arabia, Persia, and the Indus in Period I, in Period IIa its participation in the networks seems more exemplified.

Some of the same materials that were present in Ib (such as glass and lapis lazuli) still made an appearance in IIa. But with alabaster (which is a type of gypsum), a connection with Egypt may be implied, or rather (and more probably, owing to distance) with Persia, where it is “widely found”, particularly within vicinity of Tepe Yahya and the regions associated with Yazd and Shahr-i Sokhta respectively (Beale, 1973: 136). All these areas were also either associated with the lapis lazuli trade or were en route along commercial trails transporting lapis. A connection with the steatite trade and its routes may also be postulated with regard to Tepe Yahya (see Bienkowski and Millard, 2000: 325; Crawford, 1998: 46). The transportation of lapis lazuli and steatite could well have also brought alabaster to Dilmun.

Alabaster is also abundant in the western parts of Pakistan and the Arabian Peninsula (see Map 4) (Beale, 1973: 136). Thus the routes through Persia already mentioned could have also provided the same, or else Dilmun could have directly obtained it from the mainland. Since alabaster was employed for vessels and beads in other contemporary cultures in the Near East, and is hardly found in the Bahrain sample (e.g. only a single alabaster bead can be assigned to IIa: the one from Hamad Town), it seems that the material was not easily procurable by Dilmun or else not favoured for beads. Perhaps a nearby source such as the Arabian mainland had not yet been discovered, or was inaccessible. If such were the case, Persia, where it is commonly found, would likely have been the source of alabaster for Dilmun, as has already been mentioned. The low alabaster content of the Bahrain sample, however, seems to indicate that where Persia was involved, higher value goods such as lapis lazuli and steatite were the chief concern rather than a form of gypsum.



**Map 4.** Alabaster sources mentioned in the text and the major trade routes that transported the material. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

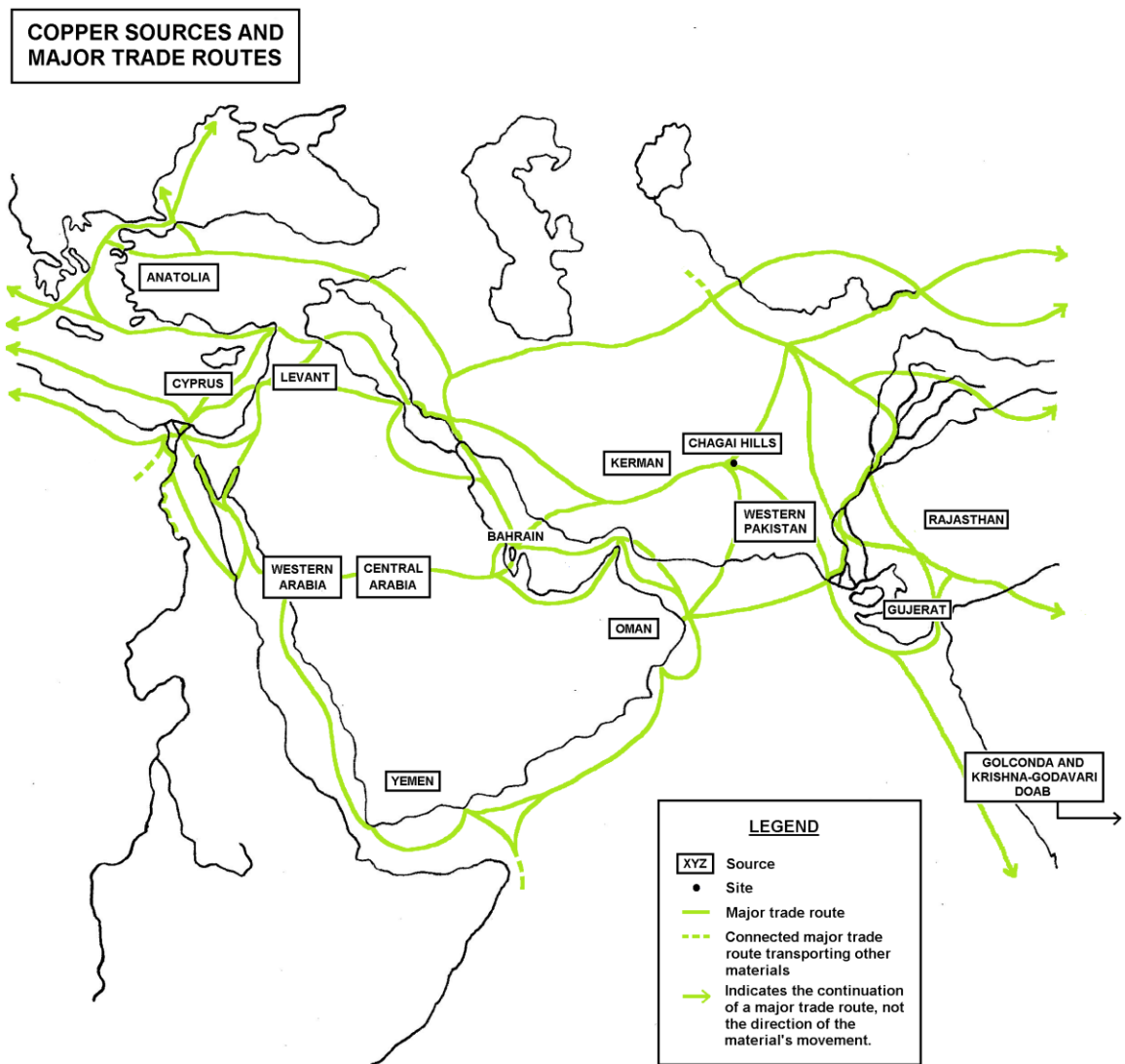
Sources for minerals such as serpentine and transparent quartz (indicated at Hamad Town by a single bead and by two respectively) should be sought in the Indus. Transparent quartz is found in the Deccan Plateau (Francis, 1991: 36; Francis, 2002: 103). It is also found near Kodumanal, in South India (Francis, 2002: 116-117, 121). These materials would have been obtainable through the maritime trade between Dilmun and the Indus, and act as a further indication of the ties that existed between the two.

Copper was used for making beads and drills in Mesopotamia long before the rise of Bahrain's Early Dilmun period (Diamanti, 2003: 17-18, 26, 35-37). Sites in regions as far apart as Anatolia and Pakistan have exhibited beads of copper since at least the 7<sup>th</sup> millennium BCE (Lankton, 2003: 37). The earliest copper beads in the Bahrain sample, however, derive from Period IIa; specifically, from the site of Hamad Town (see Pl. I).



**Pl. I.** Four copper beads from a Period IIa burial (Mound 153's Grave 30) in Hamad Town's BS2 area. Two etched carnelian specimens (top left) also accompany them, having been recovered from the same burial.

A number of regions accessible to Dilmun possessed copper (see Map 5). Prominent sources include the Kerman area of Persia, which Dilmun could have drawn from via the trade routes through Persia already described above, as well as Anatolia and Cyprus (Beale, 1973: 137, 142; Bienkowski and Millard, 2000: 79; Potts, 1986: 391, 396; Weisgerber, 1986: 139). The Chagai Hills, already mentioned in connection with lapis lazuli, were also rich in copper, and trade routes transporting the former could have also brought the latter to Bahrain (Carter, 2003: 37). Western Pakistan also possessed copper, and the Golconda and Krishna-Godavari doab regions of South India contained important deposits of the mineral (Beale, 1973: 137; Francis, 2002: 118). The copper mines of India as a whole were renowned in the 12<sup>th</sup> century CE (Goitein, 1980: 46). Some of them (such as those in Gujarat and Rajasthan) were certainly exploited in the more distant past and have been put forward as possible sources (along with Persian ones) for certain copper items found at the Saar Settlement (Carter, 2003: 37-38, Fig. 3; Laursen, 2009: 136). Moreover, we have references to copper being “purified” and “exported” from Lothal in Harappan times (Rao, 1986: 379-380). It has already been suggested that this may have been the “good copper” associated with Dilmun and mentioned in Mesopotamian commercial texts (Rao, 1986: 380). Copper also existed in the central and western parts of the Arabian Peninsula and in Yemen, all well within the reach of Dilmun; the sources in Yemen were particularly prominent in Sasanian times and up to the 9<sup>th</sup> century CE, but were known in the Bronze Age as well (Morony, 2004: 184). The Levant also had sources of the metal (Bienkowski and Millard, 2000: 79). However, it is Oman which was the most important source of copper in the Arabian Gulf in the 3<sup>rd</sup> and 2<sup>nd</sup> millennia BCE as well as in later times (Bibby, 1996: 158-159; Bienkowski and Millard, 2000: 79, 218; Carter, 2003: 37; Morony, 2004: 184).



**Map 5.** Copper sources mentioned in the text and the major trade routes that transported the material. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

Beginning around 2000 BCE, if not earlier, Dilmun seems to have taken centre stage in the transportation of copper to Mesopotamia (Carter, 2003: 31, 37; Cleuziou, 1986: 154; Crawford, 1998: 152; Weisgerber, 1986: 138-139). The observation that much of this copper was of Omani origin can little be disputed, particularly in view of Oman's reputation as a provider of copper and epigraphic evidence in support of it (see Bibby, 1996: 158-159; Carter, 2003: 37). Chemical analysis of copper ingots from Bahrain has not contradicted such a possibility (Hauptmann, 1994: 381). It has even supported it in the case of Period Ib copper fragments found at Qala'at al-Bahrain (Crawford, 1998: 99; Northover, 1994: 375). Dilmun pottery has been encountered at Tell Abraq and the southern coast of Oman (Crawford, 1998: 152). Wadi Suq pottery, reflecting the culture then present on the Oman Peninsula, has also been recovered from Bahrain (Crawford, 1998: 152). Copper spearheads comparable to items found in Oman have also been uncovered in early 2<sup>nd</sup> millennium BCE contexts in Bahrain (Cleuziou, 1986: 150-151). It seems therefore likely that the copper used for the Ila beads in the Bahrain sample came from Oman, as part of the commercial mechanism that was then present in transporting it to Mesopotamia.

A single Ila bead of lapis lazuli (B1624) in the Bahrain sample, excavated at Hamad Town, acts as evidence of the continued down-the-line arrival of the mineral from Badakhshan and perhaps from near the Chagai Hills (see Fig. 31b). Again, we have only a single specimen, an indication of the ongoing shortage of lapis lazuli that began in the late 3<sup>rd</sup> millennium BCE. It does seem, though, that lapis lazuli upheld its reputation as a desirable material, despite the shortage. And this may account for the introduction into the Bahrain sample at this point, amongst the Period Ila specimens, of beads made of lapis paste, probably as a cheaper alternative to ornaments made purely of lapis lazuli. The components involved in lapis paste allowed for more beads to be produced at a lower cost, thus being more economically feasible whilst still meeting the demand for lapis lazuli. Four such lapis paste beads have been recovered from Hamad Town. We also have beads made of a more generic variety of paste appearing in Ila, with seven cases from Hamad Town.

Whilst the trade routes bringing lapis lazuli to Dilmun through Persia continued to be active in Ila, steatite continued to travel along the same channels. Seven steatite beads have been recovered from Ila contexts within Hamad Town.

Shell, however, features prominently amongst Ila beads from the cemetery with 37 cases (see Fig. 31b). This is only natural, given the organic material's availability, particularly to a maritime commercial culture such as Dilmun. Varieties of *Dentalium* and *Conus* form the

majority of shell beads in the Bahrain sample. Whilst these were and still are available from many different locales accessible to ancient Dilmun, there is no reason to look afar for something that is locally present (see Beale, 1973: 137; Diamanti, 2003: 11; Green, 1994: 14-15, 68). Thus it is safe to assume a local source in the waters around Bahrain for most of the shell beads in the Bahrain sample, regardless of the period to which a particular specimen belongs; this includes the 4<sup>th</sup> millennium BCE examples referred to above.

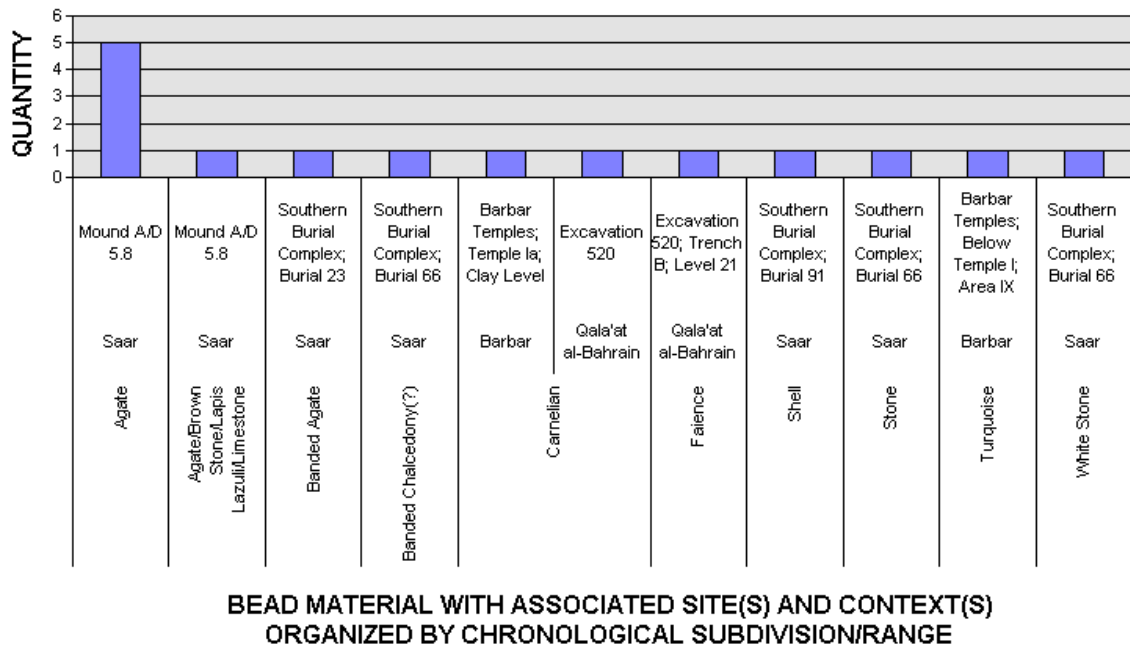
#### **D. Economic Implications of the Ila Bead Materials from Qala'at al-Bahrain and Saar**

The Period Ila beads from Hamad Town, as a whole, stand as evidence for Bahrain's prosperity at a time when Dilmun was reorganizing itself into a state and development on the social level was supported by similar development economically. Trade links, and an involvement in commercial networks, present since Period I, become more visible in the archaeological record of Ila and Period II in its entirety. Greater diversity in bead materials and increasing numbers of materials earlier exploited bring to mind this visibility. Qala'at al-Bahrain only produced single carnelian and faience examples that can securely be dated to Ila, and these likely followed the trends described above with regard to such materials (see Fig. 32). However, a far greater quantity of beads from Qala'at fall into a Ila-c chronological range, and many of these must surely include Ila cases that would further augment our understanding of the role the urban site played at this time. However, until more precise dating of these specimens becomes possible, it is unlikely that they will shed light on Ila for us.

The forming of eight definite cemeteries containing Late Type tumuli in Period Ila finds evidence in the use of such sites as Saar for burial (see Højlund, 2007: 18, 129). Like Hamad Town, many interments at Saar have been identified as specifically Ila (see Højlund, 2007: 37-47). However, information on some of the bead materials associated with ornaments deposited in these graves has been unclear. Those that have been identified include agate, banded agate, banded chalcedony of a general variety, and shell (see Fig. 32). These materials have already been discussed with regard to Hamad Town. One observation that can be added at this point is that the Saar Settlement, which first appeared in Period Ila and almost certainly furnished the dead for burials within its vicinity, partook of the bounties derived from the Indus from the very start of its existence (viz. agates and the like). We may therefore observe that the benefits brought to Dilmun by international trade were accorded across Bahrain rather



than restricted to a particular locale. Certain groups, more directly involved in the trade, would likely have benefited to a greater degree; but abundance seems to have been destined for all.



**Fig. 32.** Breakdown of bead quantities representing Period Ila materials at sites other than Hamad Town along with associated contexts. Beads B4115, B4116, and B4117 are not taken into account in this graph since they could belong to a chronological epoch other than Period Ila. It should be noted that this graph only takes into account those beads specifically assigned to the Ila chronological subdivision.

### **E. B595 from Barbar and the Importance of Turquoise**

At this point, it is useful to add that though turquoise has already been mentioned in association with faience, the recovery of an actual turquoise bead (B595) belonging to Period Ila at the site of the Barbar Temples is significant (see Fig. 32). Turquoise was long a dearly sought material in the Near East. In the 3<sup>rd</sup> millennium BCE, it was held in high regard, though seemingly not as much as lapis lazuli (Lamberg-Karlovsky, 1997: 91; Lankton, 2003: 46). However, unlike lapis lazuli, which was more easily accessible (excepting the shortage at the end of the millennium), turquoise was already rare in the Near East at that time (Lankton, 2003: 23, 33, 45). To this end, early faience became an alternative and continued to be so for

some time. But true turquoise was still a prize to be acquired where possible. This state of affairs, encapsulated by the rarity and high desirability of turquoise, continued into the 2<sup>nd</sup> millennium BCE (Lankton, 2003: 39).

Turquoise had sources in Central Asia (in the Kyzyl Kum desert) and in the north-eastern parts of Persia (Dubin, 2006: 35; Lankton, 2003: 23). Ancient mines existed in the area where Nishapur would later be constructed (Beale, 1973: 137; Hole and Flannery, 1968: 179; Wright, 1969: 55). The turquoise mines of Kerman were also well known in ancient times (Beale, 1973: 137). Pliny the Elder, moreover, made reference to them at a time contemporary with Tylos (Beale, 1973: 137). Other ancient turquoise-producing sites existed near Yazd and Tell Iblis (Beale, 1973: 137; Pogue, 1915: 40). Sources for this mineral in Egypt, in the Sinai region, were also exploited (Dubin, 2006: 35).

Despite all these sources and continued demand, it seems that the turquoise trade dried up in the 3<sup>rd</sup> millennium BCE. Egypt was the only land that was unaffected (Lankton, 2003: 45). The trade routes passing through Persia to Mesopotamia or to the coast, and the Central Asian ones that led to the sea, did not avail in alleviating the shortage of turquoise. Other means were sought, and faience (for instance) looked to. Some turquoise, nonetheless, did trickle into Near Eastern trade, but would have been very expensive at a time when demand was high and availability was low.

Such turquoise did arrive in Dilmun, it seems. The bead, excavated from beneath Temple I at Barbar, stands as proof of this (see Højlund, 2003c: 316-317, Fig. 817). It is a remarkable indication not only of the wealth of Dilmun at this time, but also its continued participation in networks that made access to turquoise still possible. The material likely arrived in Dilmun by sea routes bringing it from sites in Persia or Central Asia; the lapis lazuli and steatite routes through Persia may be partly responsible, but at the end it was Dilmun's maritime role and its reputation as an emporium that secured the material.

## **Period IIb**

### **A. IIb Bead Materials and the Site of Qala'at al-Bahrain**

Dilmun continued to experience growth, both on the social and economic fronts, as it entered Period IIb. As a culture, expansion occurred throughout Dilmun, with visible transformations shaping Qala'at al-Bahrain and Barbar, leading to further development of the

tumuli cemeteries, and the establishment of the colony on Failaka (Højlund, 2007: 125). Several beads, securely dated to I Ib, have been recovered from Qala'at al-Bahrain (see Fig. 33) (see Højlund, 1994c: 392). Ten carnelian specimens alongside single beads of agate and faience permit us to note Mesopotamian tendencies as having continued in Dilmun. The materials certainly cater to the tastes that were prevalent throughout the region, in Mesopotamia and Syria for instance. Even with faience, its appreciation as an imitation of turquoise seems to have persisted in Dilmun, as in Mesopotamia; though a single bead from Qala'at may not seem proof enough of this, when one considers the 70 I Ib-c beads from Hamad Town (see appropriate section below), outnumbering carnelian at the site and indeed at any other in that chronological range, such persistence becomes clear.

### **B. I Ib Bead Materials and the Site of Barbar**

From Temple II at Barbar, Period I Ib has provided three beads (B594, B596, and B604) that can be securely dated to it; amongst the materials of these specimens, we find lapis lazuli and a tin alloy (see Fig. 33) (see Højlund, 2003b: 275, Fig. 726; Højlund, 2003c: 316-317, Fig. 815, Fig. 820). We therefore find that much the same international trade contacts already discussed with regard to I Ia continue on in I Ib, but gain further evidence at a site of worship.



The I Ib tin alloy bead (B604) from Barbar is particularly important in that, as with the trade routes transporting lapis lazuli and the sources of steatite, an association with Persia once more becomes evident. During Period I Ib, Dilmun was in contact with the kingdom of Elam (Van De Mieroop, 2007: 103). The presence of Dilmun seals, tablets mentioning Dilmunites, and a temple to Inzak, the patron god of Dilmun, at Susa seem sufficient proof of this (Amiet, 1986: 265-268; Crawford, 1998: 79, 93, 156; Petrie, Chaverdi, and Seyedin, 2005: 82; Potts, 1990: 226-227). Susa was, during Dilmun's Period I Ib, part of the Elamite kingdom (Petrie, Chaverdi, and Seyedin, 2005; Van De Mieroop, 2007: 101). This kingdom controlled the sources of tin in Persia, which were renowned at that time in the Near East, and the degree of the material's availability in Mesopotamia (Van De Mieroop, 2007: 103). Susa itself seems to have been a place of "dispatch" for tin derived from Persian sources and, possibly, Afghan ones (see Bienkowski and Millard, 2000: 292; Lamberg-Karlovsky, 1997: 97). Assur particularly benefited from this trade, and caravans transporting Persian tin (150 lb. per load) and textiles produced in either Assur or Babylonia frequently made commercial exchanges for goods available in Syria (Van De Mieroop, 2007: 95). The arrival of 100 tons of Persian tin within a space of 40-50 years at Kanesh, originally an Assyrian colony but later dominated by other ethnic groups, stands as a remarkable testimony of this trade (Bienkowski and Millard, 2000: 292; Van De Mieroop, 2007: 95, 97).

The tin employed in the alloy bead from Barbar could certainly have arrived from Assur, which controlled the trade in southern Mesopotamia at this time. This is quite possible given the importance such trade would have had to the Syrian Amorites, who had overrun much of the Near East by the beginning of the 2<sup>nd</sup> millennium BCE and whose influence was felt in Dilmun (see Højlund, 2007: 126; Howard-Carter, 1987: 63-64, 107; Potts, 1986: 389-391, 397-398; Potts, 1990: 218-219). Nonetheless, owing to Dilmun's connection with maritime routes and the transportation of lapis lazuli and steatite, it is far more probable that the tin was picked off by Bahrain directly from the lines of trade rather than through the medium of its northern neighbour. Moreover, Dilmun may have been a major provider of tin to Mesopotamia (and so Assur) rather than vice versa; its connections with Elam emphasize this. The suggestion has been made that Persian tin was actually transported from the lower reaches of the Arabian Gulf to Dilmun rather than directly through southern Persia (Crawford, 1998: 153). However, tin could have easily passed through south-eastern Persia (rather than southern Persia proper) to the coastal areas on the Arabian Sea, following such a route used for lapis lazuli and steatite, and transported by ship from these into the Gulf and to Dilmun.

### **C. I Ib Bead Materials and the Site of Saar**

Five carnelian beads and one banded carnelian case from Period I Ib Saar follow their counterparts from I Ia (see Fig. 33) (see Moon, 2005: 182, Fig. 5.9). What is special about these is that they came to the Bahrain sample from the Saar Settlement as opposed to burials (compared to the I Ia Saar beads). The lack of I Ia beads from the Settlement is certainly due to very little work having been done on levels belonging to it by the London-Bahrain Archaeological Expedition, which has provided the bulk of the Settlement's beads in the sample (Killick, 2005: 7). Nonetheless, what can be extrapolated from the I Ib beads is that the Saar Settlement enjoyed the commercial prosperity of this period, which likely led to its rise in Period I Ia. Carnelian is a clear evidence of this, though the lack of faience or small amount (considering a I Ib-c chronological range – see the appropriate section below) is peculiar and worth returning to.

There is also a I Ib jasper bead (B654) from the Saar Settlement that was excavated in Building 207, Area 273 (see Fig. 33) (see Moon, 2005: 182, Fig. 5.9). Jasper was used by Harappan craftsmen both to produce beads and drills for perforating softer stones (such as lapis lazuli and turquoise) (Diamanti, 2003: 17; Francis, 2002: 103). Major deposits of the stone existed in South India (Francis, 2002: 123). This material has been noted as part of the trade between the Indus and Mesopotamia in the 3<sup>rd</sup> millennium BCE (Lankton, 2003: 35). It certainly continued to be so transported during the 2<sup>nd</sup> millennium BCE, and at this time Dilmun would have been a prime mover of the material to its northern neighbour. The jasper bead from Saar seems to have arrived on Bahrain as part of this trade. It thus acts as a further material witness to the contact between Dilmun and the Indus during Period I Ib. It was a contact which certainly persisted for sometime, though already at this stage it was in evident decline as Dilmun, from its earliest days a commercial provider for Mesopotamia, turned its gaze even further towards the north (Højlund, 2007: 125-126).

## **Period IIc**

### **A. Period IIc Bead Materials from Qala'at al-Bahrain and Barbar**

Only 48 beads have been specifically dated to Period IIc; that is, to this subdivision of Period II and not as part of a chronological range. They represent 13 identified materials (and an unidentified one of the mineral variety as well as a case that could be either of black agate or obsidian) from three sites: Qala'at al-Bahrain, Barbar, and Saar (see Fig. 34).

From Qala'at al-Bahrain, we have five single beads from the Danish Expedition's Excavation 520 (at least four of which have been recovered from Trench B), each of a different material: carnelian, clay, faience, glass, and steatite (see Højlund, 1994c: 392-393, Figs. 1962-1968). The same mercantile connections hitherto visible in Periods IIa and IIb thus continued at Qala'at in IIc. The beads certainly represent a decrease in numbers, both of specimens and materials, at Qala'at compared to IIb; but this seems to have been the tendency with finds in general at the site (see Højlund, 2007: 127). Of course, incorporating chronological ranges such as IIa-c or IIb-c certainly aids the numbers; however, it is probably not far off for us to consider, on the basis of the previous chapter, the beginnings of a decline occurring at some point in Period IIc. The single glass bead from Qala'at (B363) is the only specimen that can be dated specifically to IIc (and not a chronological range involving it) in the entire Bahrain sample.

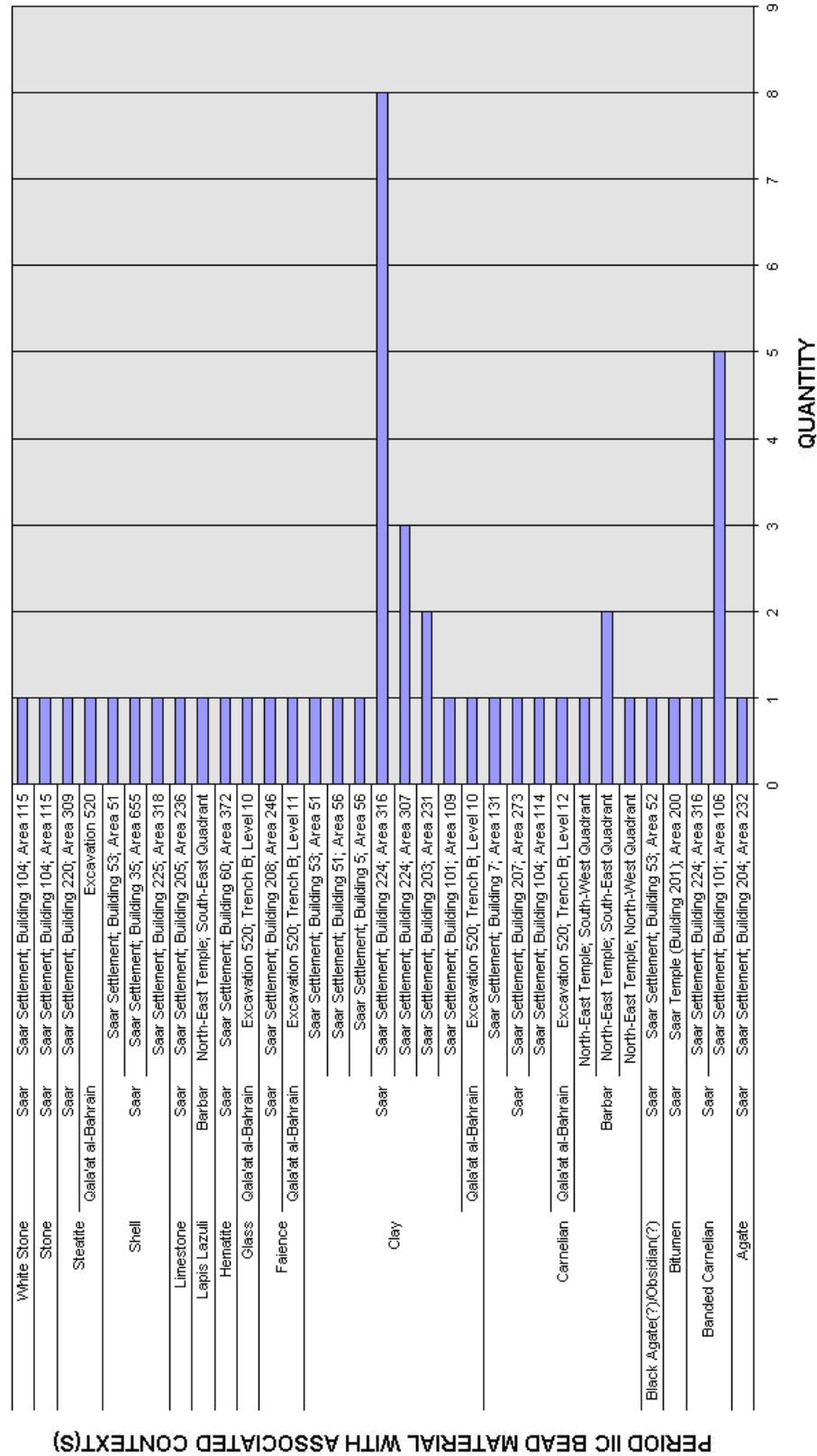
Only five specifically IIc beads have been noted from Barbar, all from the North-East Temple at the site (see Fig. 34) (see Højlund, 2003c: 316-317, Figs. 823-827). All carnelian beads, with one exception of lapis lazuli (B599), they seem to emphasize two of the most important bead materials of the ancient Near East, as these have been identified by James Lankton (see 2003: 31-33, 39).

### **B. Period IIc Bitumen and Hematite from Saar**

Saar's IIc beads represent twelve distinct materials (if we include the black agate/obsidian case mentioned above), all having been derived from the Settlement (see Fig. 34) (see Moon, 2005: 182-187). Most of these materials have been recovered in only single cases (as far as the "definitely IIc" sample goes). Despite this, particular materials appear that did not amongst beads attributed to earlier Dilmun periods. Bitumen, for instance, appears as

a rather cheaply produced bead (B615) excavated from the Saar Temple (Moon, 1997: 63). Chemical analysis of bitumen from the Saar Settlement has shown that the material likely came from a source in Khuzestan, again emphasizing trade links with Persia (Moon, 1997: 61). Other bitumen deposits, accessible to Dilmun, existed in Mesopotamia and were exploited for millennia, being known even in the Roman era (see Crawford, 2000: 75).





**Fig. 34.** Bead quantities representing specifically Period IIC materials in the Bahrain sample along with associated sites and contexts. Beads B1567 to B1593 as well as beads B4115, B4116, and B4117 are not taken into account in this graph, since they could belong to a chronological epoch other than Period IIC. It should be noted that this graph only takes into account those beads specifically assigned to the IIC chronological subdivision.

A single bead of hematite (B651) from Building 60, Area 372, at the Saar Settlement may indicate connections with the Arabian Peninsula, where this material had deposits, or with neighbouring regions similarly endowed (see Insoll, 2005: 294; Moon, 2005: 182-183). Since hematite inclusions (alongside iron) have been suggested as a factor important to the reddening of carnelian, it is safe to assume that the mineral must also exist in many of the regions noted for the latter (see Diamanti, 2003: 18). The Indus, of course, stands out (as has been emphasized), though other carnelian-rich areas accessible to Dilmun have also been suggested above.

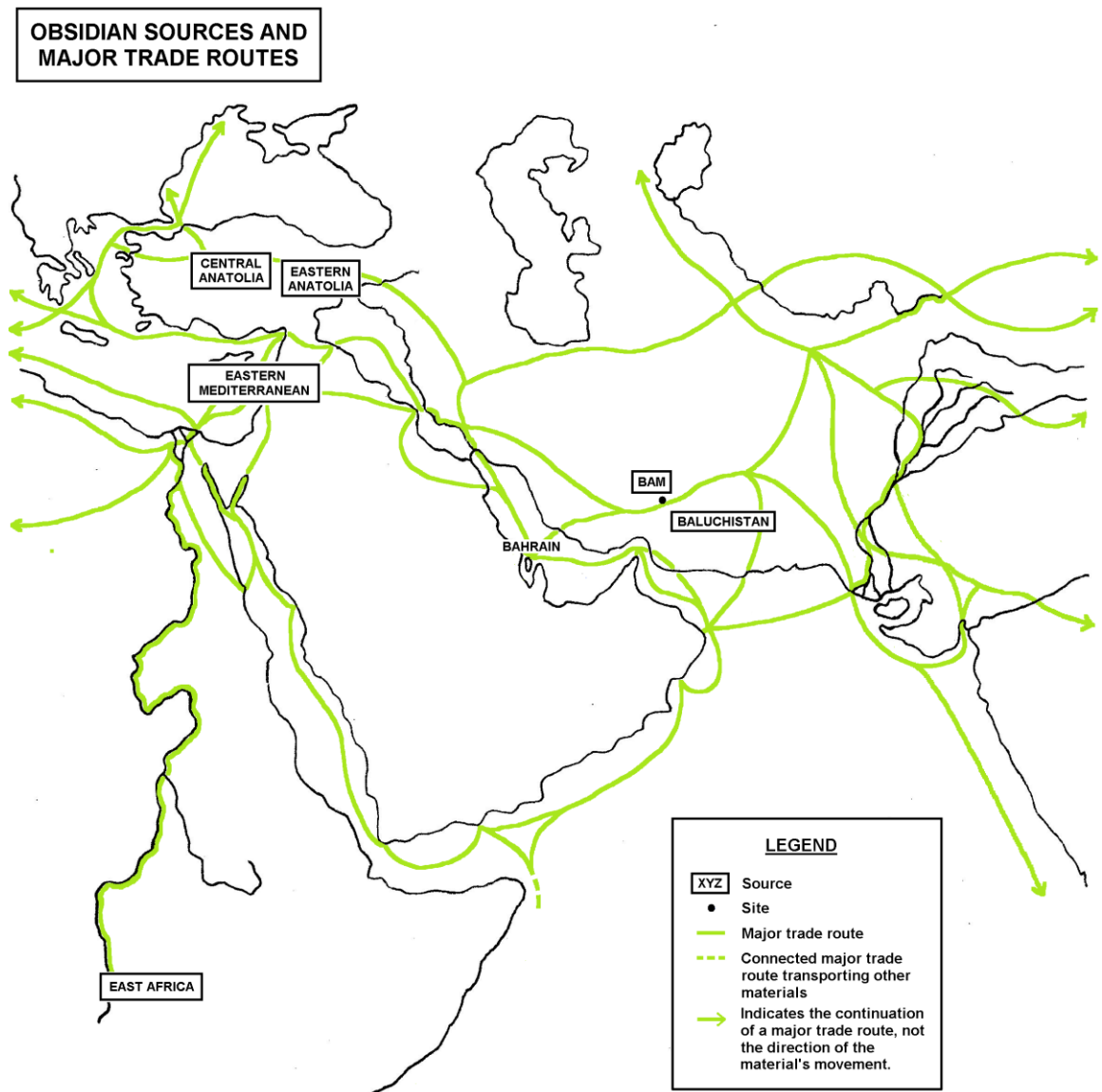
### **C. The Case of B656: Some Observations on Black Agate and Obsidian**

The bead of either black agate or obsidian (B656) also provides evidence of Dilmun's commercial connections. It was recovered from Building 53, Area 52, of the Saar Settlement (see Moon, 2005: 182-183, Fig. 5.9). If of black agate, an Indus source almost certainly accounts for the bead's material. During the early 2<sup>nd</sup> millennium BCE, the process employed for blackening agate and producing black-and-white onyx, which used sulphuric acid rather than a sugar solution, had not yet become available (Francis, 2002: 13). Peter Francis, Jr. assigned such a process to the "second half of the first millennium" BCE (2002: 13). That is not to say black agates did not exist, but natural specimens were quite rare. Such a bead would have fetched a very high price in any market and, if the specimen from Saar is indeed a black agate bead, would have been a remarkable demonstration of wealth even in Period IIc.

If, on the other hand, the bead is of obsidian, considerations must turn from the Indus to Persia, Anatolia, or East Africa (see Map 6). The mountains of Baluchistan, east of Tepe Yahya, possess obsidian deposits; another source may be found in the vicinity of Bam (Beale, 1973: 136). However, the eastern and central parts of Anatolia have been lauded as the principal obsidian-rich regions of the Bronze Age, and generally Anatolia and the eastern parts of the Mediterranean were exploited for this material since at least 7000 BCE (Beale, 1973: 136; Bienkowski and Millard, 2000: 217; Diamanti, 2003: 11). East African obsidian was also transported down the Nile to Egypt and markets in the Near East (see Dubin, 2006: 35).

Whilst Persian and East African sources should not be discounted outright, the far-reaching commercial transport of Eastern Mediterranean obsidian makes Anatolia a more likely source for the material behind the Saar bead. If Anatolia was indeed the obsidian's

source (as is almost certain), the bead's appearance in Bahrain may be an indication of the newfound importance Anatolian copper was achieving at this time, when Omani sources of the latter were beginning to be overshadowed (see Bienkowski and Millard, 2000: 179; Van De Mieroop, 2007: 140; Weisgerber, 1986: 139, 141). The decline in Dilmun's wealth during Period III has been partially associated with changes in fortune afflicting the Gulf copper trade (Weisgerber, 1986: 139, 141). But commercial relations with Mesopotamia must have nonetheless been maintained, for the obsidian (as raw material or finished bead) would have arrived in Bahrain along those channels.



**Map 6.** Obsidian sources mentioned in the text and the major trade routes that transported the material. The trade routes shown in this map are based on those indicated by James Lankton and Lois Sherr Dubin, with some additional ones included according to the references mentioned in the text (see Dubin, 2006: 35; Lankton, 2003: inside back cover).

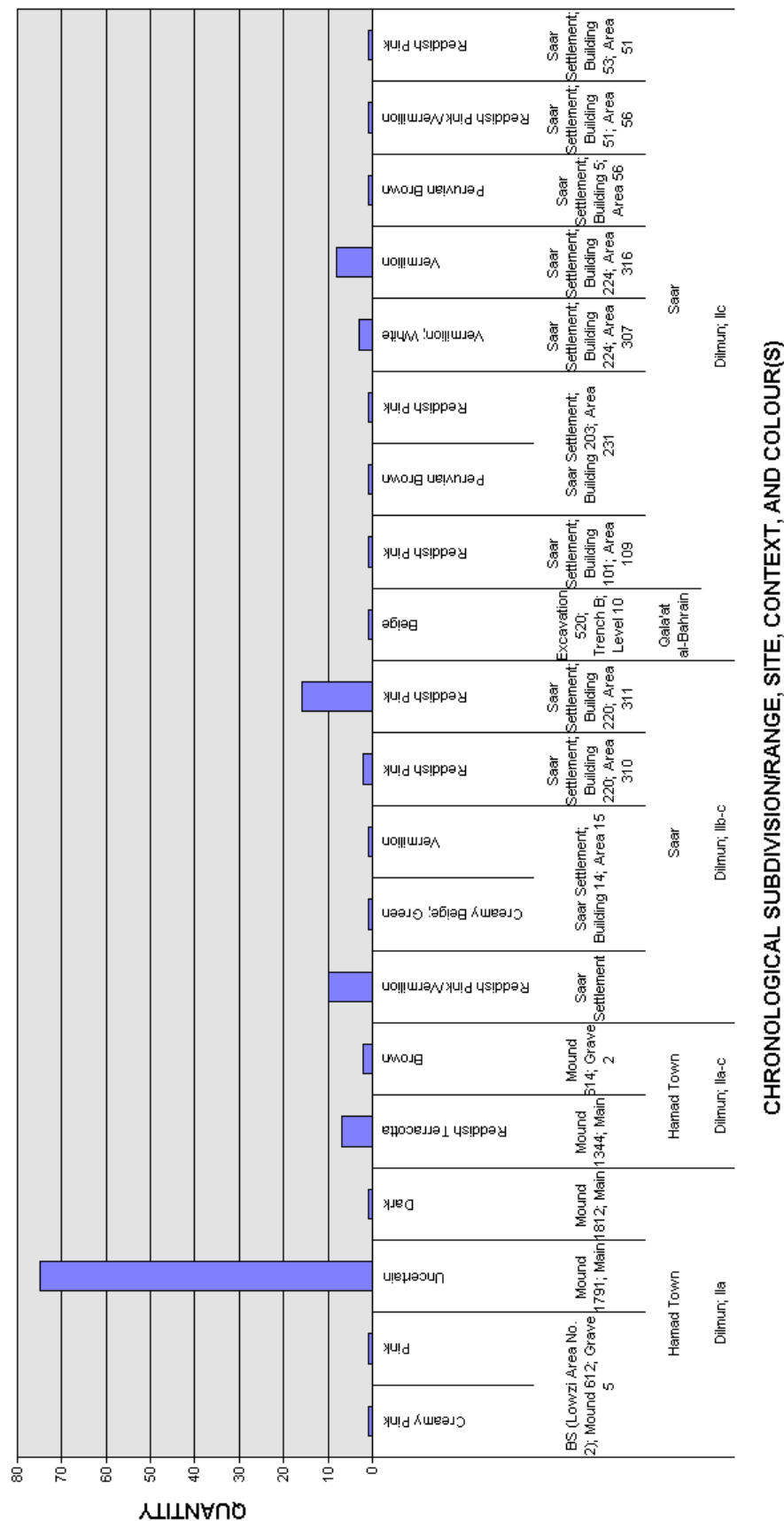
#### **D. Other Period IIc Bead Materials from Saar and the Significance of the Site's Clay Beads**

Saar's IIc beads include six banded carnelian specimens and only three of plain carnelian as well as a single agate bead; all bear witness to continued trade with the Indus (see Fig. 34) (see Moon, 2005: 182-183). However, clay is the most prevalent material amongst the Saar Settlement's IIc beads, with 17 cases (see Figs. 34-35) (see Moon, 2005: 181, 186-187). They respectively exhibit shades of red, brown, and vermillion that are also seen in Dilmun's Barbar ware and are part of the chemical nature of the clay employed for such pottery (see Højlund, 1994a: 101; Højlund, 2003a: 210). The clay beads may therefore be taken as local, both in material and manufacture, and seem to be evidence of beadmaking (at least in clay) having taken place in Dilmun. If we expand our chronological horizons to include a IIb-c range, 30 additional clay beads (some also from the Saar Settlement) can be identified, and these are all of the same type of clay (and, for the most part, share the same hues) as the 17 beads just mentioned (see Fig. 35) (see Moon, 2005: 181, 186-187). It is notable that no specifically IIc clay bead or any belonging to a IIb-c chronological range in the Bahrain sample came from a burial context (though there are a few from Hamad Town that date to a IIa-c range and may actually belong to IIc if not an earlier Period II subdivision); almost all of the IIc and IIb-c clay beads came from a particular settlement site, the one at Saar. Only a single IIc specimen (B364) came from Qala'at al-Bahrain.

Perhaps a workshop for producing clay beads (if not Barbar pottery) existed at Saar or within vicinity of the same in Period IIc (if not in IIb, with continued activity on into IIc), thus leading to a concentration of such beads at this one site in Period IIc or IIb-c. Moreover, due to the cheaper nature of clay beads (as opposed to carnelian, for instance), perhaps they were not deemed suitable burial material and therefore were only occasionally interred with the dead; this would explain their absence, based on the Bahrain sample, in specifically Period IIc or IIb-c burials as well as the small number from IIa-c graves at Hamad Town.

It is also notable that most of the Period IIc clay beads – Period II clay specimens in the Bahrain sample as a whole, in fact – which have had their colour(s) identified exhibit shades of red, brown, and vermillion (see Fig. 35). Whilst the use of red may have had a practical basis, derived from the nature of the clay available, that most of the Period II clay beads display a red or similar hue seems to suggest an attempt at imitating carnelian; particularly when alternative colours were possible as the exceptions amongst the Bahrain

sample's clay beads show. Such red clay beads may have been the equivalent of carnelian to those not wealthy enough to afford the actual stone. That they were recognized as cheap imitations may have kept them from being buried with the dead (except on occasion), and may explain their almost non-existence in Period II at Qala'at al-Bahrain, Dilmun's centre of government and commerce.



### CHRONOLOGICAL SUBDIVISION/RANGE, SITE, CONTEXT, AND COLOUR(S)

**Fig. 35.** Clay bead quantities in the Bahrain sample organized by chronological subdivision/range as well as site, context, and colour(s).

## **Period IIb-c**

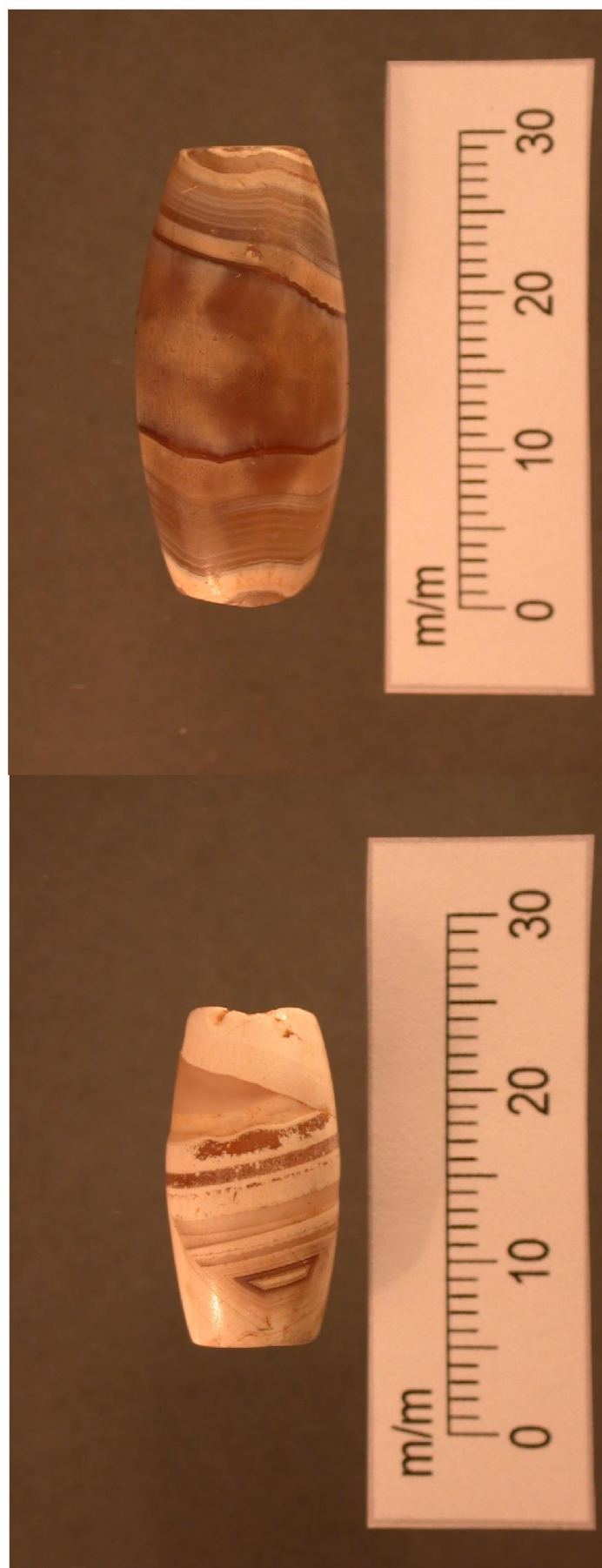
### **A. An Overview of Materials from the IIb-c Chronological Range**

A sizable number of Period II beads in the Bahrain sample have been dated to a broad IIb-c chronological range (see Figs. 36a-36b). The 30 clay specimens from this group have already been mentioned. But this group does not only represent beads from the Saar Settlement, but also several burial sites across Bahrain, including some of the eight major mound cemeteries that sprang up in Period IIa.

‘Aali and Hamad Town have each provided ten carnelian beads from IIb-c (see Fig. 36b). 15 IIb-c carnelian beads also came from Saar, all from the Saar Settlement except for a single specimen (see Fig. 36b). The lone carnelian exception (B243) was from Mound S-267.3, excavated by the Arab Expedition (see Ibrahim, 1982: 84). IIb-c agate beads from Saar have also been noted (21 definite cases, and more than six additional possible ones) alongside three banded agate specimens from burials there (see Fig. 36a). Significantly, all these were derived from funerary contexts, either from Saar’s tumuli or the Southern Burial Complex, except for a single bead from the Saar Temple (see Crawford, Killick, and Moon, 1997: 111; Ibrahim, 1982: 83-85; Mughal, 1983: 76, 84, 202, 214). Also to the IIb-c range belong two banded agate specimens from Hamala North that were recovered by Mrs. E.P. Jefferson (see Fig. 36a and Pl. II) (see During Caspers, 1980: 6, Pl. VII 2). These, like the carnelians and agates from Hamad Town and Saar, act as additional proof of Indus contact and indeed the extent to which such contact persisted in IIb-c despite a decline compared to IIa.

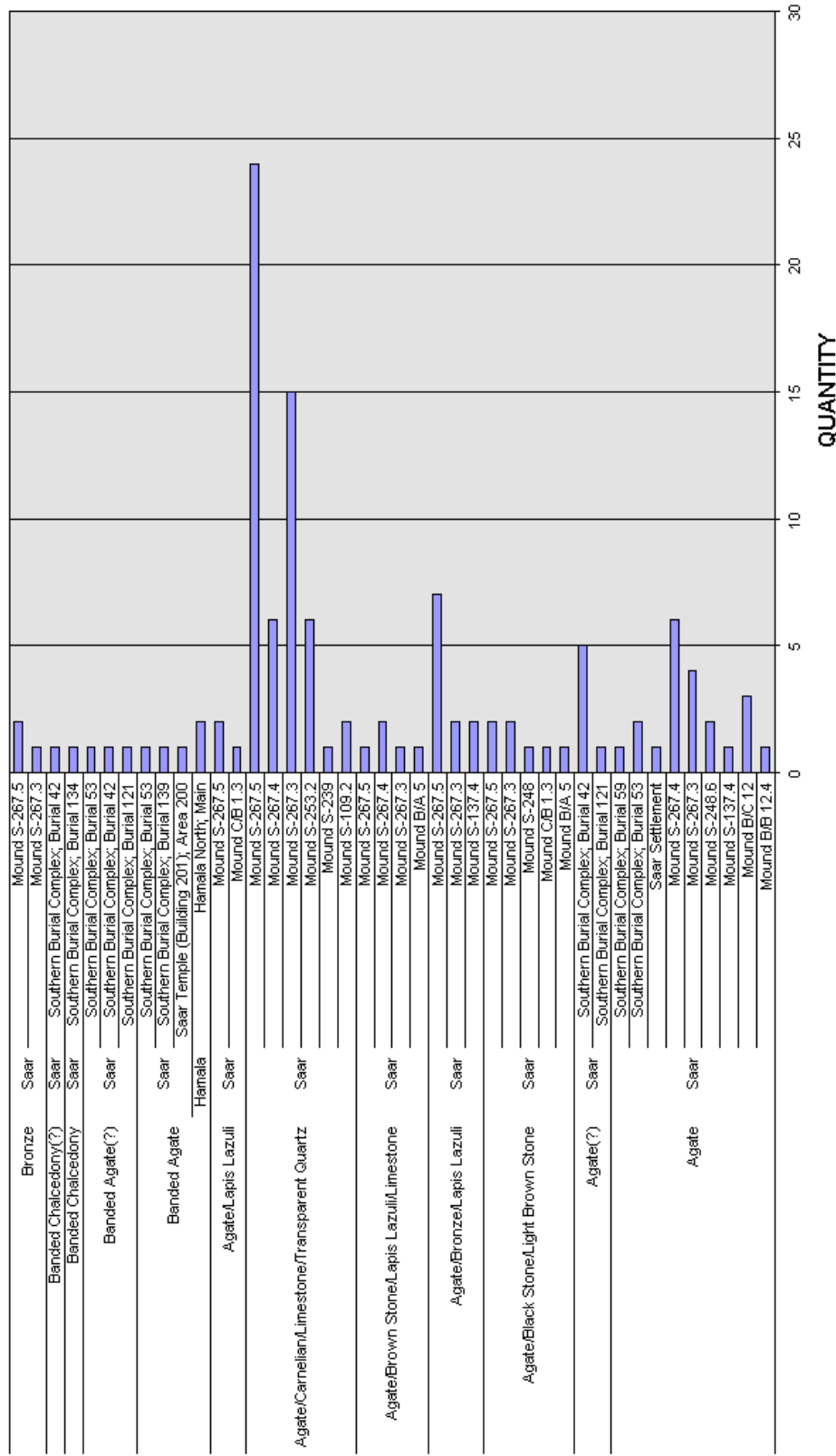
Certain materials first encountered within the IIb-c chronological range include two quartzite beads from a Late Type burial mound at Hamad Town (Mound 10, Square G5, in the BN area) (see Fig. 36b). Three bronze beads have also been recovered from Saar’s burials: two from S-267.3 and one from S-267.5 (see Fig. 36a) (see Ibrahim, 1982: 83-84). Necessary for the production of bronze is tin, which again points to Elamite sources within Persia (see Van De Mierop, 2007: 103).



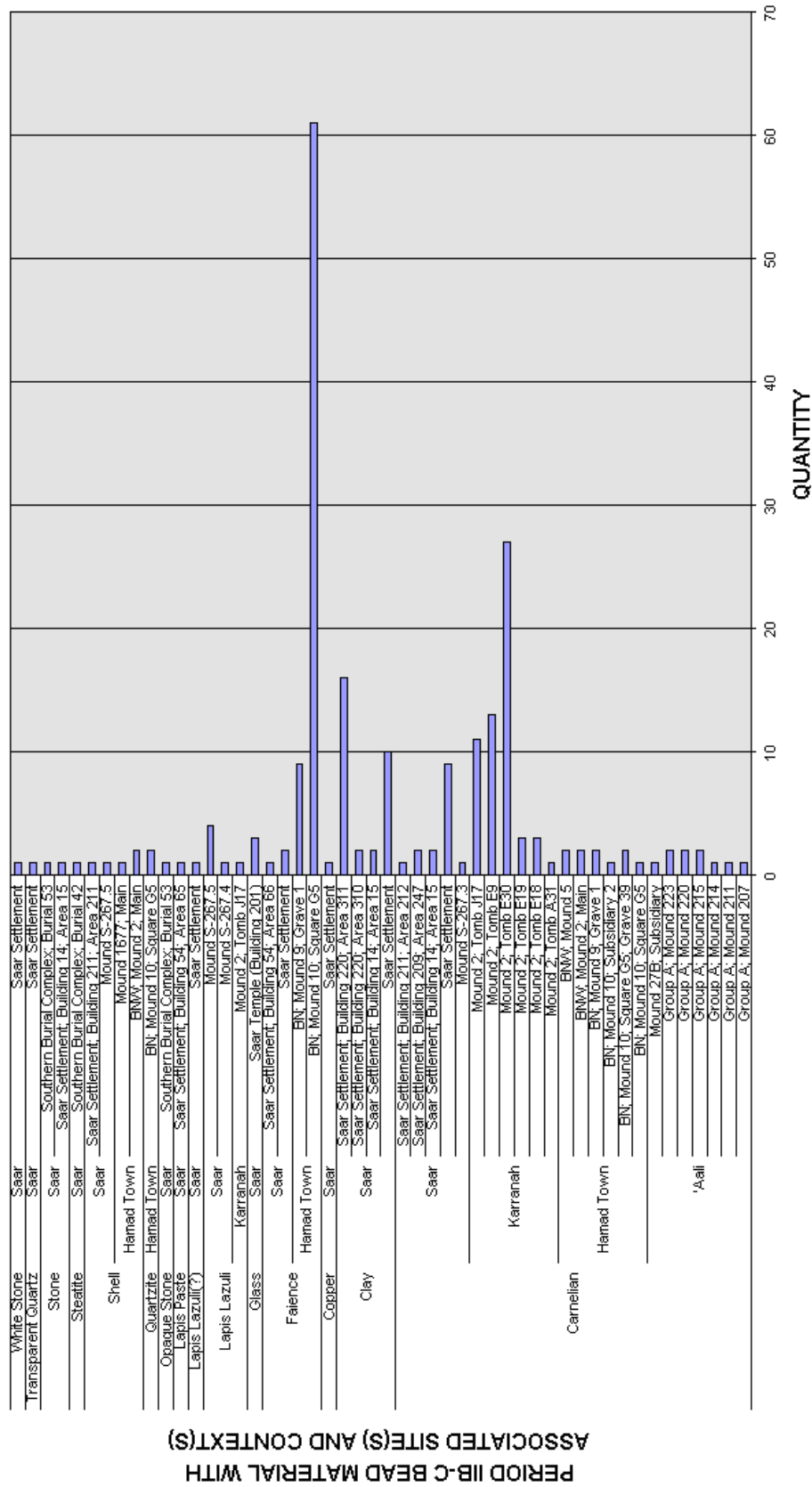


**PL. II.** Beads B841 (left) and B842 (right), being the two banded agate specimens recovered by Mrs. E.P. Jefferson from an Early Dilmun burial at Hamala North. These items have been dated to the IIb-c chronological range.

PERIOD IIB-C BEAD MATERIAL WITH  
ASSOCIATED SITE(S) AND CONTEXT(S)



**Fig. 36a.** First part of a breakdown of bead quantities representing Period IIB-c materials in the Bahrain sample along with associated sites and contexts. Questionable material attributions or those involving more than one possibility have been treated as distinct from their confirmed counterparts. It should be noted that this graph only takes into account those beads assigned specifically to a IIB-c chronological range.



**Fig. 36b.** Second part of a breakdown of bead quantities representing Period IIB-c materials in the Bahrain sample along with associated sites and contexts. The questionable attribution of lapis lazuli has been treated as distinct from its confirmed counterpart. It should be noted that this graph only takes into account those beads assigned specifically to a IIB-c chronological range.

Glass is generally still found only in small numbers (see Fig. 36a). Three beads from the Saar Temple, two black and a single purple example, are the only glass beads from the I Ib-c chronological range, though two additional beads (one green and one black) from the same context could more specifically be from Period IIb (see Fig. 33) (see Crawford, Killick, and Moon, 1997: 112; Moon, 2005: 186). Along with three dark glass beads from IIa, recovered from Graves 51C and 51D of Hamad Town's Mound 51 (see Fig. 31b), as well as other specimens from Period II, these seem to indicate a preference for dark and black hues that was apparently a feature of glass ornaments in that period of Early Dilmun (as it may have been in Period Ib, if the dark bead from the "elite" mound at Wadi as-Sail is anything to go by) (see Fig. 37) (see Højlund *et al.*, 2008: 149, Fig. 17). Such dark glass was produced through magnesium as a colouring agent, as has been mentioned in Chapter 8.3, though also augmented at times by excessive smoke in the atmosphere of the glass furnace. However, glass was still a rarely encountered prestige technology throughout Period II, not becoming more common till sometime between 1700 and 1500 BCE (contemporary with Period Post IIc and early Period III) in the Near East (see Bienkowski and Millard, 2000: 129; Lankton, 2003: 39). The glass beads spanning Period II in the Bahrain sample thus portray this chronological segment of Early Dilmun as having been a prosperous one on the whole, despite any decline which might have set in towards its end.

## **B. I Ib-c Carnelian Beads and the Affluence of Burials at Karranah**

The two largest quantities represented by any material in the I Ib-c chronological range, however, are those of carnelian and faience, with their greatest presences being respectively amongst the beads recovered from Karranah and Hamad Town (see Figs. 36a-36b). 58 carnelian beads have been excavated from a single mound containing multiple burials at Karranah: Mound 2. They were recovered from the following burials: A31, E9, E18, E19, E30, and J17. The largest amount (27 beads) came from Grave E30 whilst the smallest (a single bead) came from A31. Bearing in mind other examples, such as the lapis lazuli bead from Grave J17 (alongside eleven carnelian ones), it seems that Mound 2 represented a particularly wealthy collection of burials from the standpoint of bead materials.

Considering a possible connection between Karranah and the Saar Settlement (or a comparable habitation site), on the basis of trends in diaphaneity preferences mentioned in Chapter 8.4, it would seem that Mound 2 represented a sort of "elite" burial group associated

with the Settlement (or its counterpart). If Karranah was indeed associated with the Saar Settlement rather than any other site, it may have been set apart from the Saar mound field for just such a purpose: to act as an area for the burial of the wealthy or high standing individuals of the Early Dilmun town.

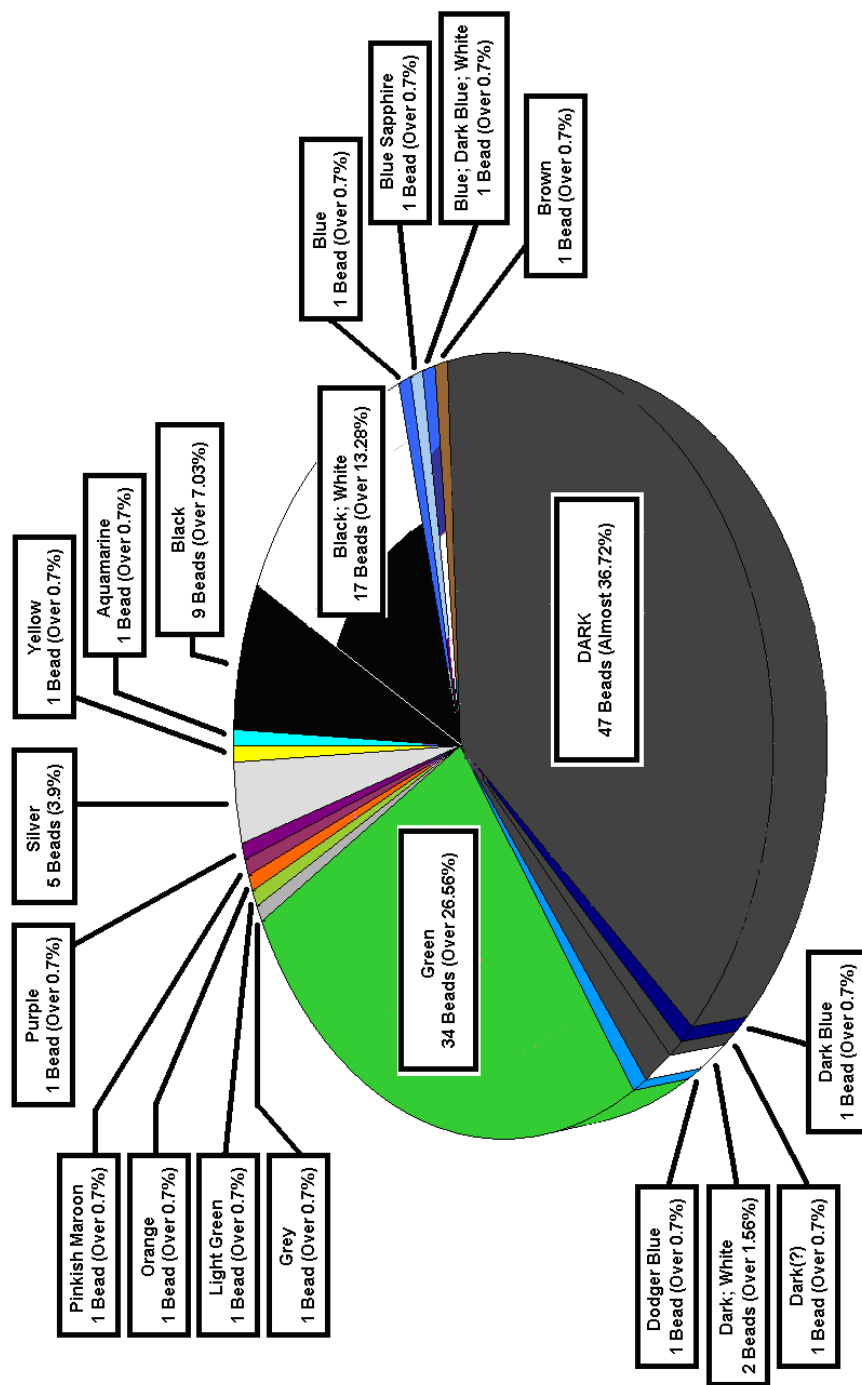


Fig. 37. Pie chart showing a breakdown by colour(s) of the total number of Period II glass beads (128 specimens), irrespective of chronological subdivision or range, along with the number and percentage of each indicated. The prevalence of dark and black, both separately and in combination with other hues, should be noted. The former of the two, in fact, forms the largest slice of the chart. The percentages shown are those obtained against the backdrop of the 128 glass bead total. The questionable attribution of a dark hue has been treated as distinct from its confirmed counterpart. It should be noted that beads B366, B415, B416, and B417 are not amongst the numbers considered in the chart, since they could belong to a chronological era other than Period II.

This possibility of such a status is further supported by a consideration of Karranah beads belonging to the even broader chronological range of Ila-c, whilst bearing in mind that many of these could be from either I Ib or I Ic. We thus have 18 additional carnelian beads and single cases of banded carnelian, banded agate, and faience (see Figs. 38a-c). Five glass examples and two of lapis lazuli may also be considered important indicators of wealth (see Fig. 38c). On the whole, however, none of these amounts (even if we were to disregard the possibility that any Ila-c beads are from an epoch later than I Ia) indicate affluence even close to that exhibited by Karranah's I Ib-c burials.

### **C. Faience: The Most Visible Material Noted Amongst the I Ib-c Beads**

The largest quantity attributed to any I Ib-c bead material in the Bahrain sample, however, is represented by 73 faience beads, 70 of which came from Hamad Town (see Fig. 36a). The association between early faience and turquoise has already been mentioned as a particularly relevant feature of both Period I b and Period II on Bahrain. We have also noted that, despite being a prestige good, faience was far more available in the Near East than actual turquoise. Bearing all this in mind, new light is shed upon the large quantities of faience found at Hamad Town throughout Period II and its subdivisions, quantities that dwarf the meager handfuls from any of the other sites on Bahrain despite the subdivision of Period II involved (e.g. a single I Ib bead from Qala'at or only three from the I Ib-c collection from Saar). 201 I Ia Hamad Town faience beads have already been discussed above. Adding to this the 70 I Ib-c faience beads from the same site, it becomes clear that something more than mere coincidence is behind the large numbers of faience specimens from the cemetery.

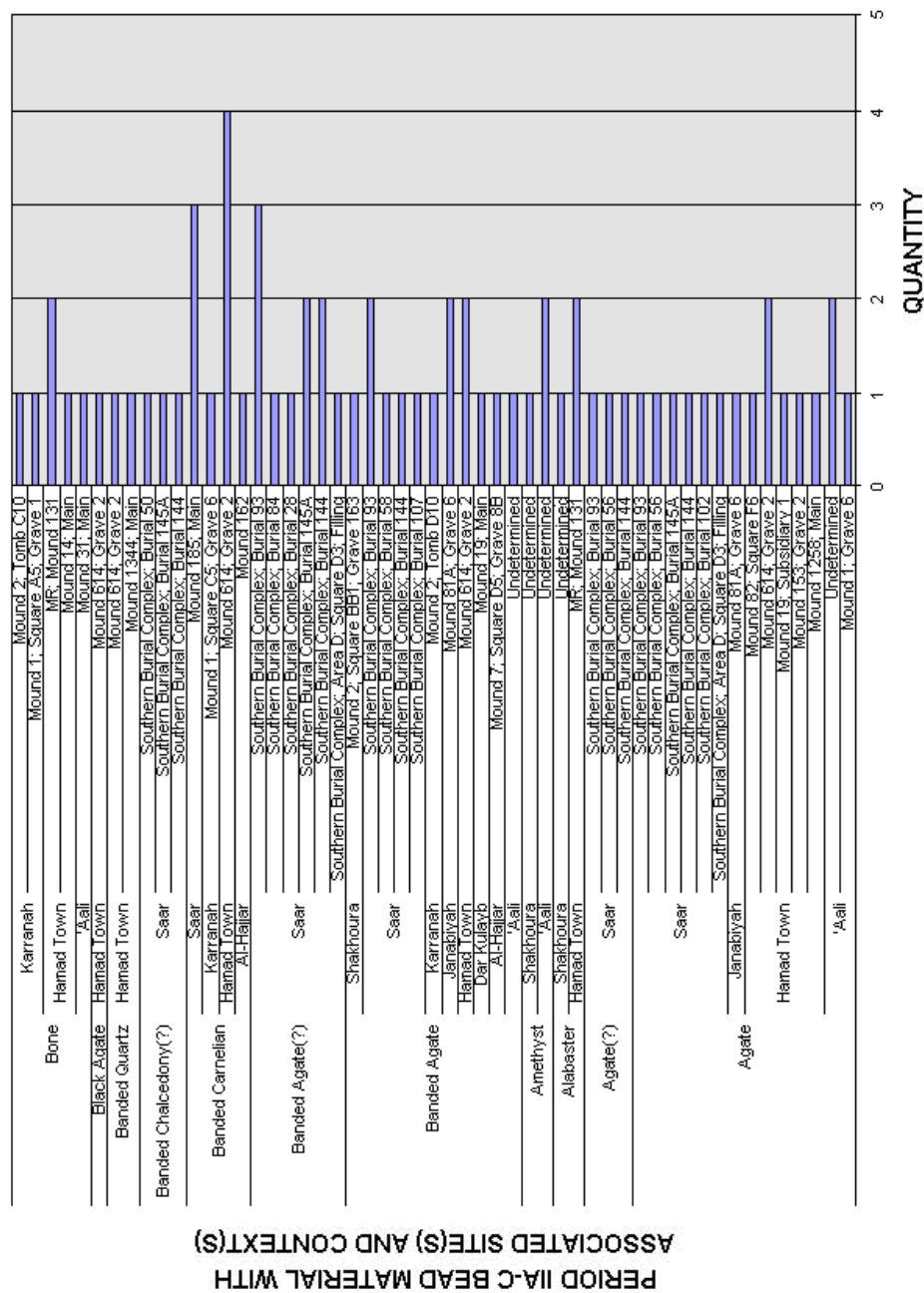
As Højlund has remarked, each of the eight major cemeteries that arose in Period I Ia and saw further use thereafter likely catered to a nearby kin-based community or village (2007: 129). Assuming this to have been the case, the settlement associated with Hamad Town must have had a special predilection for faience, perhaps even a workshop for the production of the material. Of course, a preference for the material, its blue-green hue, or its similarity to turquoise may be the reason behind the abundance of faience in Hamad Town Period II burials. Until further information is obtained, only hypotheses can be put forward regarding the importance of faience to Hamad Town burials.

## **Period IIa-c**

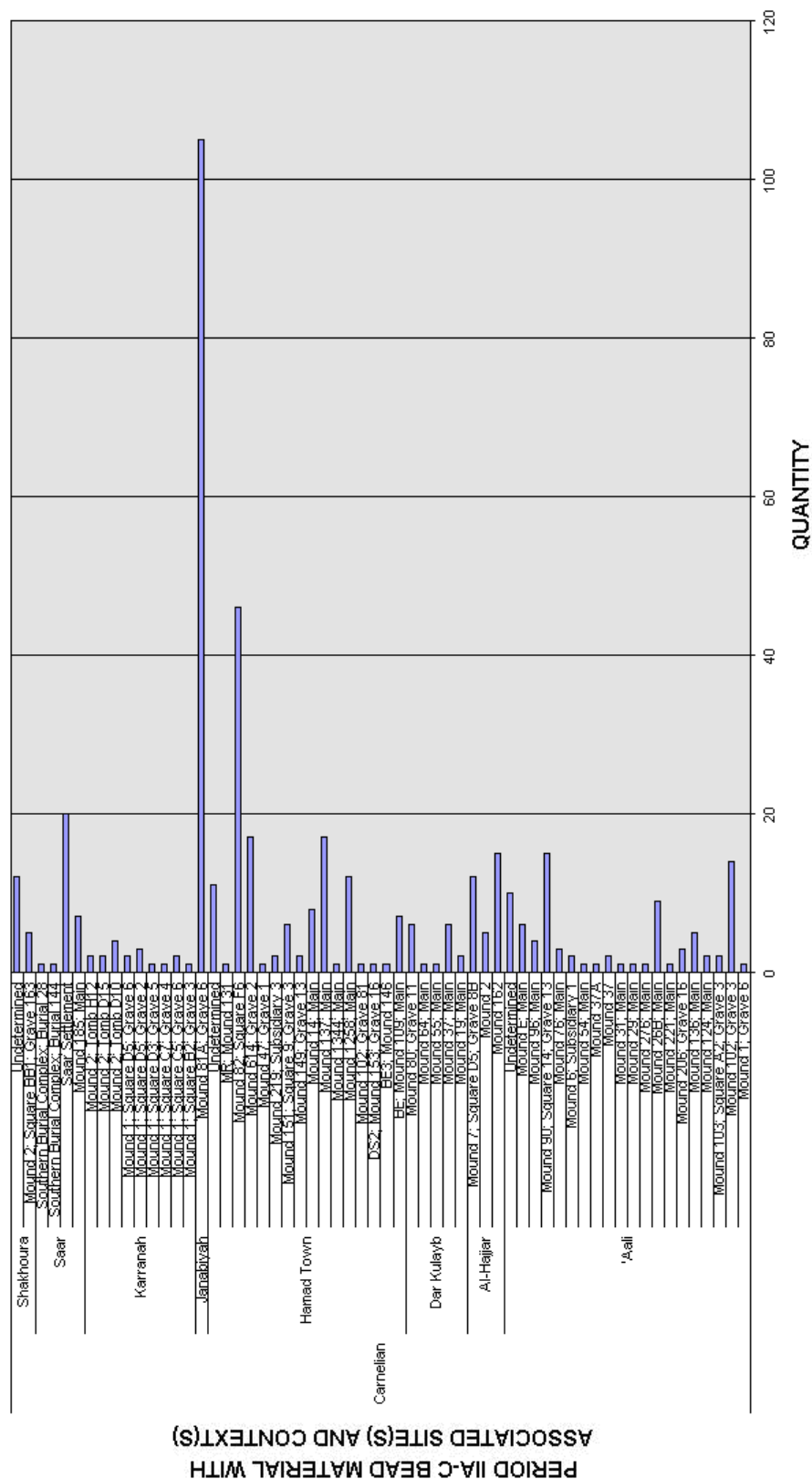
### **A. Approaching the IIa-c Bead Materials**

A significant number of beads in the Bahrain sample have been assigned only to a broad IIa-c chronological range; that is, a range that covers most of Period II (see Figs. 38a-38d). For an overview of Period II (excluding Post IIc) materials, those of the more specifically dated beads already covered in the earlier sections of this chapter can be added to the IIa-c range's amounts and a more comprehensive picture gained of such materials across the three chronological subdivisions involved (that is, IIa, IIb, and IIc). However, to avoid any unnecessary confusion, we will not attempt this and will instead take the materials from those beads assigned to the IIa-c chronological range as they are, treating them for the most part as a distinct group (much as we have already done with the bead materials from the IIb-c range).

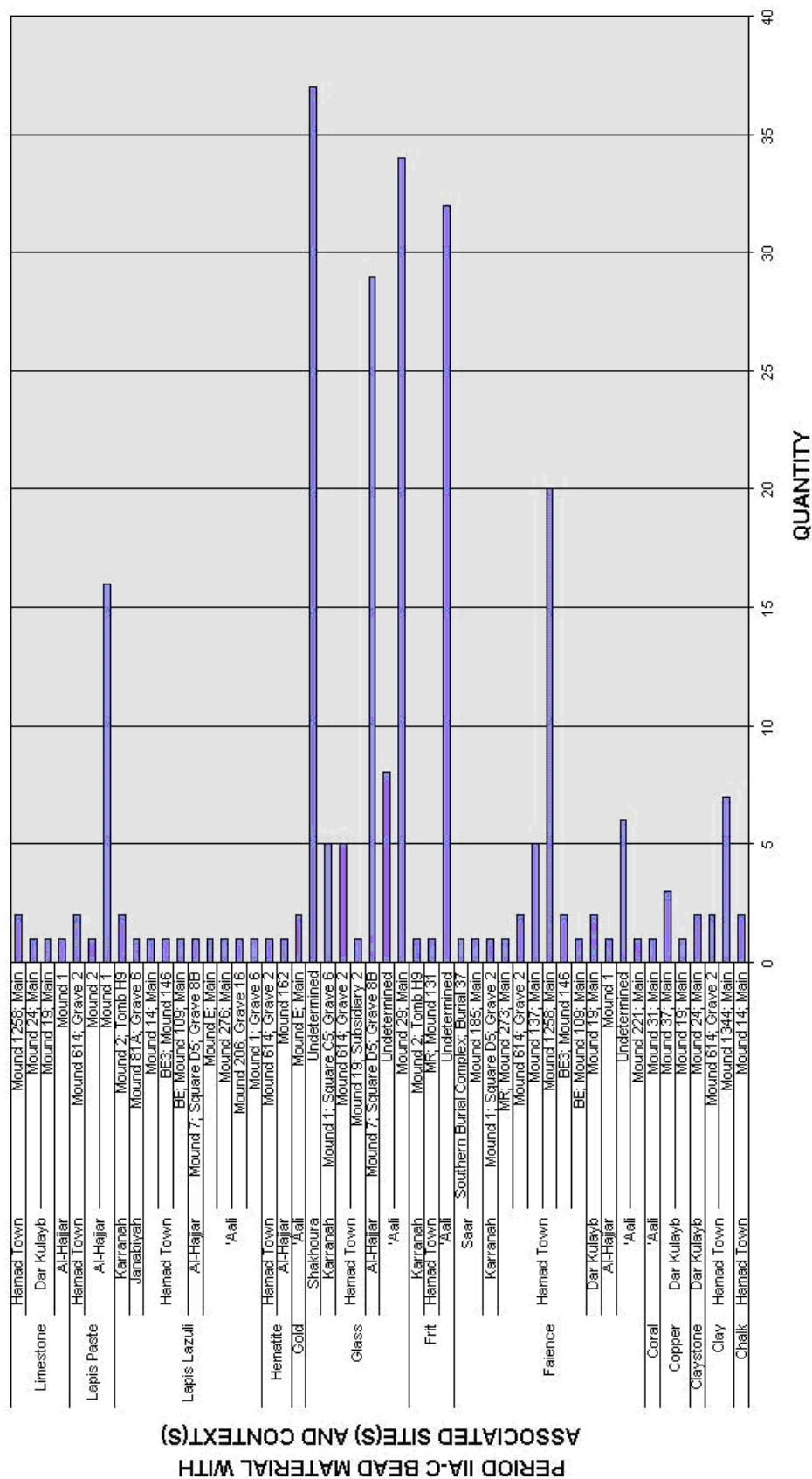




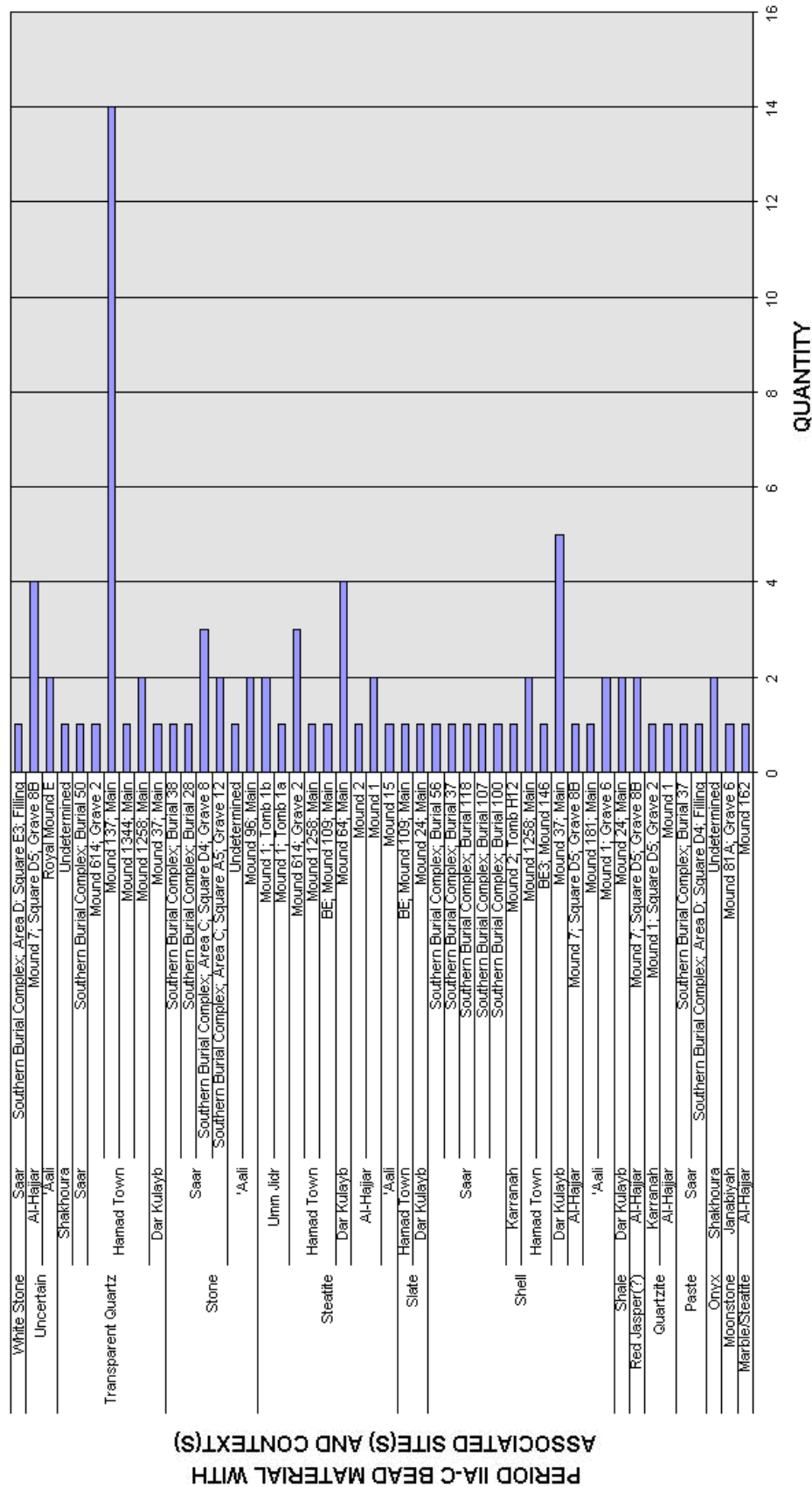
**Fig. 38a.** First part of a breakdown of bead quantities representing Period Ila-c materials in the Bahrain sample along with associated sites and contexts. Questionable material attributions are treated as distinct from their confirmed counterparts. It should be noted that this graph only takes into account those beads assigned specifically to a Ila-c chronological range.



**Fig. 38b.** Second part of a breakdown of bead quantities representing Period Ila-c materials in the Bahrain sample along with associated sites and contexts. This graphic representation focuses on non-banded carnelian to the exclusion of other materials. It should be noted that this graph only takes into account those beads assigned specifically to a Ila-c chronological range. Beads B1206, B1207, and B1251 are not included amongst the graph's quantities since their attribution to the Dilmun era, let alone the Ila-c range, is questionable.



**Fig. 38c.** Third part of a breakdown of bead quantities representing Period Ila-c materials in the Bahrain sample along with associated sites and contexts. It should be noted that this graph only takes into account those beads assigned specifically to a Ila-c chronological range.



**Fig. 38d.** Fourth part of a breakdown of bead quantities representing Period Ila-c materials in the Bahrain sample along with associated sites and contexts. It should be noted that this graph only takes into account those beads specifically assigned to a Ila-c chronological range.

## **B. The Distribution of Ila-c Carnelian Beads**

Agates and carnelians, in regular and banded varieties, representing contact with the Indus, featured at almost all the sites that have produced Ila-c beads. At all sites, with the exception of Hamad Town and Shakhoura, the most significant bead material assigned to a Ila-c range, quantity-wise, was carnelian. Umm Jidr has not contributed any Ila-c carnelian beads to the Bahrain sample, but only three steatite specimens (see Fig. 38b and Fig. 39). The sites that have their non-banded carnelian amounts topping the Ila-c materials list in the Bahrain sample are: ‘Aali (84 beads), al-Hajjar (32 beads), Dar Kulayb (16 beads), Janabiyah (105 beads), Karranah (18 beads), and Saar (29 beads).

Hamad Town, whilst not having carnelian as its most numerous bead material, nonetheless has it as its second most numerous, by far outnumbering quantities from other sites (see Fig. 38b and Fig. 39). Exactly 134 Ila-c carnelian beads have been recovered from Hamad Town burials. Thus, amongst the Ila-c specimens, the strongest international trade links visible in terms of beads (whether at Hamad Town or elsewhere on Bahrain) are those that existed between Dilmun and the Indus, due to the preponderance of carnelian and augmented by other materials such as agate (regular and banded), transparent quartz, and the like. Of course, other trade links are also visible in the form of hematite, lapis lazuli, steatite, etc. Whilst having diverse sources, the commercial routes passing through Persia seem to have been quite important, based on an assessment of the different Ila-c bead materials; almost as important, in fact, as the maritime routes bringing goods in from the Indus Valley.

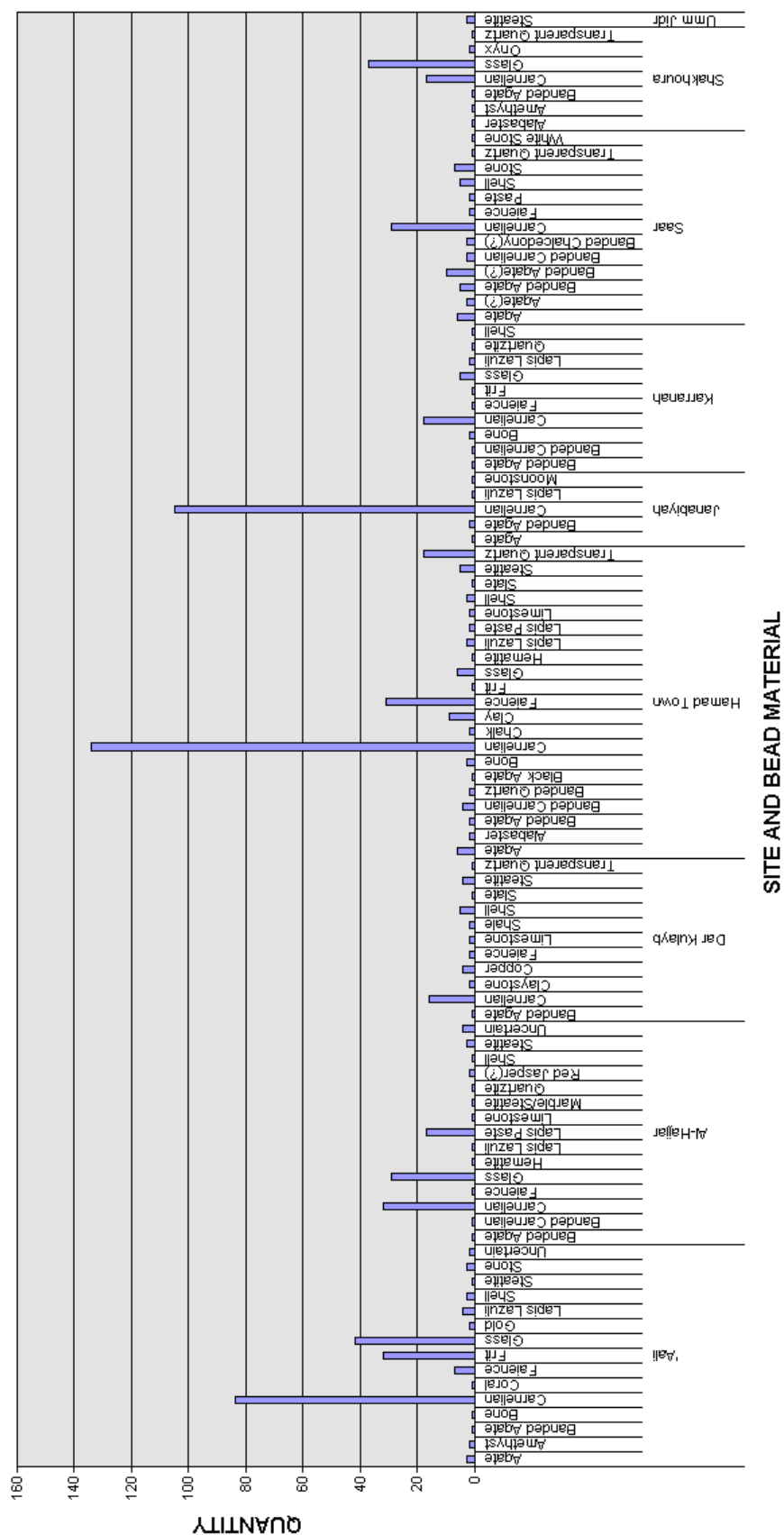
## **C. Faience and Frit: Hamad Town’s Unique Amount and ‘Aali’s Involvement**

Frit, as a lower quality version of faience, was obtained from only three sites: ‘Aali (32 beads), Hamad Town (a single bead), and Karranah (also a single bead) (see Fig. 39). Faience, however, as being of greater quality and indeed a prestige good during Early Dilmun was obtained from: ‘Aali (seven beads), al-Hajjar (one bead), Dar Kulayb (two beads), Hamad Town (31 beads), Karranah (one bead), and Saar (two beads) (see Fig. 39). The relationship between frit and faience, explained in Chapter 8.2, must be re-emphasized at this point.

Of course, the greatest faience amount, as is visible from the list just given, came from Hamad Town: 31 beads (see Fig. 39). This is hardly surprising since we have already noted an

intimate relationship between faience and Hamad Town burial assemblages. Incorporating the faience beads from Hamad Town attributed to Period IIa as well as the IIb-c chronological range, touched on in earlier sections of this chapter, we arrive at a grand total of 302 faience specimens in the Bahrain sample that collectively represent the chronological subdivisions of Period II prior to Post IIc. This is remarkable, because no other material at a single site comes even close when the first three chronological subdivisions of Period II are collectively considered in this fashion. This seems to highlight a special relationship between the site of Hamad Town and faience as a material.

If we return to focusing solely on those beads assigned to a IIa-c chronological range, it becomes possible to note that ‘Aali was also influenced somewhat by the faience industry, though more after the fashion of frit as a cheaper version, due to having the second-largest (though not much) faience count and the largest frit quantity. Comparable importance seems not to have been given to faience or frit at any of the other burial sites on Bahrain, nor at any of the urban and settlement sites, and all of these are located further north whilst Hamad Town and ‘Aali represent a particular geographic zone on Bahrain within close proximity. This seems to support the notion that faience played a more significant role within the geographic zone mentioned, perhaps due to the presence of a local faience industry in this area. Such an industry would explain away the somewhat exclusive geographic pattern thus created, which would otherwise be difficult to account for in a land with sites in such close proximity (as in Bahrain), given the information we have, except perhaps on ideological or preferential grounds.



**Fig. 39.** Quantitative representation of the presence of Period Ila-c materials at different sites based on the Bahrain sample beads. It should be noted that this graph only takes into account those beads assigned specifically to a Ila-c chronological range. Beads B1206, B1207, and B1251 are not included since their attribution to the Dilmun era, let alone the Ila-c range, is questionable.

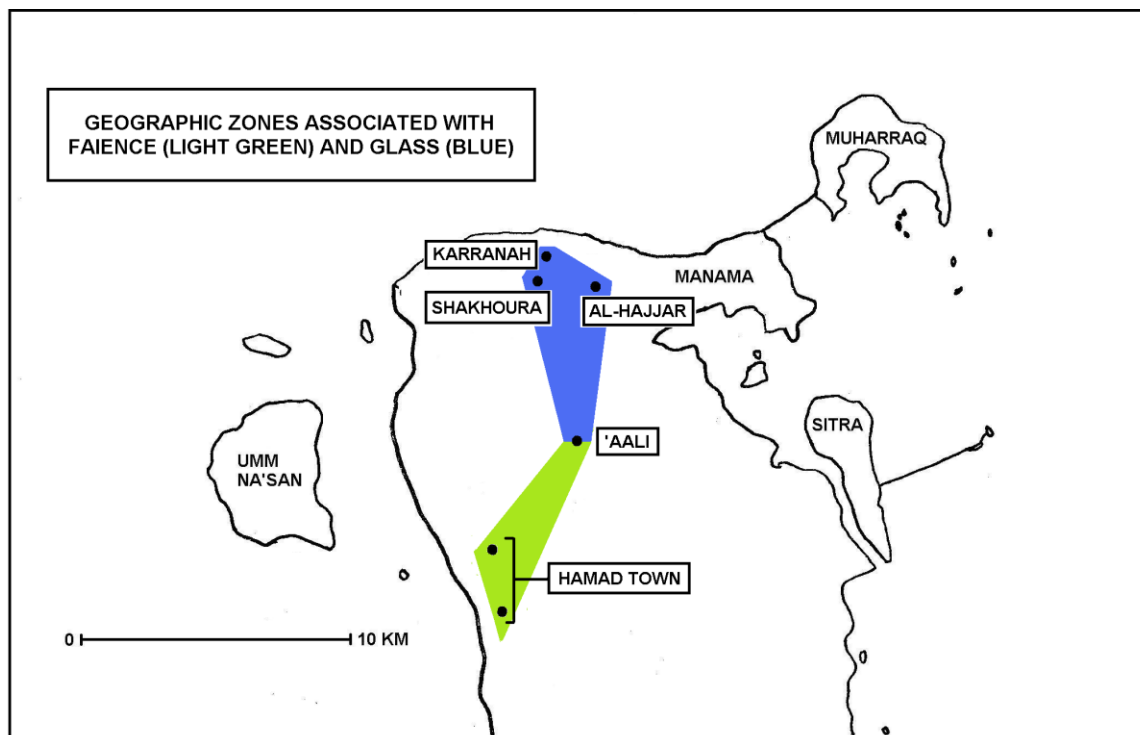
A settlement supporting the Hamad Town cemetery would have been a likely site, if such a local industry was indeed behind the conspicuous faience amounts at the nearby cemetery. 'Aali could have shared in the fruits of this industry, perhaps obtaining lower quality frit beads from it, or could have had a far inferior one. The faience beads that made it to Qala'at al-Bahrain, Saar, or any of the other sites would have represented the products of such an industry.

#### **D. Ila-c Glass Amounts and the Emergence of Two Geographical Zones**

Faience, however, is not the only synthetic material visible amongst beads belonging to the Ila-c chronological range, though it is perhaps the most conspicuous from Hamad Town. At other sites, whether urban or funerary, glass seems to have been more prominent (see Fig. 39). Al-Hajjar, for instance, has contributed 29 glass beads to the Bahrain sample, and other sites that have done so include: Hamad Town (six beads), Karranah (five beads), and Shakhoura (37 beads). Even 'Aali, already suggested as contained within the geographic zone influenced by a stronger presence of faience finds, has actually provided more glass beads (42 cases) than frit (32 cases) or faience (seven cases) combined. At such sites as 'Aali, al-Hajjar, and Karranah, glass was second only to carnelian in terms of numbers. And at Shakhoura, it even held pride of place as the most numerous bead material, far outnumbering any other.

Like the geographic zone of faience influence centred at Hamad Town and extending to 'Aali, it becomes possible to identify a second zone of this sort that encompassed several of the northern burial sites along the "fertile strip" of Bahrain (i.e., al-Hajjar, Karranah, and Shakhoura) and extended southwards to meet the faience zone (see Map 7). 'Aali appears to mark the convergence of the two zones. And perhaps a preference for glass at 'Aali explains the larger numbers of frit, as a lower quality faience, exhibited at the site. We may also posit a preference for glass as being behind the existence of the second geographic zone, or else the possibility of a glass workshop being based within it. As with Hamad Town and its predilection for faience, these suggestions must remain hypotheses till further evidence can be gained in aid or refutation of them.

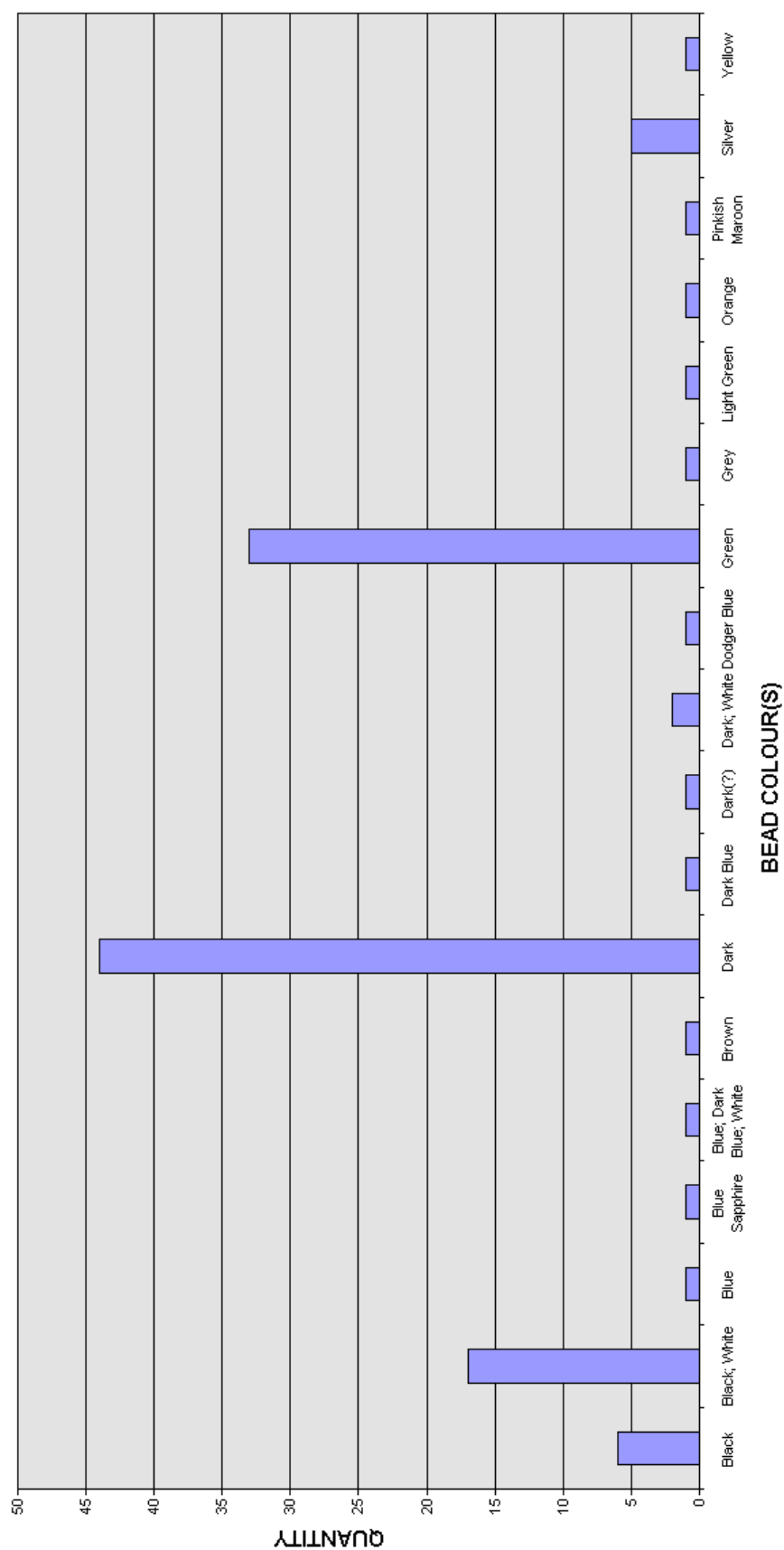




**Map 7.** A rough depiction of the two geographical zones associated respectively with faience and glass.

### E. Hues Amongst the IIa-c Glass Beads

What is also apparent from an examination of the IIa-c glass beads is the predominance of specific hues. Certainly there are exceptions such as purple, yellow, etc. But for the most part the beads are one of the following: dark (even black in some cases), green (or a shade of it), or blue (again, at times a particular shade of blue) (see Fig. 40). A preference for magnesium-coloured glass must be pointed out, especially since dark or black hues form the majority: 50 definitely dark or black beads (counting both shades together), one possibly dark bead, and 19 beads that are either dark-and-white or black-and-white (that is, they combine two hues). With regard to the dark-and-white and black-and-white combinations, in later epochs (from roughly the mid-1<sup>st</sup> millennium BCE onwards) such beads would be taken as black-and-white onyx imitations. Though comparable IIa-c specimens may appear to be onyx imitations, their dating to the early 2<sup>nd</sup> millennium BCE precludes this possibility; for more than another millennium would be required for intentionally produced black-and-white onyx to appear, let alone its imitation. A preference for dark or black beads in IIa-c is certainly to be noted, however.



**Fig. 40.** Bead quantities representing different colours or colour combinations amongst the Period Ila-c glass specimens in the Bahrain sample. The questionable attribution of a dark hue is treated as distinct from its confirmed counterpart. It should be noted that this graph only takes into account those beads specifically assigned to a Ila-c chronological range.

As far as greens and blues go, glass of the former colour has already been suggested as an alternative to turquoise, or else faience (which itself was used to imitate turquoise). Blue glass, on the other hand, where dark, would have been employed as an imitation of lapis lazuli; where lighter in hue or aquamarine, for instance, it would have been a more impressive substitute for turquoise (compared to faience). Such substitution has already been dealt with above, but it is important to highlight the value of the materials being imitated and the demand that was present for them at the time of imitation. It is also important to highlight that the material used for imitation (that is, glass), was itself a valued substance and a prestige good in Period II. But such a prestige good, whilst costly, would have still been far cheaper and more available than the more expensive stones it was made to represent, held in high esteem but often difficult to acquire (like the rare turquoise or the lapis lazuli that was experiencing a shortage). Further illustrations of glass being used for imitation are five burial beads from 'Aali that are silver in hue and seem almost uncannily like the metal they were made to resemble. These are the only silver glass specimens amongst the IIa-c beads as well as in the Bahrain sample as a whole.

#### **F. Lapis Lazuli, Copper, and Gold: Specimens Assigned to the IIa-c Chronological Range**

The IIa-c beads include many actual specimens of lapis lazuli, in addition to the glass imitations of the stone already referred to above. Lapis lazuli was found at: 'Aali (four beads), al-Hajjar (one bead), Hamad Town (three beads), Janabiyah (one bead), and Karranah (two beads) (see Fig. 39). For a material in shortage at the time, the turnout seems quite remarkable; especially since lapis lazuli is rarely found in the archaeological record representing the late 3<sup>rd</sup> and early 2<sup>nd</sup> millennia BCE when compared to epigraphic references (see Lankton, 2003: 39; Tallon, 1995: 61). It must, however, be admitted that effects of the shortage were felt even in Dilmun, with lapis paste often being employed as a substitute at al-Hajjar (17 beads) and Hamad Town (two beads).

The availability of lapis lazuli, nonetheless, attests to Dilmun's strong commercial links at this time, as does the presence of copper brought in from such regions as the Oman Peninsula. The earliest copper beads in the Bahrain sample belong to Period II (specifically

IIa), and this is fitting given that Dilmun achieved a special importance in the Arabian Gulf's copper trade at this time. We may augment the IIa amount by noting the existence of four IIa-c copper specimens (B4098, B4099, B4100, and B4101) from Dar Kulayb (see Fig. 39).

Gold also has its earliest examples in the sample amongst Period II beads (though, in this case, those beads attributed to the IIa-c chronological range). These earliest examples are two specimens (B1473 and B1475), both from a Late Type mound at 'Aali designated Mound E by the Tunisian team that excavated it (see Fig. 38c). Again, they are a reminder of Dilmun's trade contacts and the exponential growth it was experiencing throughout its Early Dilmun period before the beginnings of a decline set in that drove it into its Post IIc period.

## **Period Post IIc**

### **A. An Overview of Post IIc Bead Materials**

The epoch covered by Post IIc on Dilmun has been generally considered a period when Early Dilmun hit a "rock-bottom" of sorts; that is, it experienced a very low socio-economic ebb (Højlund, 2007: 126-127, 135). The beads definitely assigned to Period Post IIc in the Bahrain sample, however, do not seem to have suffered any conspicuous consequences as a result of this ebb. In fact, a great many of the more costly materials seem still to have adorned the Dilmunites at this time. Beads of carnelian, lapis lazuli, and even gold were still being used. On the whole, 92 individual beads in the Bahrain sample, representing 14 identifiable materials, belong to Period Post IIc (see Fig. 41). To arrive at this figure, we have excluded consideration of two beads from Saar (B173 and B218) that have been assigned to a IIc-Post IIc chronological range.

The specifically Post IIc beads all came from three sites: Budaiya', Karranah, and Saar (see Fig. 41). In a sense, this immediately marks the economic and social ebb already mentioned. No longer do we have beads contributed from such cemeteries as 'Aali and Hamad Town, which furnished us with some of the larger amounts belonging to earlier subdivisions of Period II. Indeed, most of the eight principal mound fields seem invisible in the archaeological record represented by beads. Even urban sites have provided no evidence, for no Post IIc beads appear in the Bahrain sample from Qala'at al-Bahrain or the Saar Settlement (and the few Saar beads we do have all came from burials). The Post IIc beads that we do have were all derived from only a handful of graves: two at Budaiya' excavated by

Captain R. Higham; six at Karranah, all from its rich Mound 2; and a single one at Saar's Southern Burial Complex (see Fig. 41). These were all, however, apparently quite wealthy interments; this is undeniable.

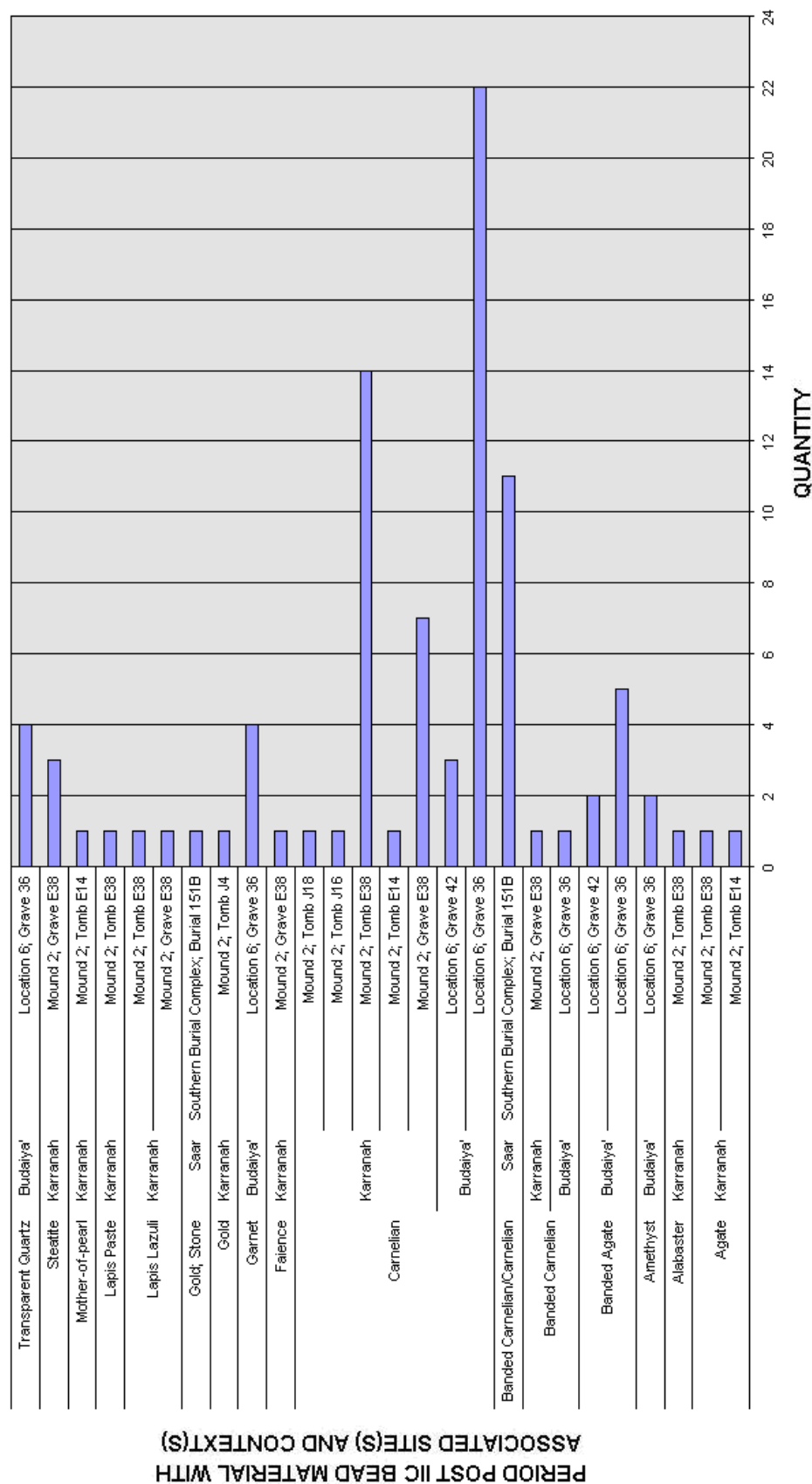
## **B. Evidence of Commerce and Affluence: Post IIc Bead Materials from Budaiya'**

The Budaiya' beads have been obtained from Captain Higham's Grave 36 and Grave 42, both at his Location 6 (see *During Caspers*, 1980: 14-15, 19-20, Pl. XXIII, Pl. XXIX). The beads from these burials have been treated herein (that is, generally throughout this work) as Post IIc specimens based upon a combined consideration of the type of the graves as well as the nature, material composition, and manufacturing traits of the beads themselves. However, that being stated, it should be borne in mind that the skeletal remains of Captain Higham's Graves 36 and 42 indicate that in the interments the deceased were laid outstretched upon their backs, a tell-tale feature of Tylos funerary practice (*During Caspers*, 1980: 32-33; Herling, 2000: 139). This makes it probable that Captain Higham's Graves 36 and 42 represent Tylos interments in reused Early Dilmun contexts, in which case the beads recovered from them may similarly be from the Tylos era or else Early Dilmun specimens reused in Tylos times (Højlund, pers. comm., 2013). Nonetheless, even if the beads are indeed from the Tylos era (putting aside any suggestion of reuse), it should be emphasized that this does not detract from the validity of arguments made with regard to the Post IIc beads, since beads from this sub-period have been contributed to the Bahrain sample by seven other contexts (i.e., those at Karranah and a single one at Saar), all of which have provided specimens in support of these arguments.

Retaining our Post IIc dating of the beads from Captain Higham's Graves 36 and 42, we will now consider them materially. The first observation to be made is that they are all mineral specimens: 25 carnelian examples (and an additional banded carnelian one), seven banded agate examples, two amethyst examples, and four cases respectively of garnet and transparent quartz (see Fig. 41). Certain materials, such as carnelian and garnet, were highly valued and for them to have been found in such numbers as they were does point to a show of wealth. Various origins could be posited for the minerals represented by the beads, but there is only one region where they all could have been obtained together: the Indus Valley. Apart from carnelian and such materials, garnet provides an especially strong case for an Indus

origin, with sources within vicinity of Kondapalli and in the Krishna-Godavari doab region (Dubin, 2006: 35; Francis, 2002: 118-119, 141).

The beads from Budaiya' may be taken, in entirety, as representing contact with Indus lands, and this at a time coinciding with the end of the Mature Harappan era. Despite the conclusion of this epoch in the Indus region, it seems the trade in raw materials (such as various stones) with Dilmun that had been going on for centuries persisted after a fashion, even if not to the same extent as it formerly did. After all, it is unlikely (though we will not state impossible) that Dilmun, experiencing a severe recession in both economic and social sectors during the Post IIc period, would have had the necessary resources and commercial reach to acquire the same materials it was used to obtaining from the Indus from a divers series of alternative sources.



**Fig. 41.** Breakdown of bead quantities representing Period Post IIC materials in the Bahrain sample along with associated sites and contexts. Beads identified as possibly either carnelian or banded carnelian are treated in a separate category from ones confirmed as being of these materials. It should be noted that this graph only takes into account those beads specifically assigned to Post IIC.

Of course, the Budaiya' beads could have been heirlooms passed down from a previous Early Dilmun epoch when the Indus trade was yet in full swing and Bahrain a prosperous participant in the same. It is in the nature of beads that they do not quickly go out of fashion and so often retain an "heirloom" quality about them, being passed on from generation to generation. In some cases, this is a possibility that must surely be considered. However, owing to the fact that all the burials from Post IIc were wealthy and shared certain materials between them, despite being far fewer in number than those of preceding Early Dilmun epochs, it seems extremely unlikely that with the eight burials spanning Budaiya', Karranah, and Saar (and Period Post IIc itself), we have chanced to find nothing other than those that have provided heirlooms. It is more likely that we are dealing with a reality of the times rather than items that were passed on and which are skewing our information.

### **C. Further Indications of Affluence: Post IIc Bead Materials from Karranah and Saar**

The Post IIc beads from Karranah in the Bahrain sample were acquired from six tombs, all a part of the site's Mound 2 (see Fig. 41). The carnelian amount gathered in total from these graves is comparable to the two from Budaiya': 24 beads and an additional banded carnelian case, all supporting continued contact with the Indus. We also have a bead of gold from Tomb J4 and two of lapis lazuli from other graves at Karranah; both materials, like carnelian, were much prized. The single faience bead from Grave E38 also represented a prestige material, despite being employed to imitate turquoise. This same burial has also provided two steatite beads. Thus we see that, unless such beads as lapis lazuli and steatite ones were heirlooms (and we have already shown how this is unlikely), it appears that trade links with Persia were still intact in Post IIc, thus bringing Persian steatite to Bahrain as well as lapis lazuli from Afghanistan and the Chagai Hills. On the basis of bead materials, Karranah's Mound 2 still appears to have been an interment site for the affluent in Post IIc, comparable (if not exceeding, based on the presence of particular materials and greater variety overall) in wealth to the two burials of Budaiya'.

At this point, it is appropriate to pause and consider what the affluent burials of Karranah imply. If indeed there is a connection between Karranah and the Saar Settlement, on the basis of trends in bead diaphaneity (as we have shown earlier in this chapter), how can rich burials continue to appear at Karranah at a time when the Saar Settlement was no longer in use (for its allotted occupation span seemingly extends from IIa to IIc)? Certainly the



Southern Burial Complex was still in use at this time, as evidenced by eleven regular or banded carnelian beads and a single bead of stone covered by gold-foil, all of which were retrieved from the Complex's Burial 151B (see Mughal, 1983: 95, 410). The use of carnelian and gold-foil indicates a relatively wealthy burial as well, along the lines of those at Budaiya' and Karranah. The dead for such continued use of the Complex must have been furnished by some nearby site, if not the Saar Settlement then perhaps another locale situated within similar proximity and apparently possessed of affluent individuals. Perhaps such a locale would explain the Karranah burials as well, and as we have already indicated, earlier use of Karranah need not have been at the hands of the Saar Settlement but a site with comparable diaphaneity tendencies (see Chapter 8.4). Of course, the other possibility is that the occupation of the Saar Settlement may have proceeded into the beginnings of Post IIc; however, as yet, there is no evidence to indicate this.

Whatever the explanation behind the situation at Karranah and the other Post IIc burial sites, it is nonetheless clear that a certain show of wealth still persisted at a time when Dilmun was suffering its lowest economic point. Such a low is indeed visible in the manner that it affected urban and burial sites, including the use of these (e.g. the lack of new burials at a great many cemeteries and the end of the Saar Settlement's occupation), leading to very few (albeit still rich) bead finds from this period.

## **Period III and Its Subdivisions**

### **A. The IIIb Faience/Glass Bead from Qala'at al-Bahrain and Observations Regarding the Contemporary State of Near Eastern Glass Industries**

It has generally been assumed that Period III (i.e., Middle Dilmun) saw some improvement in the fortunes of Bahrain despite being under the sway of the Kassite kingdom of Mesopotamia (Lombard, 2000b: 108-110). In terms of the Bahrain sample, such improvement is not very evident. Certainly a number of beads in the sample do derive from Period III, as mentioned in the last chapter: all IIIa specimens from Graves 150, 150A, and 150B at Saar's Southern Burial Complex except for one IIIb bead from Room 3 of Building I of the Danish Expedition's Excavation 519 at Qala'at al-Bahrain (see Fig. 42) (see Højlund, 1997e: 73, Fig. 301; Mughal, 1983: 90-92, 399-404). There is also a single carnelian bead (B366) from the Danish Expedition's Excavation 520 at Qala'at which could belong to either

Period II or Period IIIb; owing to this dating uncertainty, it will not be included amongst the strictly Period III beads being considered at present (see Højlund, 1994c: 392, Fig. 1966).

The single bead (B385) from Excavation 519 at Qala'at, either of faience or glass, is aquamarine in colour. In the case of either of its two possible materials, the hue suggests that it may have acted as a turquoise imitation, and that the value accorded turquoise persisted throughout the Middle Dilmun era (if the bead is of IIIb date). Of course, a glass bead would have been a "higher quality" version of the imitation achieved by faience (Lankton, 2003: 46).

Several important observations can be made about glassmaking and glassworking in relation to the chronological period covered by Middle Dilmun. The first of these is the increase in the availability and quality of glass products, a change which saw its beginning between 1700 and 1500 BCE, two centuries spanning part of Period Post IIc and part of Period III (see Bienkowski and Millard, 2000: 129; Lankton, 2003: 45). Glass products became much more common at this time, though (as noted earlier) the material continued to maintain its status as a prestige good throughout the rest of the 2<sup>nd</sup> millennium BCE.

It is important to consider the role played by the Mitanni Kingdom in the political and economic environment of the Near East at the start of and following the initial appearance of the glass boom, particularly since they controlled a vast region covering the Eastern Mediterranean as well as much of Mesopotamia between 1600 and 1350 BCE (Bienkowski and Millard, 2000: 150; Lankton, 2003: 40). The Hurrianians of the Mitanni Kingdom also affected the economic environment, specifically the glass trade, following the immediate increase in availability of glass products (Dubin, 2006: 38). They brought further emphasis to the glassmaking and glassworking sites of West Asia. The situation remained thus during the Mitanni Kingdom's decline and till shortly after the start of the last quarter of the 2<sup>nd</sup> millennium BCE, when the Near East entered a three-century eclipse in the making and usage of glass; this led to a disruption in the material's production (Lankton, 2003: 47). Glass manufacture continued at only a few sites, and on a far lower scale, such as at certain locales in Egypt or the sites of Hasanlu and Marlik situated close to Lake Urmia and in the Elburz Mountains respectively (Bienkowski and Millard, 2000: 140-141, 190; Henderson, 1995: 71; Lankton, 2003: 47; Negahban, 1998: 43-55).

Period III on Bahrain came to an end whilst the glass trade in the Near East was in the state just described. If the single bead mentioned above is indeed of glass, it may represent a product of the earlier part of Period III, or else a stray find from the later part (possibly associated with one of the few remaining locales of that time that still produced glass items);

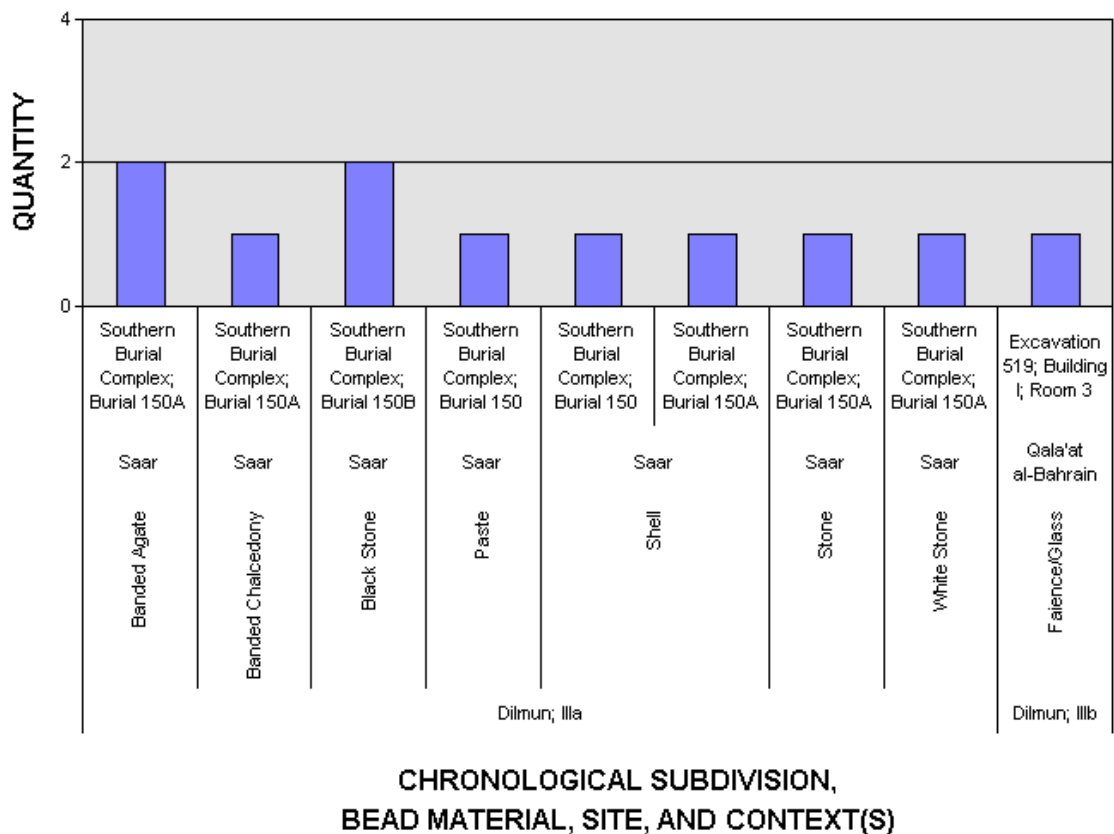
but nothing significant. Actually, the lack of glass bead finds (apart from an uncertain case) from Period III Bahrain supports the disruption allocated to the final centuries of the 2<sup>nd</sup> millennium BCE. However, if the bead belongs to Period II (rather than IIIb), then there would be no issue with it possibly being of glass.

## **B. Materials Exhibited by Ten Middle Dilmun Burial Beads**

The remaining ten Middle Dilmun beads all came from IIIa reuses of the older Early Dilmun Graves 150, 150A, and 150B at Saar's Southern Burial Complex (see Fig. 42). In addition to mineral examples such as two cases of banded agate, a single specimen of banded chalcedony, and those of various stones, the IIIa beads also include ornaments made from local materials that were readily available (even inexpensive), such as shell (obtained from the waters surrounding Bahrain) and paste.

It is quite possible that, due to grave reuse, the banded agate and chalcedony beads are remnants of the burial assemblage that formerly occupied the grave they came from (prior to its refurbishment as a IIIa burial). This would be in line with the materials, which seem to point to the Indus and so likely a time when the connection between Bahrain and the Harappan region was stronger. Or else, they could represent a weaker yet present connection with Indus lands following the Mature Harappan epoch. Of course, Dilmun could have acquired the materials or beads made of them from alternative sources (and several have been mentioned above) in the post-Mature Harappan era, which is an equally feasible possibility if things were beginning to "pick up" for it economically.

The smaller array of Period III bead materials, compared to Period II and its chronological subdivisions/ranges, may be seen as simply reflecting the fewer bead-producing contexts excavated that belong to the era. Whilst seemingly few materials may not imply a great deal, certainly the lack of contexts does seem to represent Dilmun's social and economic situation as not having recovered much from the pre-III "rock-bottom". This is the case at least as far as the Bahrain sample is concerned. In other respects an improvement may indeed be discernible (see Lombard, 2000b: 108-110).



**Fig. 42.** Breakdown of bead quantities representing Period III materials in the Bahrain sample along with associated sites and contexts. B366 is not taken into account in the graph, since it could belong to Period II rather than Period III. Moreover, it should be noted that this graph only takes into account those beads that can be specifically assigned to the Middle Dilmun era.

## Period IV and Its Subdivisions

### A. The Socio-Economic Improvement Indicated by Period IV Bead Materials

Unlike Period III, Period IV (i.e., Late Dilmun) has a more considerable presence in the Bahrain sample. It is also more indicative of some recovery of social and economic structure on Dilmun's behalf. It has been stated that though Dilmun was the vassal of several West Asian states at this time, the control exerted over its fortunes was more nominal than conspicuous (Lombard, 2000c: 116). It has also been stated that this allowed a measure of recovery (Lombard, 2000c: 116). Even when such nominal control was lost, as under the Achaemenians, a return to a cosmopolitan environment of trade was achieved that made up

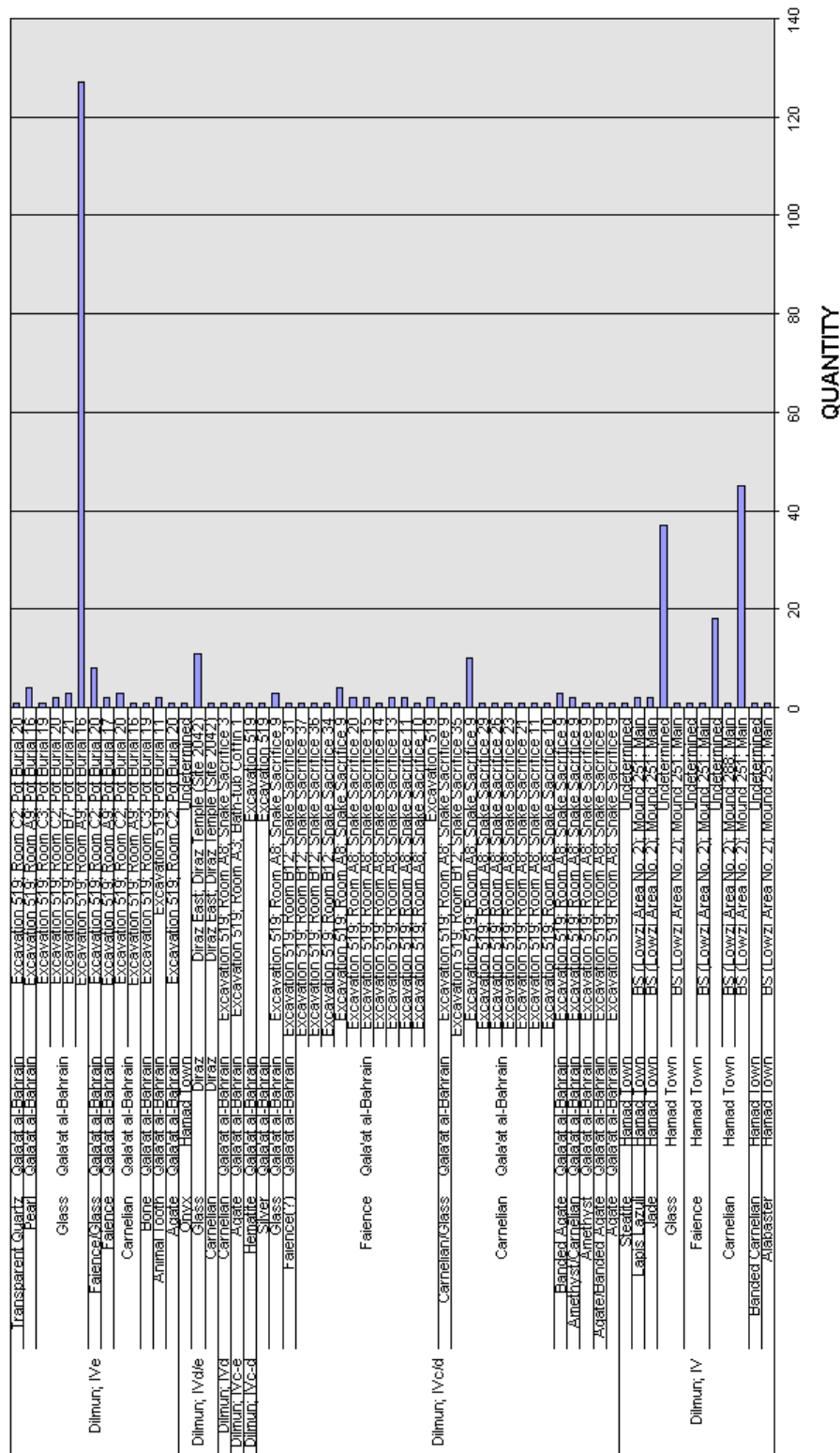
for the loss (Lombard, 2000c: 118). The beads do not disappoint when traces of such recovery are sought. Certainly they do not approximate the range, diversity, and numbers attributable to different bead materials, colours, and the like in the Early Dilmun period. However, they do represent a remarkable resurgence indicating a level of social and economic abundance not visible since prior to Period Post IIc. This is appropriate, given a comparable return to an appreciable level of “cultural plurality” (see Lombard, 2000c: 119). We see its indications in the number of Period IV contexts that have produced beads, the increased diversity of materials used for ornamentation in comparison to Periods Post IIc and III (that is, 18 distinct kinds), and the numbers by which particular materials were represented at Hamad Town and Qala’at al-Bahrain (see below).

#### **B. Period IV Bead Materials from Hamad Town: Some Observations on Carnelian and Black-and-White Onyx**

Hamad Town, not represented in the Bahrain sample in connection with Periods Post IIc and III, has contributed a number of Period IV beads. Nine different Period IV bead materials from this site are represented in the Bahrain sample (see Fig. 43). The most prominent is carnelian, with 64 beads of this material (and an additional one of banded carnelian). The second most prominent is glass, with 38 cases. Three agate beads have also been identified, and either one or two beads respectively of alabaster, faience, jade, lapis lazuli, black-and-white onyx, and steatite.

Carnelian, the most numerous material, seems to have retained its value as an inherited aspect of Dilmun culture, present since Period II, and perhaps further augmented by the lack of availability of such material in abundance following the end of the Mature Harappan era in the Indus. Further proof of this can be found in considering Period IV carnelian amounts from other sites, which we will shortly turn to.

PERIOD IV BEAD MATERIAL WITH ASSOCIATED SITE(S) AND CONTEXT(S)  
ORGANIZED CHRONOLOGICALLY



**Fig. 43.** Bead quantities representing Period IV materials along with the site(s) and context(s) of each, organized by means of chronological consideration. Beads B367, B368, B374, B4115, B4116, and B4117 are not amongst the numbers shown in the graph, since they could belong to a chronological era other than Period IV.

It appears contact with India, and particularly the lands formerly dominated by the Indus civilization, was re-established or else reinvigorated (if there had never been a hiatus) during Period IV. The significant amount of carnelian beads, and the presence of those of related materials such as agate and black-and-white onyx, supports this (see Fig. 43). Black-and-white onyx requires a sulphuric rather than sugar solution for its production (Francis, 2002: 13). The deliberate creation of such an onyx has been identified as a feature arising during second half of the 1<sup>st</sup> millennium BCE (Francis, 2002: 13). It therefore represents an item making its appearance at the very end of Period IV. It is, moreover, an obvious feature of contact with India, which is where a great deal of the banded agate used for the production of all types of onyx originated (see Dubin, 2006: 35; Francis, 2002: 109, 119). Prior to the appearance of black-and-white onyx, brown onyx was the only variety produced; and we have an example from Period II in the Bahrain sample. We also have another example from Period II which seems to be a black-and-white onyx, but owing to its dating is likely a brown onyx that had been accidentally turned dark rather than a true black-and-white specimen.

### **C. Period IV Glass Beads from Hamad Town**

That glass should form the second most prominent Period IV bead material from Hamad Town is not surprising, given that we are dealing with the 1<sup>st</sup> millennium BCE (see Fig. 43). As was mentioned above, the production and trade of glass and glass products suffered towards the end of the 2<sup>nd</sup> millennium BCE. The Assyrians and Babylonians, dominating northern and southern Mesopotamia respectively, both suffered a shortage of luxury items and prestige goods during that time (Lankton, 2003: 47). During the 9<sup>th</sup> century BCE, however, the Assyrians had recovered considerably and had re-established the demand for luxury goods, including glass, thereby reinvigorating the international trade in such items (Lankton, 2003: 47; Von Saldern, 1966: 7).

Similarly the Greeks recovered at this time from a “dark age” and West Asia was once more reasserting itself as a region renowned for glassmaking and glassworking (Lankton, 2003: 47-48). Greek colonies in Anatolia, West Asia, and even Egypt took part in the making and movement of glass beads (Lankton, 2003: 47-48). The Phoenicians were equally prominent in the glass bead trade at this time (Dubin, 2006: 30, 48; Von Saldern, 1966: 6).

The glass bead quantity of Period IV in the Bahrain sample represents the effects of the revival of glass beadmaking that heralded the start of Late Dilmun as well as the

international trade that accompanied it and its “prestige” appreciation; for which reason it comes second only to carnelian, but is preferred over other materials as a mark of luxury.

The primary hue associated with the Period IV glass beads from Hamad Town is also quite relevant: of the 38 beads, all are of a dark hue except for a single green specimen (see Fig. 44). Whilst the green bead may proceed in the tradition of turquoise or faience imitation, the dark beads represent a continuation of that same preference for dark hues or black which was an important feature of glass ornaments even in Period II. Such a preference, as shall be shown below, existed throughout the Tylos era as well. Apart from hues employed to imitate lapis lazuli or turquoise, dark colours seem to have been the main staple of ancient glass beads in Bahrain.

#### **D. Period IV Jade and Lapis Lazuli Beads from Hamad Town**

Two jade beads have been recovered from Hamad Town’s Mound 251, located in the BS area (that is, the Lowzi No. 2 area) (see Fig. 43). This burial was quite an impressive one from the standpoint of bead materials; a significant portion – the majority, in fact - of Hamad Town’s Period IV carnelian contribution to the Bahrain sample came from it (45 out of the 64 total) as well as beads of other costly materials such as lapis lazuli and the jade just mentioned.

Jade beads were occasionally encountered in the ancient Near East, and one early example has been found that dates to the close of the 4<sup>th</sup> millennium BCE (Lankton, 2003: 45). However, whilst stones with a green hue (and especially turquoise) were given high value in the Near East, no jade or any other such stone was deemed as important as it was in the jade culture of Central America (Lankton, 2003: 45). They were nonetheless given enough importance to warrant high prices and imitation by faience or glass.

The Far East as well as South-East Asia may be looked to for prominent jade sources. China is our best bet for having provided the material that eventually took shape as our two jade beads, as it is the region associated with most Asian jade (Francis, 2002: 150). And if direct contact is deemed unlikely, then it is possible that the material trickled into India from China and so found its way to Dilmun through such channels. Whilst it has been stated that actual jade “may be either nephrite or jadeite . . . the only variety used in ancient China was nephrite, with its major sources in far western Xinjiang Province” (Lankton, 2003: 29). The



two jade beads from Hamad Town's Mound 251 may therefore be considered a form of nephrite, originally obtained from deposits in the Chinese region named.

Two lapis lazuli beads have also been excavated from Mound 251, representing the presence of this material to which we have already referred above (see Fig. 43). Such beads, like the Period IV steatite specimen from an undetermined context within Hamad Town (see Fig. 43), all point to continued or reinvigorated contact with Persia (and, for lapis lazuli, through Persia with Badakhshan or the Chagai Hills). Though more accurate dating is lacking, it is quite possible that the beads represent the strong Persian connection of the Achaemenian phase of late Period IV; though they could equally represent a Persian connection existent during the earlier subdivisions of IV when Dilmun was in turn a vassal of various Mesopotamian states.

#### **E. Bead Materials from the Neo-Babylonian Tomb at Diraz**

Also to Period IV belong the twelve beads from the Neo-Babylonian tomb adjoining the eastern side of the Early Dilmun Diraz Temple (see Fig. 43). These beads, all from the mid-1<sup>st</sup> millennium BCE or slightly thereafter, represent primarily a collection of glass ornaments, with a single carnelian exception. Much has already been mentioned about the implications of carnelian in Period IV. Seven beads from the tomb combine shades of cream, grey, and white (see Fig. 44). The glass beads from the Neo-Babylonian tomb follow the preference for dark beads in three cases, and somewhat follow it in a fourth. We state "somewhat" because though a dark hue features prominently in the fourth bead as well, it also possesses inclusions of white which make it an evident black-and-white onyx imitation. It should be pointed out that this, alongside other onyx imitation cases from Qala'at al-Bahrain (see below), are the earliest examples of such deliberate attempts at copying the appearance of this man-modified stone in the Bahrain sample. Thus this particular tendency can be identified as appearing on Bahrain towards the end of Period IV, and is quite telling of the value seemingly associated with onyx in Late Dilmun culture. Given that onyx suggests trade links with India, these imitations (like true Period IVd/e black-and-white onyx, found in the Bahrain sample) seem to further support the visible ties with the Indian Subcontinent in the Late Dilmun era.



The tomb seems to represent some inclination towards India, particularly in terms of carnelian and the taste for imitation black-and-white onyx; however, the materials portray a focus that possesses traits of both South-East Asia and the Near East. This comes through in the substantial number of glass beads, some possibly of the Indo-Pacific variety (see the Tylos section below for more on this kind of specimen) whilst others likely of West Asian origin where important centres of glassworking and beadmaking functioned in the 1<sup>st</sup> millennium BCE (see Lankton, 2003: 47-48).

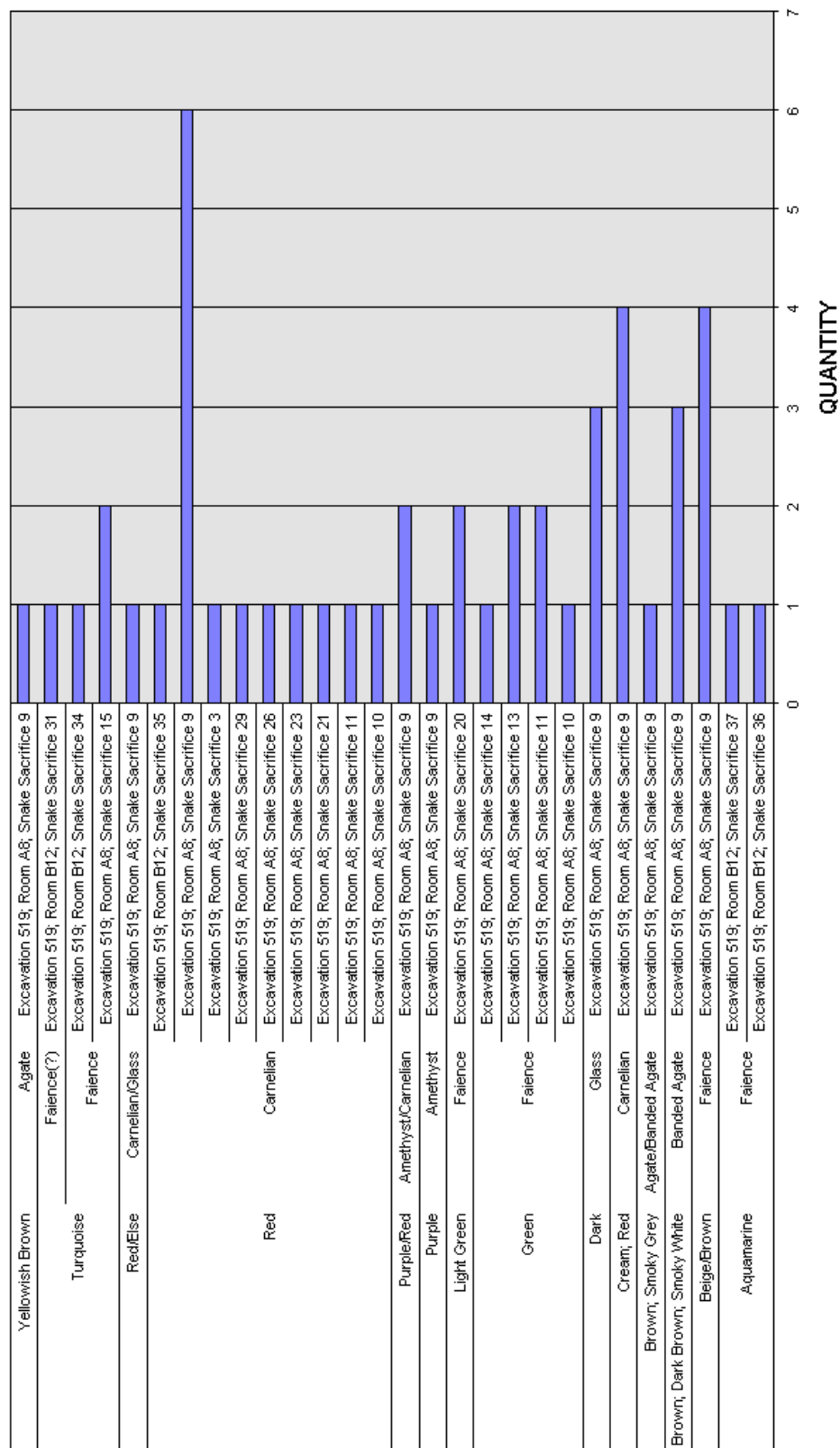
It is also possible that a local glass workshop, perhaps one based in the geographic zone delineated above (covering a region across burial sites close to Bahrain's "fertile strip" and reaching 'Aali), if such had survived or recovered from Dilmun's social and economic decline, may have been responsible for the Neo-Babylonian glass beads as well as the abundant Period IV examples from Hamad Town. Though, of course, for the same one to have been catering to Hamad Town in Period IV, both survival and expansion would have been necessary. For the industry's reach would have had to encompass the cemetery at Hamad Town and not just 'Aali; perhaps even Bahrain as a whole. Such a survival is unlikely, given what we know of Bahrain's severe socio-economic condition in Period Post IIc. It is therefore more probable that a different glassworking centre was responsible for these beads or else the beads were brought to Bahrain from abroad. Nonetheless, the preference for dark glass beads, which seems quite prevalent amongst both Dilmun and Tylos beads in the Bahrain sample, is borne through somewhat in some of the specimens from the Neo-Babylonian tomb, though the majority is of a lighter cream-grey-white combination.

#### **F. Period IV Glass Beads from Qala'at al-Bahrain**

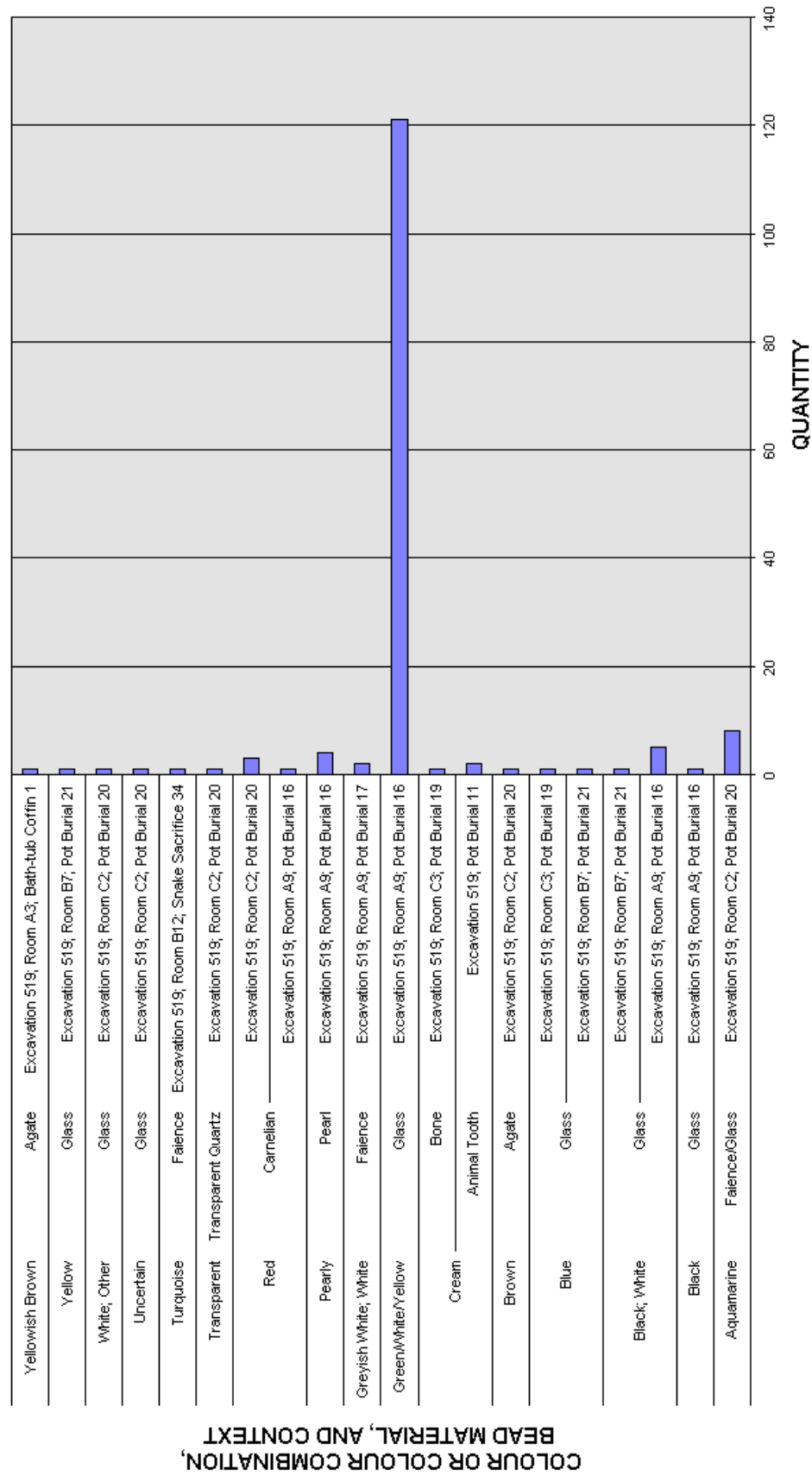
Most (the majority by only a slight difference compared to Hamad Town) of the Period IV beads in the Bahrain sample were obtained from Qala'at al-Bahrain. Unlike Hamad Town, glass represents the most common Period IV bead material at Qala'at, with 136 specimens definitely made of this material (and a few other cases possibly of the same) (see Fig. 43). Only three glass beads (not counting a possible additional one) have been recovered from the Snake Sacrifices belonging to either IVc or IVd; all three from Snake Sacrifice 9, excavated in Room A8 of Excavation 519 (see Højlund, 1997h: 136-137). The three beads are of dark hue. The rest of the Period IV glass beads from Qala'at were all obtained from Excavation 519 Pot Burials, specifically: Pot Burials 16 (Room A9), 19 (Room C3), 20

(Room C2), and 21 (Room B7) (see Fig. 46) (see Højlund, 1997i: 154-157). 127 glass beads – the largest amount – came from Pot Burial 16, of which 110 appear to be of the Indo-Pacific variety. There are also eight specimens which are either of faience or glass, and which came from Pot Burial 20 (along with other specifically glass beads) (see Højlund, 1997i: 156-157).

Whilst it may be granted that three beads are not much to go on, all three from Snake Sacrifice 9 seem indicative of the preference for dark hues present since Period II (see Fig. 45). The Pot Burials, belonging to the IVe subdivision of Late Dilmun, have only exhibited indications of such a preference in one case (a black bead – B459) and six black-and-white beads; these were all acquired from Pot Burial 16 with the exception of a single black-and-white case from Pot Burial 21 (see Fig. 46). The black-and-white beads are onyx imitations, being further examples of such Period IV tendencies towards copying the hues and appearance of this man-modified agate. Various other hues may be noted amongst the Pot Burial glass beads, including two blue cases and a number of green ones (see Fig. 46). Green-hued glass beads have already been suggested as “higher quality” alternatives to faience, whilst specifically blue beads suggest themselves as lapis lazuli imitations. Regarding the eight beads which are either of faience or glass, if they are indeed of the latter then they would certainly justify as “higher quality” faience imitations, not simply because of hue but the added observation that confusion with faience has been caused by their appearance.



**Fig. 45.** Bead quantities representing different colours or colour combinations and the materials accompanying these from the Period IV Snake Sacrifices at Qala'at al-Bahrain.



**Fig. 46.** Bead quantities representing different colours or colour combinations and the materials accompanying these from the Period IV human interments at Qal'a'at al-Bahrain.

## **G. Period IV Carnelian and Faience Beads from Qala'at al-Bahrain**

Another major Period IV bead material at Qala'at al-Bahrain is carnelian, with 22 definite cases (see Fig. 43). Three additional beads could also possibly be of carnelian. Beads of this material have been found in both the Snake Sacrifices and Pot Burials (though only four out of the 22 or 25 total have come from two burials of the latter type) (see Højlund, 1997h: 134-142; Højlund, 1997i: 154-157). In many cases, only single specimens have been found in a given context; the most has been ten (possibly eleven) beads from a single Snake Sacrifice (No. 9) (see Højlund, 1997h: 136-137). Like the Period IV carnelian beads from Hamad Town, the ones from Qala'at again indicate the resurgence of strong trading ties with India; ties that have also been illustrated through the availability of black-and-white onyx in late Period IV as well as the production of black-and-white onyx imitations. Such ties are further supported by the presence of agate and banded agates (three, possibly four, cases of each of these) at Qala'at al-Bahrain as well as amethyst and transparent quartz (one, possibly three, cases of the former and a single case of the latter).

Another quite prevalent bead material is faience, with 21 definite cases and nine possible additional ones (see Fig. 43). Indeed, if many of the possible cases are indeed of faience, this material may well outnumber carnelian in Period IV contexts at Qala'at. Despite occasional other hues (such as beige/brown or greyish white), most of the Period IV faience beads at Qala'at are green or a shade of green (such as light green, aquamarine, or turquoise) (see Figs. 45-46). The Period IV turquoise-hued faience beads from Qala'at seem to be some of the best turquoise imitations thus far encountered in the Bahrain sample, approximating more readily than others the hue of the actual mineral. Despite the eight beads already mentioned above, some or all of which could be of glass, the green-hued Period IV faience beads from Qala'at were all recovered (with one exception) from Snake Sacrifices (see Højlund, 1997h: 134-142).

## **H. The Presence and Absence of Materials: A Re-Examination of Bibby's Hypothesis Explaining the Snake Sacrifices**

The various hypotheses put forward regarding the nature of the Snake Sacrifices have already been recounted in Chapter 7.6 and an additional hypothesis in favour of the Mesopotamian Netherworld god Ningishzida also suggested. The hypothesis put forward by

Bibby is that pearls were employed in the Snake Sacrifices, based on an interpretation of the *Epic of Gilgamesh*, and that faience beads (referred to by him as “turquoise”) were used as substitutes for pearls by the poor (Bibby, 1996: 120-121; Højlund, 1997h: 143-144; Potts, 1990: 321; Potts, 2007: 65). Snake Sacrifices without beads were those that originally contained actual pearls, according to Bibby, who suggested they were absent because pearls do not usually preserve well in archaeological contexts (1996: 120-121).

There are certain difficulties with this interpretation of the Snake Sacrifices, however. First of all, faience, whilst not retaining the value it once had as a prestige good and further devalued by the rise to prominence of glass, was still not necessarily a representative of poverty; if it were, it would not be included amongst other more costly materials in the necklace of Snake Sacrifice 9 (see Højlund, 1997h: 136-137).

The second difficulty comes from the absence of any material proof of a connection between pearls and the Snake Sacrifices. Bibby has suggested that a single specimen was found in a “later one”, but no such pearl was noted amongst the contents of the Snake Sacrifices we are dealing with and which have been documented in a publication of the finds (see Bibby, 1996: 120; Højlund, 1997h: 134-142). That they can survive despite spending millennia in the harsh climate at Qala’at al-Bahrain is proven by the four pearl beads from Pot Burial 16; and these date to Period IVE, not long after the time of the Snake Sacrifices and still within the Late Dilmun epoch (see Fig. 43) (see Højlund, 1997i: 154-155, Fig. 716). Though pearls are known for preserving poorly in archaeological contexts, we may thus assume that the environment at Qala’at was not wholly inimical to their doing so. The same has been noted regarding the Saar Settlement (Moon, 2005: 180).

Finally, it is particularly important to note that all Snake Sacrifices that contained an ornament or more produced beads rather than any other type of deposited material (whether worked or unworked); this seems to lend credence to the “bead” form having had some significance in the context of the Sacrifices.

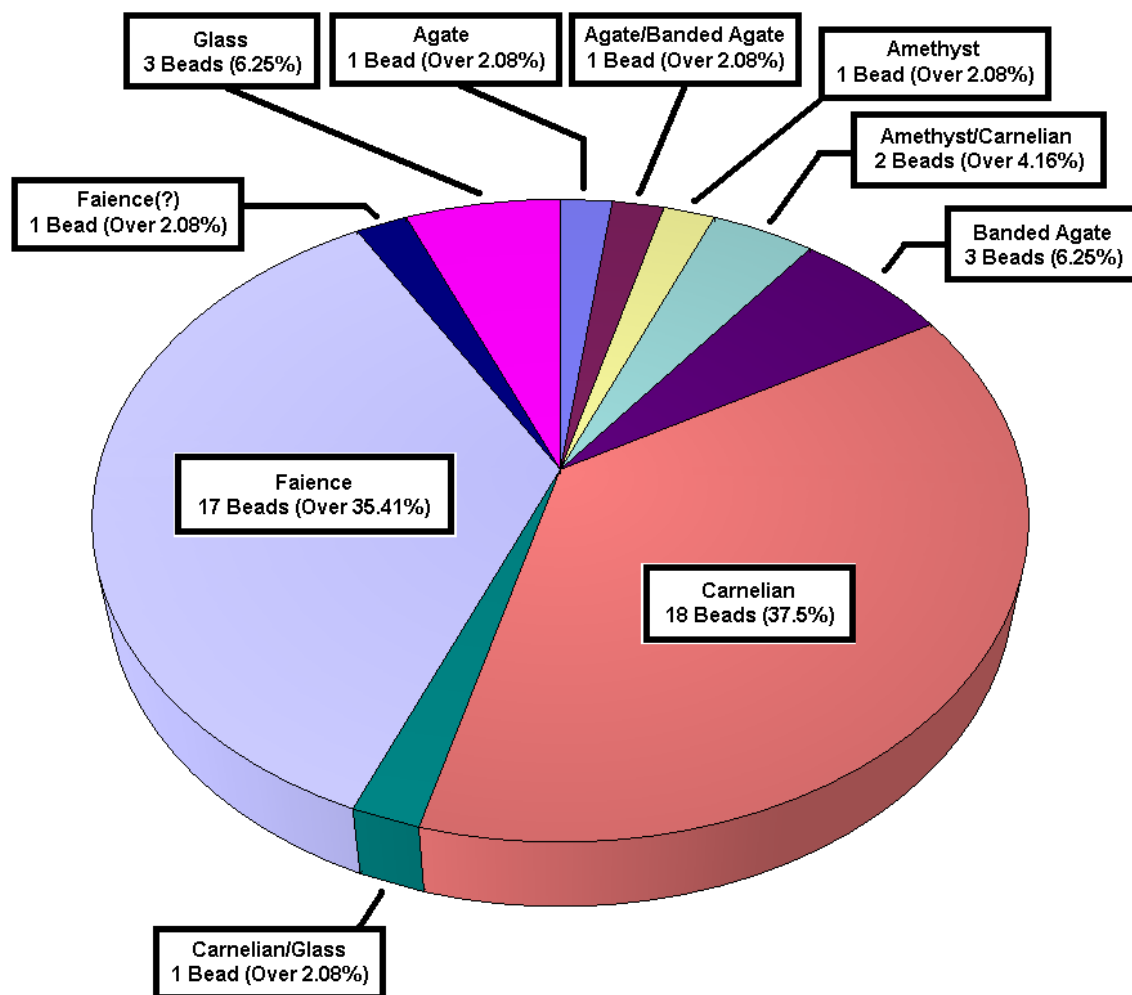
The above arguments seem to detract from Bibby’s hypothesis; the Snake Sacrifices without any beads may simply have represented disturbed ones (for many were found on their sides or broken when excavated) or else never contained any ornaments (such as beads) at all.



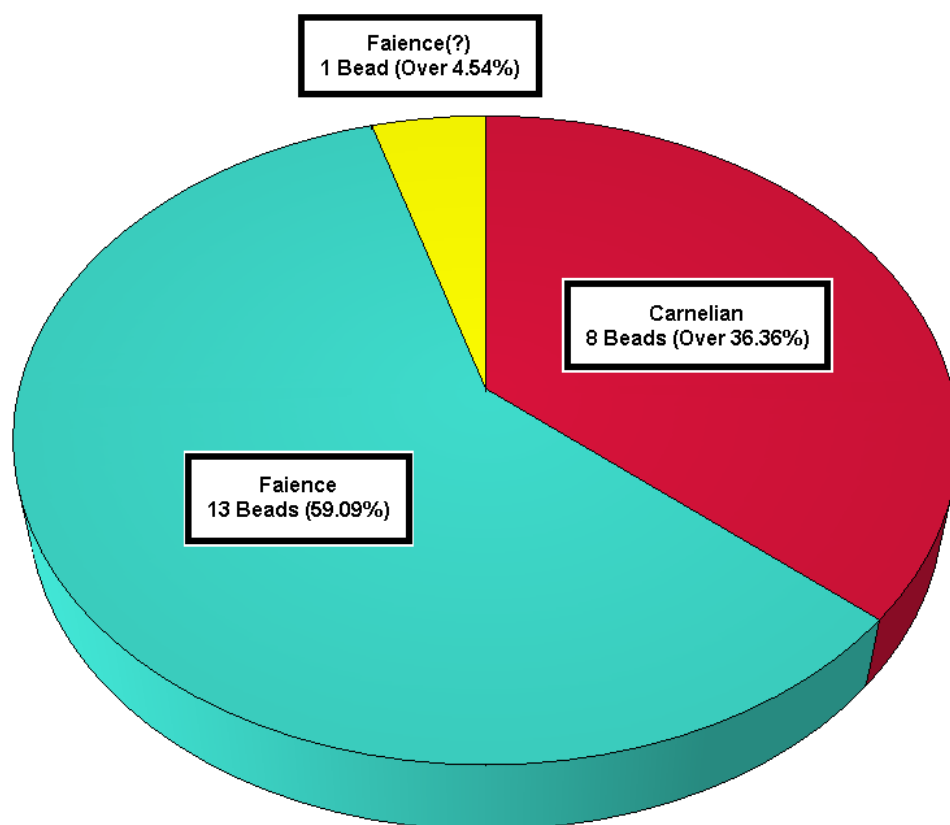
## **I. Relative Value, Bead Materials, and the Significance of Beads in the Snake Sacrifices at Qala'at al-Bahrain**

Regardless of which hypothesis proffered for the Snake Sacrifices is correct, if indeed any are, one thing is certain: the inclusion of beads in Snake Sacrifices was based on the relative value attributed to the objects. This has also been illustrated in Chapter 7.6 and suggested by the inclusion of various amounts of beads (including an entire necklace in one case) in the Snake Sacrifices. Thus the value attributed to a particular bead or bead material was of prime importance.

To this a second observation may be added: with the exception of the necklace found in the context known as Snake Sacrifice 9 (which was comprised of six different materials – agate, banded agate, amethyst, carnelian, faience, and glass), the 16 remaining Snake Sacrifices that have produced beads contained examples representing only two particular materials: carnelian and faience (see Figs. 47-48) (see Højlund, 1997h: 134-142). And of these remaining Snake Sacrifices, only Nos. 10 and 11 contained both carnelian and faience; that is, two of these most prevalent bead materials (see Fig. 43). The rest – 14 out of 16 – contained only one of them; this may be attributed, despite a few exceptions, to most of these remaining Snake Sacrifices containing only a single bead. Thus having 16 Snake Sacrifices representing only two bead materials (and the additional Sacrifice containing a necklace also containing the two materials amongst its six) seems to highlight the importance of the two in terms of the beliefs behind such a practice.



**Fig. 47.** Pie chart displaying the material breakdown of the beads from the Snake Sacrifices at Qala'at al-Bahrain with amounts and percentages indicated. All percentages are those obtained against the backdrop of the total number of beads from the Snake Sacrifices (that is, 48 beads).



**Fig. 48.** Pie chart displaying the material breakdown of the beads from the Snake Sacrifices at Qala'at al-Bahrain with the exception of the specimens from Snake Sacrifice No. 9. Amounts and percentages are shown, with the latter obtained against the backdrop of 22 beads (i.e., the total number of Snake Sacrifice beads excluding those excepted).

The presence of faience and glass amongst the total number of materials found in the Snake Sacrifices indicates that not only stones were regarded as appropriate, but also synthetic substances. A particular hue seems also not to have been preferred, for in addition to the reds of carnelian and the creams of etched carnelian, a number of other hues are also represented.

Some preference may have existed for green (since 14 green or green-based – that is, aquamarine and turquoise – beads have been recovered from the Snake Sacrifices), but it is difficult to determine anything definite in this regard since green hues are common to faience (see Fig. 45). However, if such a preference is indeed relevant, then perhaps an association may be posited between it and Ningishzida, the Netherworld god suggested in the previous chapter as possibly linked to the Snake Sacrifices. Apart from being a Netherworld deity, Ningishzida was also a fertility god associated in iconography not only with serpents but trees as well; in fact, his name can be translated as “Lord of the Steadfast Tree” (Bertman, 2003: 123; Van Buren, 1934: 65-76). A further parallel to this may be found in Inzak, patron god of Dilmun, who was Lord of Date-palms and whose icon consisted of a palm frond (see Al Nashef, 1986: 346; Glob, 1954a: 103; Rice, 1994: 30-32, 141-143). A link between green hues and Ningishzida (and/or even Inzak) may not be too far-fetched, given their “tree” connotations, and may indeed explain the prevalence of faience in the Snake Sacrifices as well as the importance of green and similar hues (as well as the materials and beads associated with these hues) throughout the various Dilmun periods and in the Bahrain sample as a whole (which has been noted earlier). New light may thus be shed upon the roles played by faience, turquoise, and green glass in Dilmun (and perhaps even Tylos).

Of course, further evidence in aid of the above connections between green hues and Ningishzida (and/or Inzak), particularly from Dilmun and other contexts, is necessary before anything definite can be asserted. If substantiated, they might provide insights into some of the older roots of the al-Khidr figure, the Green Man, who is so prominent in Islam and whose shrine on Failaka – once the site of a Dilmun colony - may be more than coincidentally located (based on what has been suggested above). Though the shrine’s structure has since been destroyed, it was still standing at the time of the original Danish Expedition’s work on Failaka (see Bibby, 1996: 148, 153-154, 184, 188-189).

In terms of the Snake Sacrifices, the two particular materials – carnelian and faience – do seem to have had some sort of significance. This may partly – but not necessarily entirely – have been associated with their relative values at the time they were placed in the Snake

Sacrifices, as suggested by the inclusion of an entire necklace and particular materials. Carnelian retained great value throughout the various Dilmun periods, and Period IV seems to not have been very different (as the prevalence of Period IV carnelian from both Hamad Town and Qala'at al-Bahrain shows). But if value was so central to the inclusion of beads in the Snake Sacrifices, why were some without any beads or ornaments at all? The possibilities of such Sacrifices having been disturbed or essentially without ornaments have already been mentioned. The latter case, if correct, suggests that adding a costly offering was not essential to the practice of making Snake Sacrifices; however, when added, value was a prime consideration.

The importance given to the offering of something valuable may be traced back to the story of Ningishzida and seems to support a link between the story, the Netherworld god, and the Snake Sacrifices at Qala'at al-Bahrain. In the tale, Ningishzida's sister offers the lapis lazuli beads at her waist to the demon accompanying him on the barge bound for the Netherworld (see ETCSL, 2006b: t.1.7.3.38-44; Shushan, 2009: 80).

We have already shown the link between Ningishzida and serpents as well as beads. But if such an association holds, why were lapis lazuli beads not offered in the Snake Sacrifices as they were in the tale? Whilst at the time of the original tale's composition lapis lazuli beads were not only held in high regard but more readily available, the shortage the material suffered at the end of the 3<sup>rd</sup> millennium BCE and which persisted thereafter would explain the different materials used in the Snake Sacrifices. Whilst lapis lazuli was yet available, and we even have two Period IV examples from Hamad Town (see Fig. 43), it was not as abundantly obtainable as it once was; hence, and holding value as a prime factor based on the nature of beads as a "price" in the Ningishzida tale, alternative highly valued materials would have been employed instead. The use of an entire necklace and of carnelian would have been in line with this. It is a long stretch to regard the aquamarine beads of the Snake Sacrifices as lapis lazuli imitations, though not necessarily impossible.

## **J. Other Period IV Bead Materials from Qala'at al-Bahrain**

A number of other materials have also been noted in Period IV contexts at Qala'at al-Bahrain. These include a single hematite bead and another made of silver; both were recovered from Excavation 519 (see Fig. 43). Two animal tooth beads were obtained from Pot Burial 11 and a single bone bead from Pot Burial 19; these were the only ornaments from

their respective interments (see Fig. 43). These would have been crude products in the era and environment (i.e., Late Dilmun) in which they were manufactured. When placed against the more costly materials found in other Pot Burials, one begins to perceive that the rooms of the Qala'at palace used for such interments were not limited to the wealthy but available to those with more meager means. Since the Pot Burials were not made until after the palace had been abandoned (certainly before Period IVe to which the burials date), it seems the interment site thus produced was open to all and catered not to a particular economic or social class.

Four Period IVe pearl beads have also been obtained from Pot Burial 16 (see Fig. 43). These are the earliest pearl beads found in the Bahrain sample. Whilst Indian pearl sources (such as the fishery at Korkai) and others (e.g. those of Sri Lanka) were well-known, not to mention easily accessible to Dilmun, there is no need for us to look far for something so readily available off the shores of Bahrain (see Dubin, 2006: 298; Francis, 2002: 8, 119-122, 159-162). The Arabian Gulf has a remarkably important place in the history of pearl-fishing and Bahrain has held a special place in this regard from antiquity down to the last century (Carter, 2005b; Ricks, 1970: 342-343, 353, 355). The pearls of Dilmun may have been renowned as far back as the late 3<sup>rd</sup>/early 2<sup>nd</sup> millennium BCE, when references to “fish-eyes” in Mesopotamian economic texts may have indicated them (Bibby, 1996: 137). Such an ancient connection between Bahrain and pearls has led to the interpretation of the pearl as central to the *Epic of Gilgamesh* and Bibby to posit the above hypothesis involving pearls to explain the Snake Sacrifices at Qala'at (Bibby, 1996: 114-115, 120-121). Despite very early connections having been suggested, no pearls older than the Late Dilmun ones from Pot Burial 16 have yet been found on Bahrain.

## **Period V: The Tylos Era**

### **A. The Socio-Economic Environment of Bahrain in Period V**

The nominal allegiance owed by Bahrain to the Mesenians, Parthians, and Sasanians during almost a millennium between the end of the Late Dilmun period and the arrival of Islam on the Islands has been described as a thin veneer disguising an almost “autonomous” state (Salles, 2000: 135). This is not to deny an official control or influence exerted by its northern neighbours, but rather to emphasize its existence as an economically and socially contained environment that regained its former status as a commercial crossroads, which it

had once held in the Early Dilmun period, and once again its merchants sought to bring together Mesopotamia and the Indian Subcontinent. But no longer was this trade between the Ur III dynasty of Mesopotamia or its successor on the one hand and the Harappan Civilization on the other, but rather it catered to Bahrain's northern neighbours and the desire for Indian goods which seems to have pervaded the second half of the 1<sup>st</sup> millennium BCE and the centuries of the 1<sup>st</sup> millennium CE up to the arrival of Islam (see Salles, 2000: 135). This was the era of Tylos (Period V) upon Bahrain, and its ships ranged far, as an analysis of bead materials and attendant bead details show. From around the beginning of the Tylos era, "trade went global" due to "a series of empires" of larger size than had hitherto been known appearing in succession (Diamanti, 2003: 13). Bahrain benefited from this.

## **B. Period V Glass Beads**

Most of the Tylos beads included in the Bahrain sample are not attributed to a specific subdivision of Tylos (though there is a sizeable number of exceptions), but rather the era as a whole. Still, grouping the exceptions with the majority, certain aspects of the Tylos bead materials immediately come to the fore (see Figs. 49a-49d). The first of these is the overwhelming presence of glass in the Tylos era.

Of the total number of Tylos beads in the Bahrain sample, 1,560 specimens are made solely of glass (see Chapter 8.2, Fig. 4). This is an enormous amount, dwarfing the numbers attributed to the other bead materials in the sample. It forms over 60.82% of the total number of Tylos beads in the Bahrain sample (2,564 items, not counting the twelve beads – B367, B368, B374, and specimens B3744 to B3752 – whose attribution to Tylos may be questioned), with the remainder (just under 39.18%) shared by all the other materials.

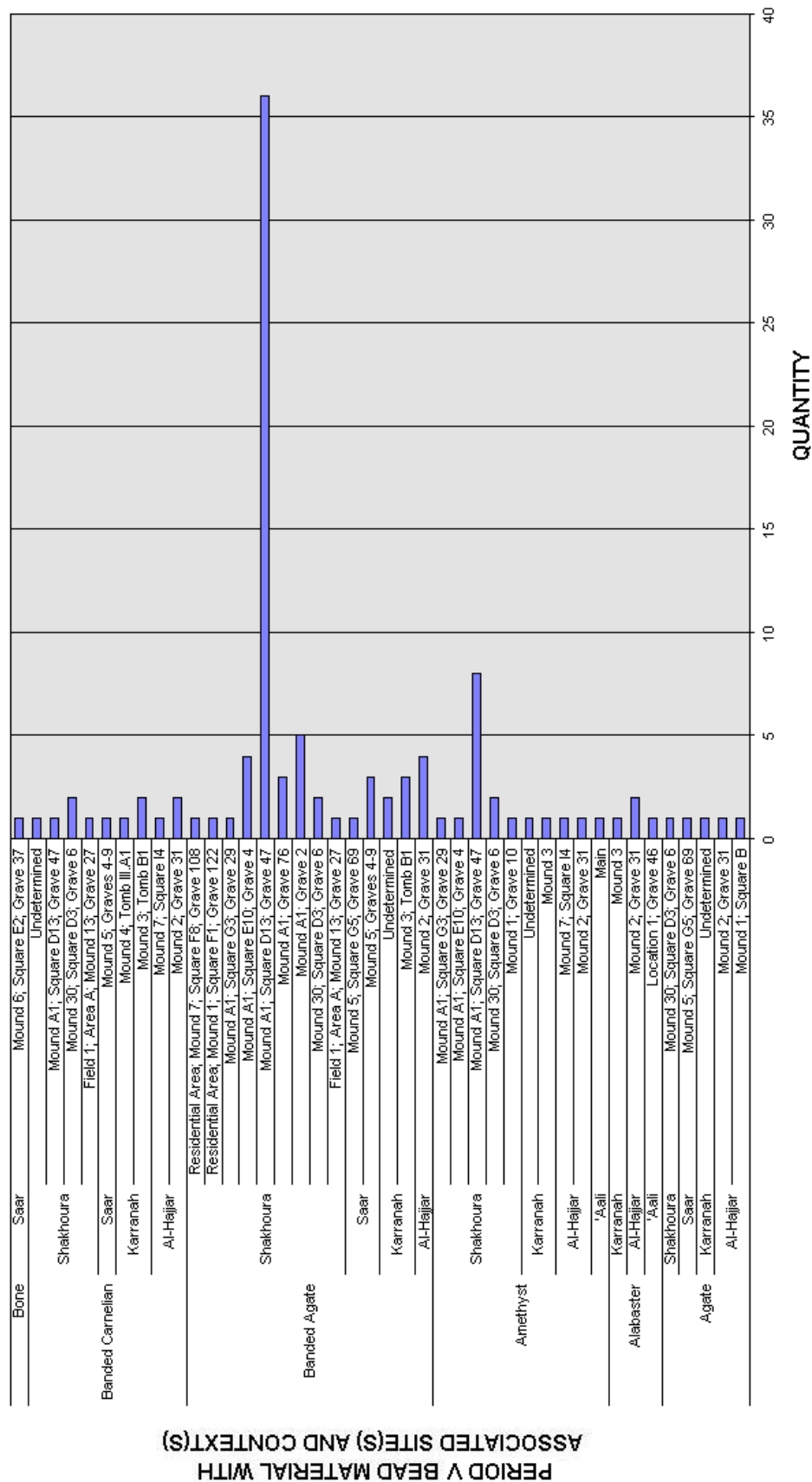
Despite forming a huge percentage, the overwhelming presence of glass is not at all surprising given that Tylos covered chronologically a span of time in the Near East and the Mediterranean regarded as one of the great eras of glassmaking. The associated industries were catapulted to new heights, first by the purveyors of Hellenistic culture in the aftermath of Alexander the Great's conquests, and then in Roman times by glassmakers based at Eastern Mediterranean sites (who developed blown glass and remarkable techniques that brought new levels of skill to the industries) (Eisen, 1919: 92-101; Francis, 2002: 87-88; Lankton, 2003: 53-54, 63; Stern, 1999: 442). Another boom would not be witnessed till the Early Islamic period, when further innovations would again bring glassmaking to even newer heights

(Kröger, 1995: 1; Von Saldern, 1966: 17). The great number of glass beads shown to belong to the Tylos era in the Bahrain sample only further validates the importance given to the associated industries during this near-millennium long period.

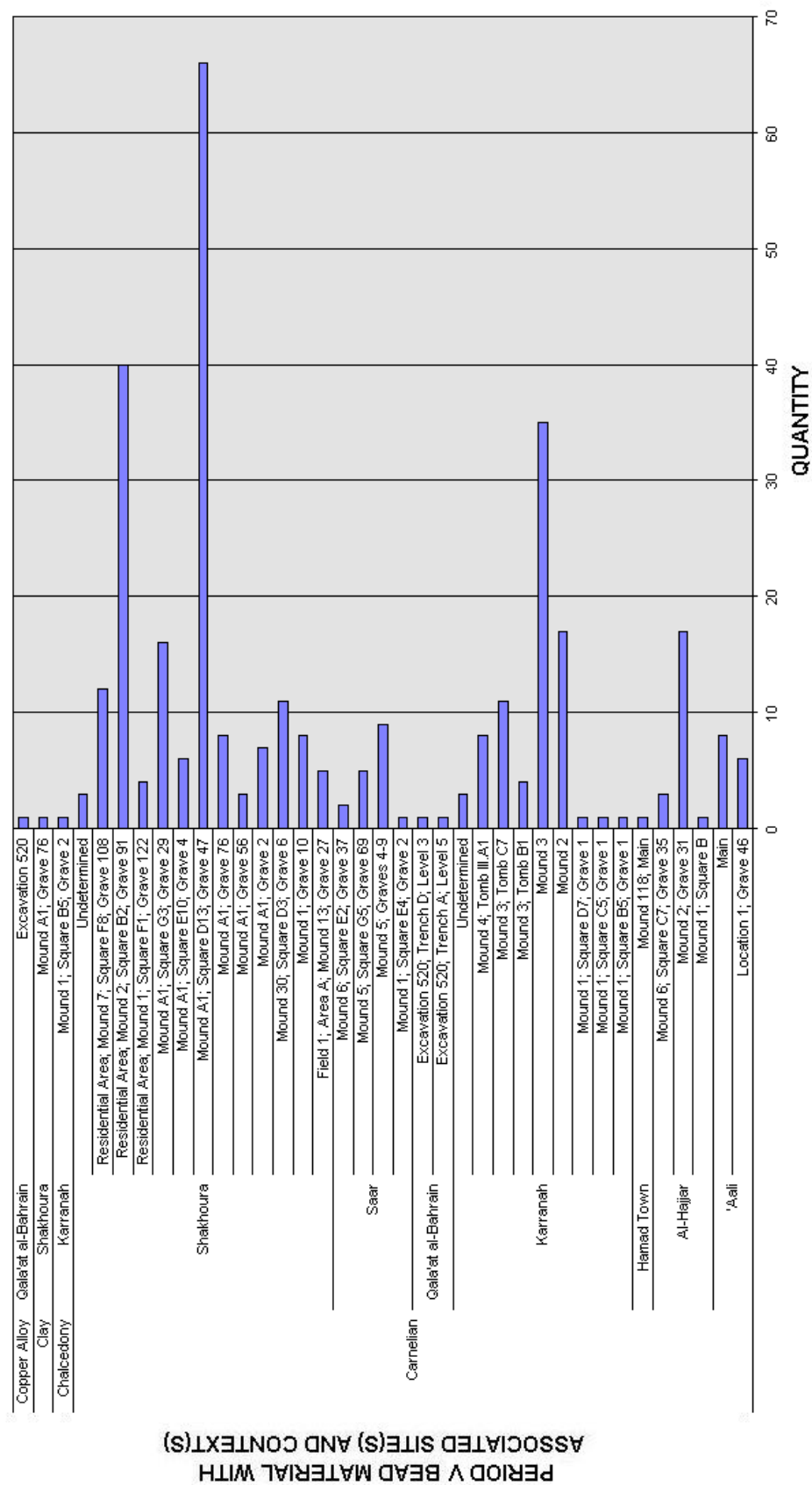
It is important at this point to distinguish between “primary” glassmaking and “secondary” glassworking, the latter involving the manufacture of final products from the material. The two were distinct in ancient times (Stern, 1999: 454). It is for this reason that it would be more proper to write of “industries” when referring to glass. The same distinction between the two industries should also be borne in mind when considering glass as a bead material in the Bahrain sample. Whilst glassmaking was based at central locales, glassworking was “decentralized” (Lankton, 2003: 63). This is not to say that glassworking centres did not exist, only that they were not as confined to particular locales as glassmaking ones were. At times glassworking took place alongside glassmaking at the same centres; that glass beads were manufactured at West Asian glassmaking workshops illustrates this (Stern, 1999: 443).

In examining the Tylos glass and gold-glass bead quantities by site, the following amounts are obtained in order of decrease: Saar (673 glass and 58 gold-glass beads), Shakhoura (492 glass and six gold-glass beads), Hamad Town (209 glass beads), ‘Aali, (71 glass beads), Karranah (68 glass beads), al-Hajjar (51 glass beads), and Abu Saiba’ and Qala’at al-Bahrain (a single glass bead from each site) (see Fig. 49c). Taking those beads made solely of glass, the 673 total of Saar not only heads the list, but towers above those from the other sites (i.e., it is almost 137% the total from Shakhoura, the second site in the list), forming just over 43.14% of all Tylos glass beads (see Fig. 50).



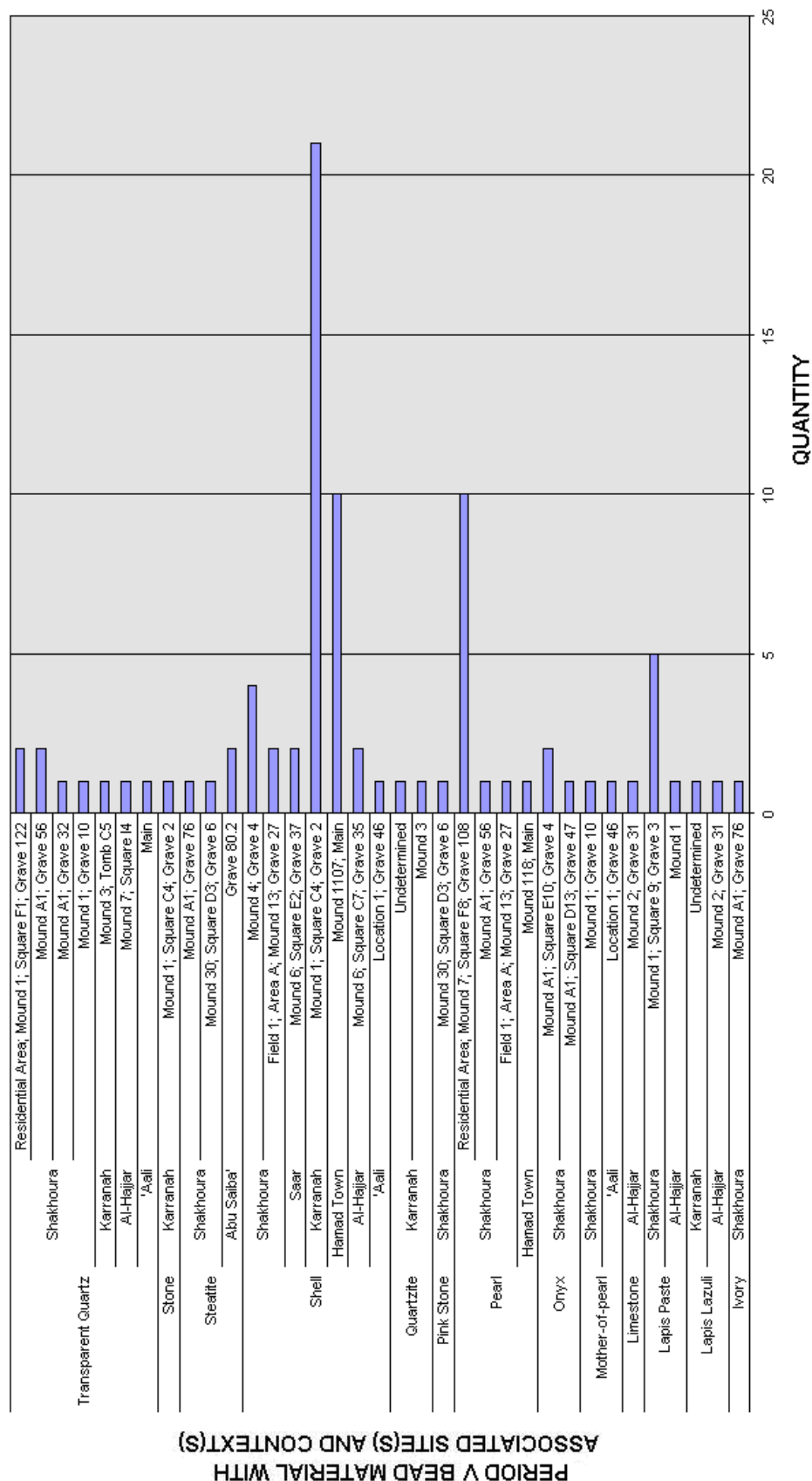


**Fig. 49a.** First part of a breakdown of bead quantities representing Period V materials in the Bahrain sample along with associated sites and contexts.

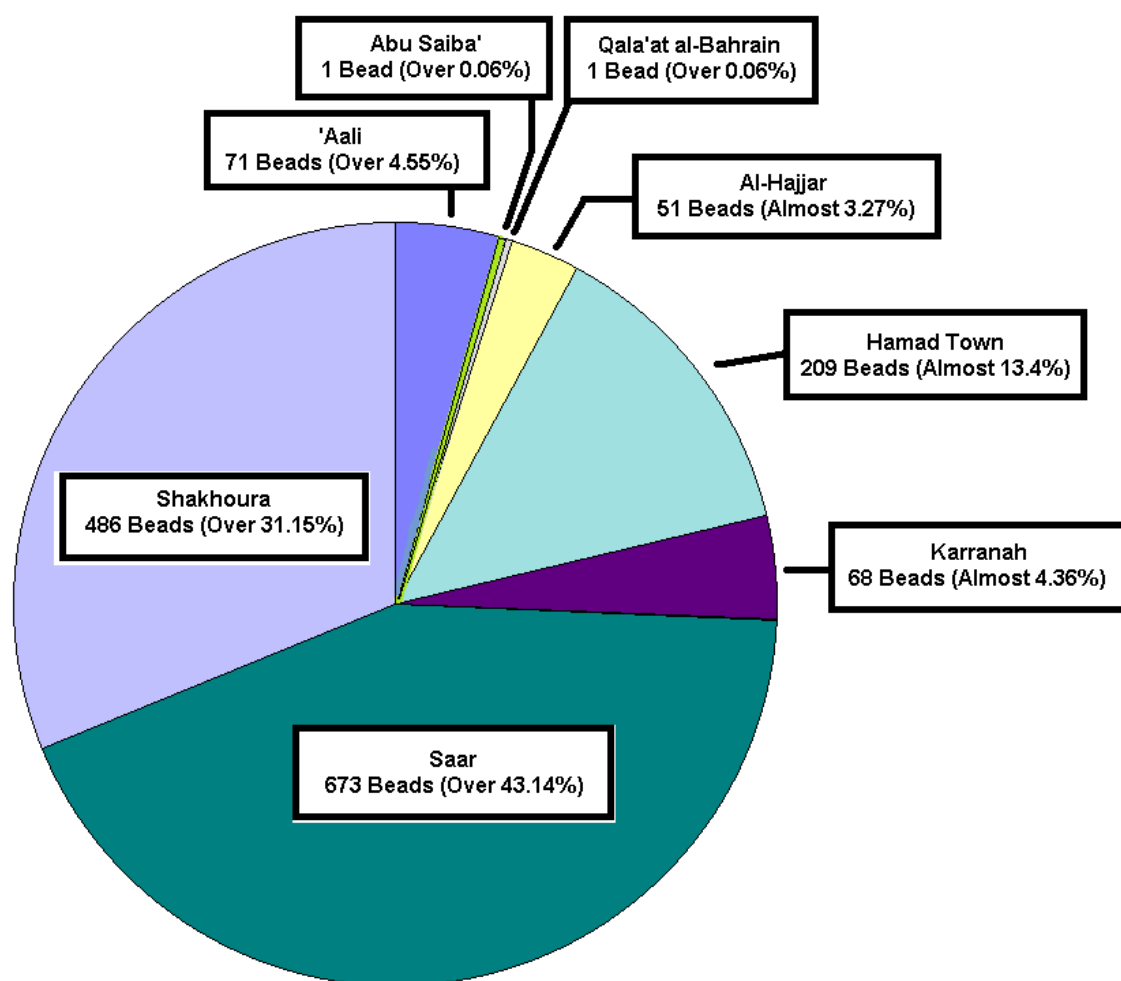


**Fig. 49b.** Second part of a breakdown of bead quantities representing Period V materials in the Bahrain sample along with associated sites and contexts. The graph does not incorporate nine carnelian beads from Karranah (B3744 to B3752) that likely belong to Period V, since their dating to this era is not entirely certain.





**Fig. 49d.** Fourth part of a breakdown of bead quantities representing Period V materials in the Bahrain sample along with associated sites and contexts. Beads B367 and B374 are not taken into account in this graph, since they could belong to Period IV rather than Period V.



**Fig. 50.** Contributions from different sites to the 1,560 Tylos glass bead total along with the percentages of the total formed by these. It should be borne in mind that the 1,560 total consists of glass-only cases and does not include ones involving gold-glass combinations.

It is safe to assume that the burials of Saar had a certain predilection for incorporating glass beads into their funerary assemblages. As with similar phenomena during Period II, it is unlikely a particular area of Bahrain would have been so sorely divided from others for an availability of products (though not necessarily numbers) to have been contested. Rather, it seems likely that the excessively high number of glass beads from Saar, far more than that encountered from elsewhere on Bahrain, indicates the possible presence of a glass industry, either for making the material or working it, situated in or within the vicinity of the settlement using the Saar cemetery (which we can assume was not situated too far away, based on modern habitation patterns in Bahrain) (see Højlund, 2007: 129).

It is also conspicuous that the Shakhoura cemetery provided the second largest amount of glass-only beads, over 31.15% of the total and more than 232.53% that of the next site (Hamad Town) in the list given above (see Fig. 50). We have already considered Shakhoura as an area with or near a possible glassmaking or glassworking “centre” (or two centres, one of each type) in Period II. The other two sites affected by such a possible centre in Period II, al-Hajjar and Karranah, seem also to have shared in the availability of glass beads. Of course, whilst it is unlikely that a continuous tradition of glassmaking (and glass beadmaking) persisted at Shakhoura throughout the intervening centuries between Periods II and V, particularly given the dearth in such glass manufacture during the end of Middle Dilmun and beginning of Late Dilmun, the geographic zone containing Shakhoura could have seen a revival in this regard in the Tylos era. If this was the case, then the new centre at Shakhoura may have been overshadowed by the one at Saar or else superseded by the latter, explaining the difference in glass bead numbers at the cemeteries associated with the sites.

The third site to provide a glass bead amount far outnumbering other sites is Hamad Town. Its glass-only beads form almost 13.40% of the Tylos total and over 294.36% that obtained from ‘Aali (the next site in the list) (see Fig. 50). Whilst it is granted that Hamad Town’s glass bead amount is far smaller than those of Saar and Shakhoura, it is still significantly more conspicuous than those of other Period V sites. This may indicate that Hamad Town had a greater involvement in the mechanism providing glass beads to Saar and Shakhoura, or perhaps that it had a glassmaking or glassworking centre of its own.

### C. Period V Faience Beads

Further support for the existence of a possible glassmaking or glassworking centre (or more) during Period V may be observed in the faience bead amounts from across Bahrain. As we have already mentioned in this work, faience has been seen as a precursor to the technology necessary for glassmaking. This is because much the same pyrotechnology (though of a more advanced kind) would be required for the latter. Faience is represented by the third largest amount amidst Tylos bead materials (302 beads), followed by frit (113 beads), here treated separately though intrinsically bound up with faience as a coarser and unglazed variety.

Shakhoura has provided the largest faience amount of any Period V site: 234 beads (see Fig. 49c). It is followed by Hamad Town (47 beads), with its significantly smaller amount but one that is still far greater than those of al-Hajjar (16 beads), ‘Aali and Karranah (two beads each), and Saar (a single bead). Whilst Shakhoura’s largest amount has come from one context alone (Mound 1; Square 9; Grave 3), it still seems relevant that the largest two faience quantities have come from the same two sites suggested as possible Period II centres for manufacture based on pyrotechnology (that is, for Early Dilmun glass and faience respectively). Bring in the fact that these two sites have also provided two of the largest glass bead amounts, and it would seem that the suggestion of industries based on pyrotechnology may be more than a mere hypothesis.

That frit beads were recovered from only a single site, ‘Aali, which has given us the entire 113 amount, again seems reminiscent (like the prominence of Shakhoura and Hamad Town); particularly when one recalls that ‘Aali provided the largest amount of Period II frit beads (see Fig. 49c). This seems to suggest that a “manufacturing environment” similar to the one in Period II existed in Bahrain during Period V, with ‘Aali possibly assuming a similar role in the latter to that it once held.

What still requires explanation, however, is why Saar has produced a single faience specimen (B1967) when it has also contributed the largest glass bead amount in the Bahrain sample. The recovery of such a great number of glass beads from Saar, compared to other sites and other materials within Saar itself, seems more than coincidental. And perhaps the existence of a more specialized workshop at Saar may be the reason; one wholly devoted to glassmaking or glassworking as opposed to broader pyrotechnological manufacture extending to faience and frit. Considering the non-coincidental nature of the glass bead amount from

Saar, this seems quite possible. Further evidence will however be required to validate or negate such a hypothesis.

It should nonetheless be remembered that the Tylos faience bead total has been recovered from relatively few burials, and that the limited contexts thus implied make them less reliable than the significant glass amounts obtained from equally numerous contexts (see Fig. 49c). Whilst the geographical patterns already suggested with regards to such sites as Shakhoura and Hamad Town seem undeniably pertinent, some of the faience beads could have also come from abroad through Bahrain's international trade contacts. The same could be said of many of the Period V glass beads; and we know that Roman glass has been found on Bahrain (see Stern, 1999: 477-478). One prominent faience manufacturing centre the products of which would have been quite accessible to Bahrain given its periods under Parthian and Sasanian rule would have been Qom in Iran, which apparently has a long tradition of faience manufacture extending from at least the Parthian era up to modern times (Francis, 1989: 26-27; Lankton, 2003: 82; Noble, 1969: 438-439).

#### **D. Glass Beads, Manufacturing Centres, and International Trade**

For centuries, centres renowned for beadmaking alongside the shores of the Eastern Mediterranean and the Aegean produced ornaments of glass (Lankton, 2003: 48). During the mid-1<sup>st</sup> millennium BCE, these were joined by other sites, once situated along the edges of the regions controlled by such loci of beadmaking (Lankton, 2003: 48). Such sites were subsumed during Alexander the Great's conquest of their regions, and so continued to have an impact on glassworking and the trade in glass products during the subsequent centuries of the Tylos era (see Francis, 2002: 87).

Particularly influential in the international bead trade during the Tylos era were the Scythians, who "dominated the steppe lands stretching from central Asia into south-eastern Europe" (Bienkowski and Millard, 2000: 257). The Scythians handled products from such distant centres as the faience-making ones of China, active since the beginning of the 1<sup>st</sup> millennium BCE, or its glassworking sites that have produced beads from the 6<sup>th</sup> and 5<sup>th</sup> centuries BCE onwards (Lankton, 2003: 50).

The Scythians not only participated in the movement of Chinese products, but those of other regions as well. When Athens was enjoying an era of prosperity during the 5<sup>th</sup> and 4<sup>th</sup> centuries BCE (that is, during Phase I of the Tylos era), the Scythians controlled the "grain



trade” associated with the Ukraine and so essential in the Hellenistic epoch (Lankton, 2003: 50). Doing so, they also moved other products between the great centres of the Eastern Mediterranean, including beads.

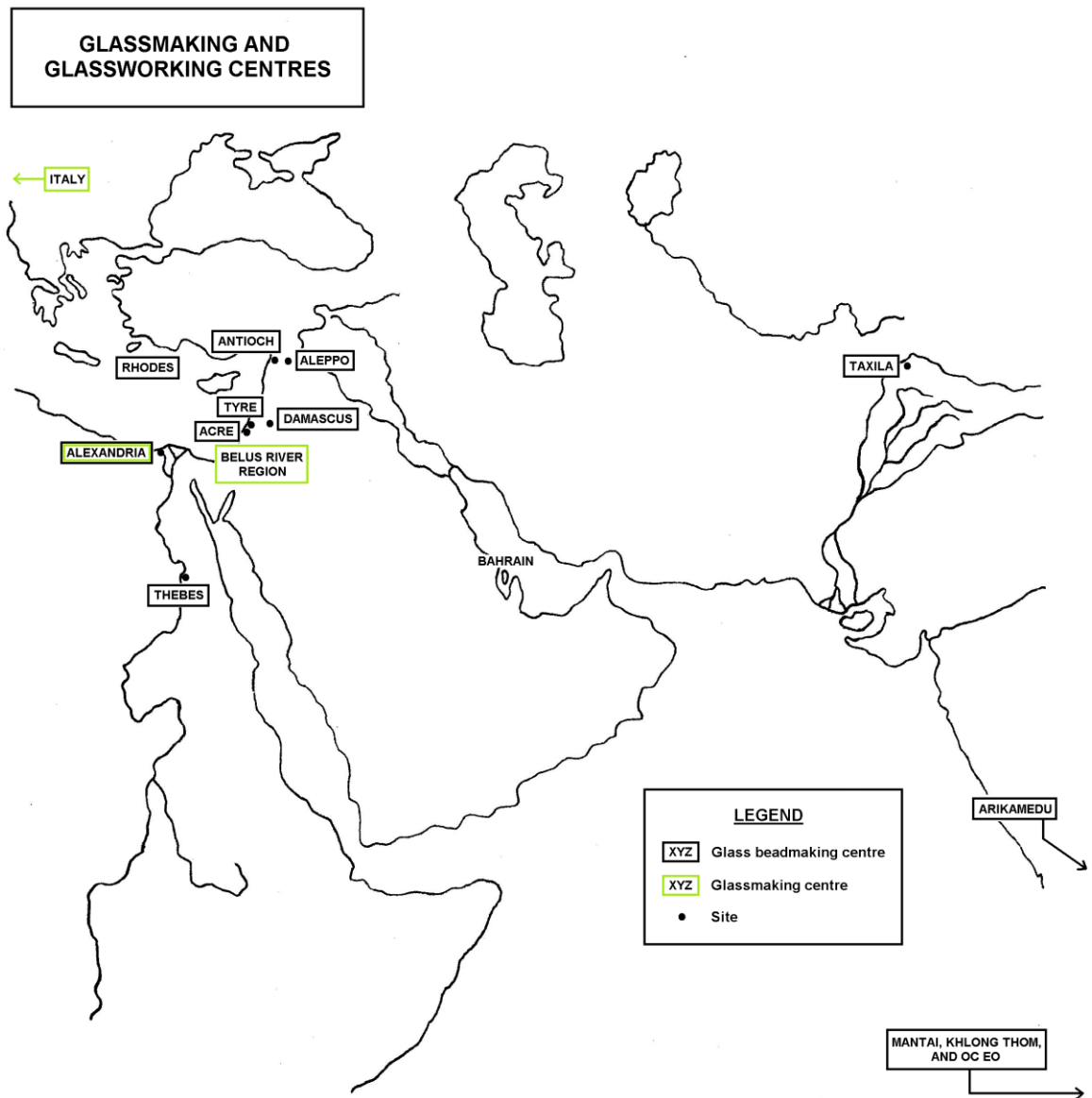
In the 1<sup>st</sup> century CE, the Roman geographer Strabo mentioned Alexandria, Italy, and the Palestinian Belus River area as three regions that were particularly influential in glass production (Lankton, 2003: 58). From 300 BCE and throughout the rest of the Tylos era, some of the most important glassworking centres, places that also produced glass beads, included: Alexandria (already mentioned), Thebes, Rhodes, Tyre, Damascus, Aleppo, Antioch, and Acre (see Map 8) (Francis, 2002: 87). One or more of these sites could have provided the Tylos glass beads in the Bahrain sample, just as those regions mentioned earlier could have provided the raw glass used at these sites (if not in Bahrain itself).

Certain Indian sites were also known for glass beadmaking. Taxila is one example, a wealthy trading centre involved in making glass beads from the 6<sup>th</sup> century BCE onwards (Dubin, 2006: 194). Horace C. Beck has already observed that drawn beads of glass were produced at Taxila as early as the 5<sup>th</sup> century BCE (Beck, 1999: 27; Francis, 2002: 110; Lankton, 2003: 61).

In fact, the glass beadmaking industry illustrated by production at Taxila and Harappa has been seen as representing the beginnings of the drawn glass variety that would eventually become the Indo-Pacific drawn beads. As a mature type, these beads were part of the “South Indian bead industry, initially at Arikamedu, and made by specialized technology unique to this industry” (Lankton, 2003: 69). Evidence of such beads at Arikamedu is abundant (Francis, 1991: 33-35, 39; Lankton, 2003: 68-69, 72). Mantai, located in Sri Lanka, also possessed a prominent role in the production and commercial exchange of these beads (Francis, 2002: 31). Thailand was also known for Indo-Pacific bead production, with beadmaking locales such as Khlong Thom (Francis, 2002: 31-32). And Oc Eo in Vietnam, another locale that manufactured these beads, was a site visited by “sailors” from the Arabian Gulf as far back as the 3<sup>rd</sup> century CE (Lankton, 2003: 69, 71).

However, despite Parthian and Sasanian hegemony over the Arabian Gulf across the various centuries of Tylos, very few such Indo-Pacific beads have been encountered in archaeological contexts (even later Islamic ones) in Persia (Francis, 1989: 30-31, 35). Due to a sizable number having been recovered from Bahrain, and visible in the Bahrain sample (see Chapter 9.6), it seems that Persian involvement was not as significant in bringing these beads to the Islands as Bahrain’s own direct participation in the Indian Ocean bead trade in the

Tylos era. The Indo-Pacific beads would have originated at such sites as Arikamedu or Mantai before being transported via such trade and eventually arriving in Bahrain. The Islands could have simply been an additional factor in the movement of the Indo-Pacific beads, as Siraf would later be in the Early Islamic period (see Al-Sadeqi, forthcoming; Francis, 1989: 30-31, 35; Francis, 2002: 128). The specimens in the Bahrain sample could have been part of the consequence of such down-the-line transportation.



**Map 8.** Centres and regions associated with glassmaking and glass beadmaking as mentioned in the text.

## E. Technical Breakthroughs and Their Effects on Period V Glass Beads

One of the great technical breakthroughs in glassworking of the Hellenistic era was the combination of “glass of different colors into mosaic blocks or canes” (Lankton, 2003: 53). Though the earliest example of this use of mosaic glass for beads dates to the 5<sup>th</sup> century BCE in the Mediterranean region, such products are particularly associated with the Hellenistic era because it is in the latter that the use of mosaic glass achieved maturity and was widely employed (Eisen, 1919: 94; Hencken, 1978: 125; Lankton, 2003: 53). We shall return to discussing this manufacturing method in the next chapter, but for now it suffices to state that mosaic glass production and its resulting pattern, displaying a variety of bead hues in a “combed” design, allowed for colour-combinations after a fashion hitherto unseen. Sometimes mosaic glass beads involve two colours. When displaying multiple colours, they may be taken as ancient beads that foreshadowed the “millefiori” appearance of Venetian glass specimens of a far later epoch (Beck, 1930: 179; Eisen, 1919: 94, 104). A number of such Tylos beads have been noted in the Bahrain sample, including four from a single grave at al-Hajjar (Mound 6; Square C7; Grave 35), four from Shakhoura (Residential Area; Mound 1; Square A2; Grave 4), and two from Saar (Mound 6; Square E2; Grave 37). These beads could have arrived on Bahrain from the glassworking centres of West Asia or the Mediterranean, though a local origin (e.g. one based at Saar or Shakhoura, particularly since mosaic bead finds on Bahrain all came from cemeteries associated with the geographic zone of these sites) for either the raw material or final product need not be discounted. After all, the manufacture and use of mosaic glass had achieved wide popularity in the wake of Alexander the Great.

It is also important to note that the age of “proper” use of such mosaic glass ended in the early years of the Roman Empire (Eisen, 1919: 96-98). This provides us with a likely *terminus ad quem* for dating these beads. Thus, despite their having hitherto been only generally attributed to the Period V, the specimens from the various contexts mentioned above may (in light of this *terminus ad quem* and the earlier *terminus a quo* given) be more securely dated to Tylos’ Phase I (and possibly part of its Phase II).

Another great technological innovation associated with the Hellenistic era is the manufacture of gold-glass beads (Boon, 1977: 193-194; Eisen, 1919: 93). Although a discussion of the method of their production is more proper to the next chapter, the combination of the two materials involved in these beads may again (like mosaic specimens) be placed securely in Period V. A particular region associated with the manufacture of gold-

glass beads is that of Rhodes, where the earliest such beads have been found. These date to the end of the 3<sup>rd</sup> century BCE, and it is safe to assume that the gold-glass beads from Bahrain post-date them. Both the city of Rhodes and the site of Camiros stand out as centres for making and working glass (Lankton, 2003: 54; Triantafyllidis, 2000: 193).

Of course, “colourless glass” was prepared (as at Rhodes) and sometimes shipped elsewhere for bead production. Rather than necessarily depend on finished products, though it may well have done so, Bahrain could have obtained such glass in this fashion (if not a local producer) and combined it with gold to make its own gold-glass beads. Other sites known for making colourless glass that could have been exploited in this fashion existed in the Levant and Egypt, both of which were within Bahrain’s mercantile reach (Lankton, 2003: 63). 17 furnaces for glass production have been excavated at Bet Eli’ezer in the Levant, and other Eastern Mediterranean sites also manufactured this material; in fact, much of Roman glass spanning several centuries was derived from these origins (Lankton, 2003: 63). Bahrain could have also benefited from them.

Gold sources would have been accessible to Bahrain as well, particularly through its commercial links with Western Arabia, East Africa, Egypt, India, and other regions (Bienkowski and Millard, 2000: 132; Dubin, 2006: 48; Francis, 2002: 50; Lombard, 2000d: 178). In fact, the Arabian Gulf trade was one route through which various Near Eastern civilizations had acquired gold since the Bronze Age (Bienkowski and Millard, 2000: 132). Bahrain, initially as Dilmun and later as Tylos, participated in the same, and this explains the material behind the gold and gold-glass beads in the Bahrain sample. A reduction in gold prices during the Seleucid period must have also aided Bahrain’s acquirement of the material (Lombard, 2000d: 178).

58 Tylos gold-glass beads in the Bahrain sample, being a sizable amount, came from five burials within a single mound at Saar: Graves 4-9 of Mound 5 (see Fig. 49c). Six additional gold-glass beads were obtained from an undetermined burial context at Shakhoura. Due to gold being involved, the burials at Saar and Shakhoura seem to represent a measure of wealth.

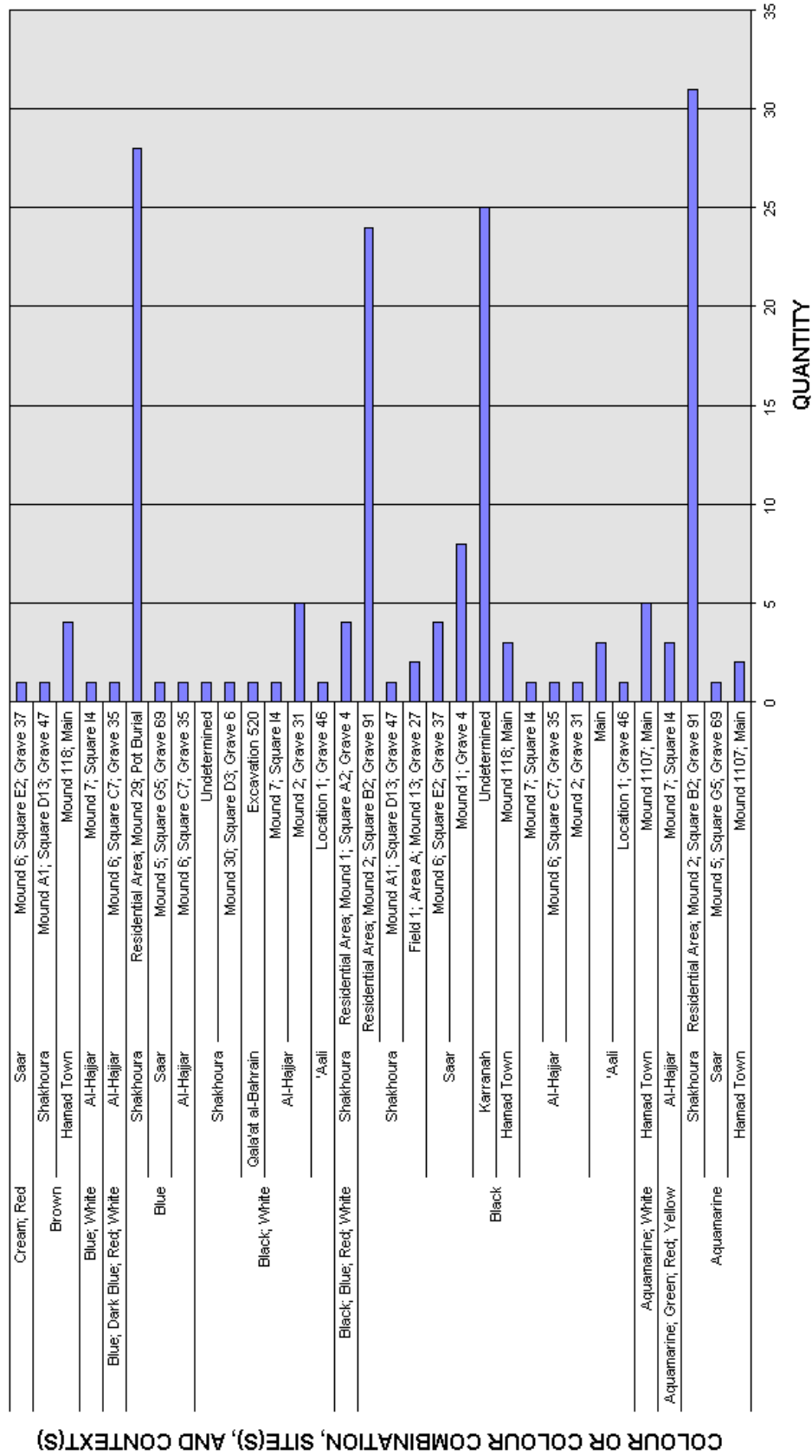
Of additional importance is the fact that none of the 58 gold-glass beads from Saar are of the segmented variety. This is important, as it allows us to more securely date the beads (where before they were simply referred to as “Tylos”). Gold-glass beads were not segmented till the advent of the Roman era (Lankton, 2003: 55, 67). Because of this, and bearing in mind the earliest dating attributed to this type of bead above, it becomes possible to place their

origins within the span of time between the end of the 3<sup>rd</sup> century BCE and roughly the start of the 1<sup>st</sup> century CE; thus Phase I (and possibly part of Phase II) of Period V, much like the mosaic glass beads mentioned above. The graves from which they (both the gold-glass and mosaic beads) were obtained may be similarly dated.

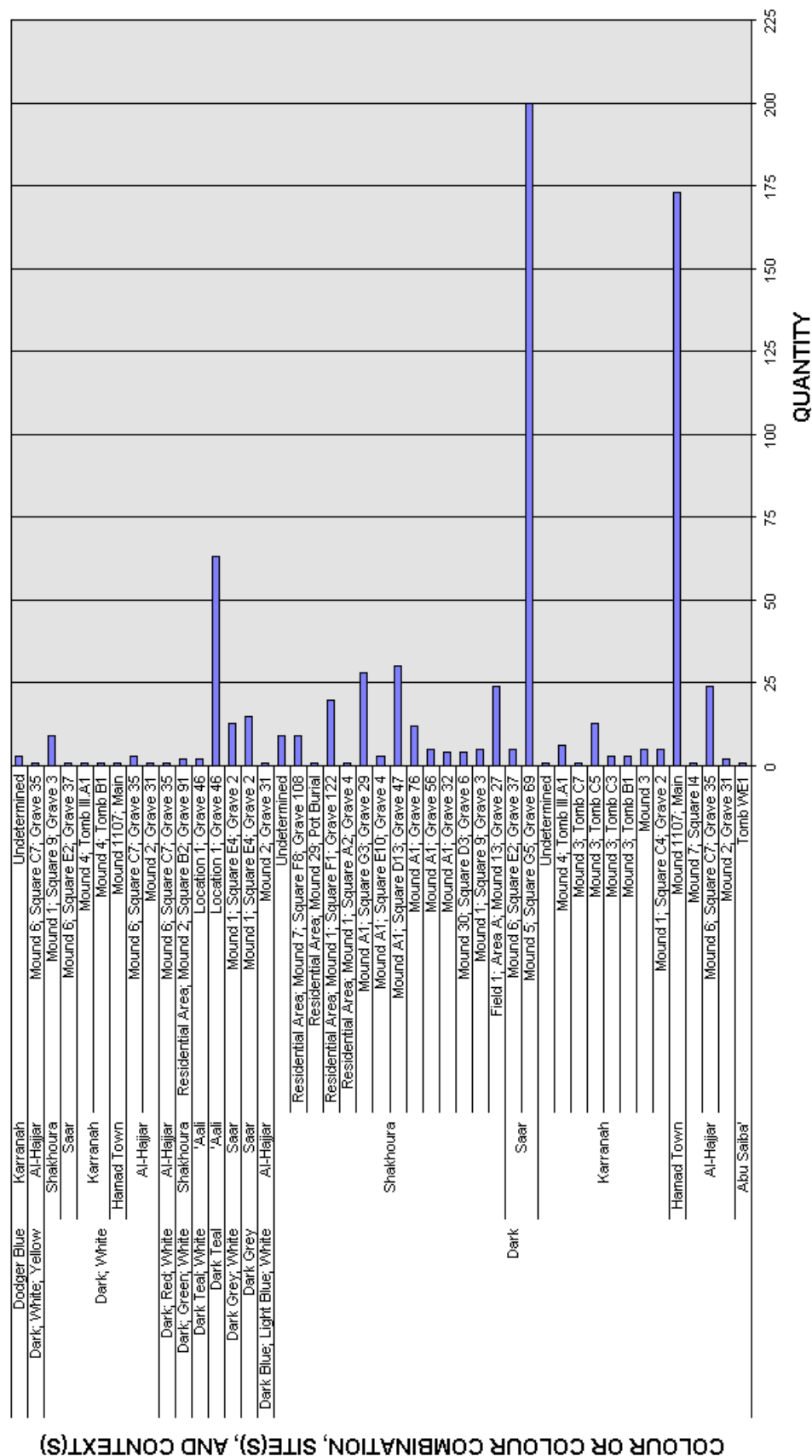
The six gold-glass beads from Shakhoura, however, were segmented and subsequently “snapped” to produce individual items; they thus post-date the advent of the Roman era and belong to the chronological span covered by Tylos Phases II-IV. The latter end of the range is obtained by noting that a “decline” may be observed in gold-glass manufacture (except in Egypt) following the 2<sup>nd</sup> century CE which ultimately culminated in manufacture ceasing at most sites (Boon, 1977: 196).

#### **F. The Continued Presence of Black-and-White Onyx Imitations in Glass**

Another notable feature of Tylos era glass beads is the continued presence of black-and-white onyx imitations, which made their first appearance in Period IVd/e. In Period V, the number of such imitations increased as did the quality. The reinforced contact with India in the Tylos era would have not only maintained a demand for actual black-and-white as well as brown onyx (represented by the quantity given below) but also for cheaper and more readily available imitations not dependant on trade with the Subcontinent. Definite black-and-white onyx imitations, conspicuous for possessing the same colour combination as the mineral (or similar ones), have been recovered from al-Hajjar (five beads from Mound 2; Grave 51 and one from Mound 7; Square I4), ‘Aali (a bead from Captain Higham’s Location 1; Grave 46), Karranah (a bead from an undetermined burial context), Qala’at al-Bahrain (a bead from Excavation 520), and Shakhoura (a bead from Mound 30; Square D3; Grave 6) (see Figs. 51a-51c). There are also various additional probable examples.

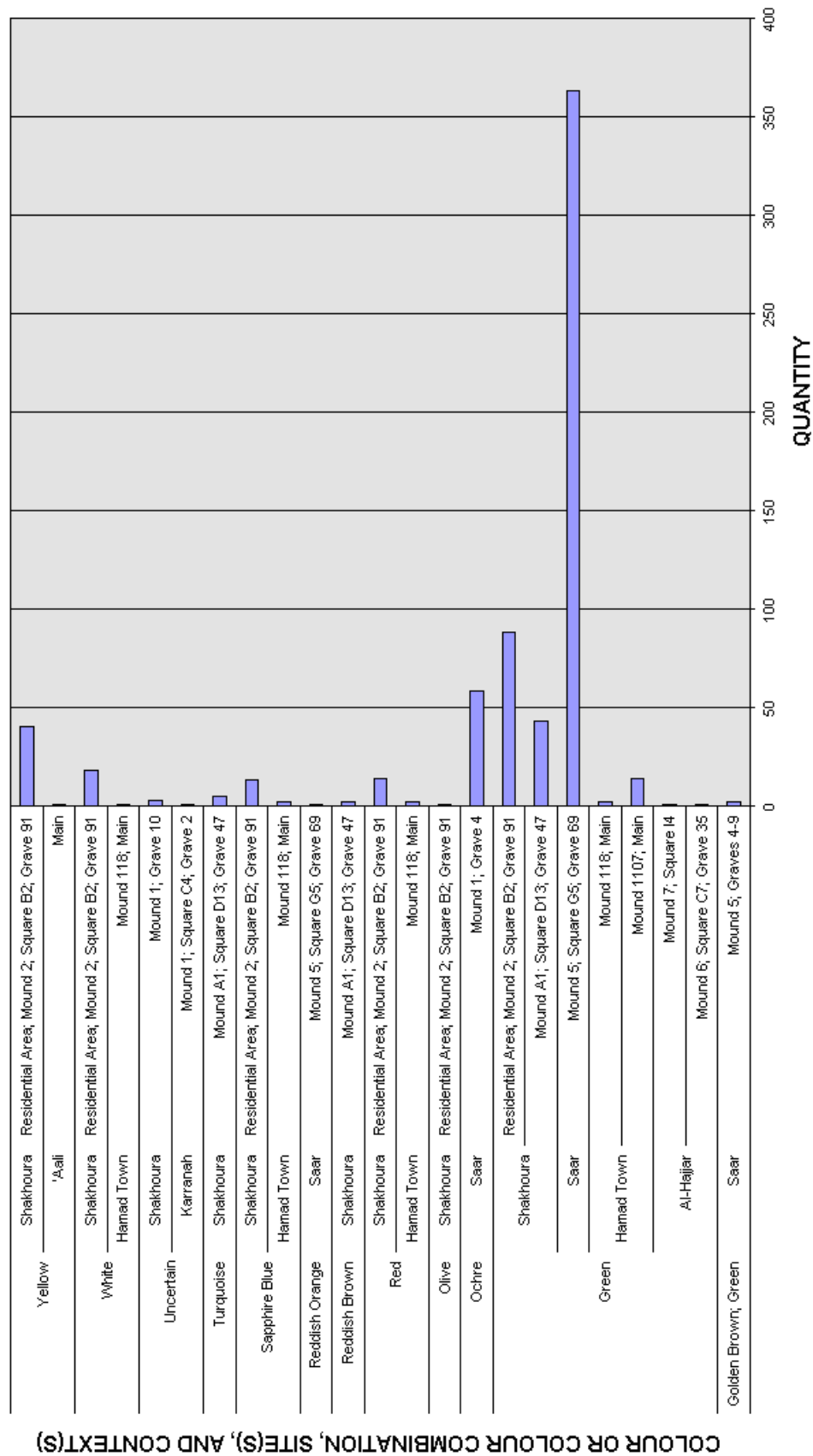


**Fig. 51a.** First part of a breakdown of Period V glass bead quantities representing different colours or colour combinations along with associated site(s) and context(s).



**Fig. 51b.** Second part of a breakdown of Period V glass bead quantities representing different colours or colour combinations along with associated site(s) and context(s).





**Fig. 51c.** Third part of a breakdown of Period V glass bead quantities representing different colours or colour combinations along with associated site(s) and context(s).

## **G. Period V Mineral Beads and Bahrain's Role in the Commerce with India**

A recovery of its role as middleman in the trade between India and Mesopotamia has already been suggested as a feature of Bahrain's Period V (Salles, 2000: 135). This would have especially been the case during the Roman era, when the Romans depended on maritime trade through the Arabian Gulf and Red Sea to obtain goods from India (Andersen, 2007: 239). However, the Romans never controlled the Arabian Gulf and, though possessing a demand for certain goods, were seldom well-informed about their origins (Ball, 2000: 132; Lankton, 2003: 68). The Parthians and later Sasanians, who held the Gulf and such places as Bahrain, did moreover possess a certain edge when it came to such trade. The Parthians also controlled Syrian glass beadmaking sites "at least twice" during the Roman glassmaking boom of the middle of the 1<sup>st</sup> century CE (Lankton, 2003: 63-64). Their influence in the Gulf would therefore have also meant that Syrian glass products would have been available in the region and to Bahrain at that time.

As in earlier epochs, carnelian was the most conspicuous representative of Indian trade during Period V. In referring to the South-East Asian bead trade during the Early Islamic period, Peter Francis, Jr. stated that the "lion's share" of carnelian beads came from India (1989: 26). A similar assertion may be made of the Tylos carnelian beads in the Bahrain sample as may be made of carnelian (as a bead material certainly) in the sample's earlier periods. This does not discount the possibility of carnelian and carnelian beads having been procured from other regions; only that predominance was likely the province of India.

Regular carnelian is the second most represented bead material of the Tylos era in the Bahrain sample, with 325 cases (see Figs. 49a-49b and Pl. III). Like all others, though, it is still dwarfed by the prevalence of glass. However, it is significant enough and was obtained from a large enough range of sites to provide evidence of the recovered importance of Bahrain in the trade with India. The greatest amount of carnelian specimens was recovered from Shakhoura (189 beads), where it was outnumbered by both glass and faience (see Figs. 49a-49c). Shakhoura is followed, in terms of carnelian find quantities, by Karranah (81 beads), al-Hajjar (21 beads), Saar (17 beads), 'Aali (14 beads), Qala'at al-Bahrain (two beads), and Hamad Town (a single bead).



**Pl. III.** A collection of Tylos beads from Tomb B1 of Mound 3 at Karranah. The significant presence of carnelian in this plate emphasizes the importance still held by the stone in Period V.

Other indicators supporting the prominent trade with India in which Bahrain was involved during Period V are such materials as agate (five beads), banded agate (67 beads), amethyst (18 beads), banded carnelian (twelve beads), chalcedony (one bead), green quartz (two beads), ivory (one bead), onyx (three beads), quartzite (two beads), and transparent quartz (nine beads) (see Figs. 49a-49d). It should not be presumed that all these materials originated solely in India. Many, such as ivory and the chalcedonic stones, could have also been acquired from elsewhere (see Diamanti, 2003: 13). However, India was known for all these materials and the diversity of “Indian” substances represented does seem to emphasize contact with the Subcontinent. The presence of green quartz in the above list is also quite notable. The two beads of this material were respectively found at Qala’at al-Bahrain (Excavation 520) and an undetermined burial context at Karranah. Regarding the latter, we can assume the burial to have been a privileged one, perhaps of a wealthy individual, given that green quartz was essentially quite rare and presumably costly. Even at sites such as Arikamedu, part of India’s renowned stone bead industry, green quartz beads have scarcely been found (Francis, 1991: 36). On the whole, green quartz is remarkable proof of Bahrain’s prosperity during Period V as well as its commercial links with India.

The stones in the list above would have been in high demand by the Romans, and exploited by Bahrain’s northern neighbours via the Arabian Gulf. The “struggle” between Rome and its eastern neighbours made access to certain products, such as gold-glass beads and various mineral varieties, difficult for the former (Lankton, 2003: 67-68). The Sasanians assumed full control of the sea trade associated with the Arabian Gulf (Larsen, 1983: 60-61). The Christian Nestorians likely first established themselves in Arabia in the 4<sup>th</sup> century CE and settled themselves along the Gulf in the succeeding centuries (Andersen, 2007: 243; Howard-Carter, 1987: 98; Larsen, 1983: 59). They even established a centre for themselves in Bahrain as well as others elsewhere in the Gulf (e.g. Bushire, Kharg, Sir Bani Yas facing Abu Dhabi, etc.) (Andersen, 2007: 242-243; Insoll, 2005: 247; Larsen, 1983: 59, 84). The Nestorians assumed a reputation for themselves as renowned mariners, like the Palmyrenes, Arabs, and Persians of the Sasanian epoch (Lankton, 2003: 68). Having a Nestorian centre on Bahrain would have provided the Islands with a firm grip on maritime trade.

## H. Period V Lapis Lazuli, Steatite, and Pearl Beads

At this time, the Sasanians dominated the West Asian trade with India, a trade which they denied the Romans through a stranglehold on the latter's eastern commerce (Lankton, 2003: 68). This represented a tendency on the part of Persia that had begun in Parthian times (Andersen, 2007: 240-241). The steatite and lapis lazuli Tylos beads in the Bahrain sample were obtained through close commercial ties with Persia, perhaps augmented by Parthian and Sasanian control of the Gulf. Two steatites beads have been obtained from Shakhoura, respectively from Grave 76 of Mound A1 and Grave 6 of Mound 30's Square D3 (see Fig. 49d). Two more have also been obtained from Grave 80.2 at Abu Saiba'. Persian sources likely account for these, the regions renowned as steatite sources for millennia prior to the Tylos era having already been mentioned above.

The two Period V lapis lazuli beads in the Bahrain sample were recovered from Grave 31 of Mound 2 at al-Hajjar and an undetermined Tylos burial at Karranah (see Fig. 49d). Badakhshan and the Chagai Hills are once again the places to look to for their origins, though the trade routes associated with Persia (including the maritime one that extended along its south-eastern coast) brought the material (perhaps in raw form or as finished beads) to Bahrain. The economic alternatives to actual lapis beads, that is, lapis paste ones, seem to have seen continued use during Period V, with six such Tylos beads in the Bahrain sample (see Fig. 49d).

The Bahrain sample also includes 13 Tylos pearl beads: ten of these came from a single burial (Mound 7; Square F8; Grave 108 in Shakhoura's Residential Area) (see Fig. 49d). Two other burials at Shakhoura have also provided pearl beads (single specimens): Grave 27 of Mound 13 (Field 1; Area A) and Grave 56 of Mound A1. A pearl bead has also been recovered from Mound 118 at Hamad Town. Whilst India had pearl-fisheries active during the Tylos era (and those from the Gulf of Mannar and Sri Lanka were especially valued), as has been mentioned above there is no need to look beyond the Arabian Gulf for the origins of the pearl beads (Dubin, 2006: 298; Francis, 2002: 189-190). In fact, the Gulf was quite renowned for pearls in Roman times as it had been in earlier periods (Carter, 2005b; Francis, 2002: 189-190). We even have a mention of "inferior" pearls being sent from Oman and Kanê to a North Indian market, this in Pliny's *Periplus Maris Erythraei* (Casson, 1989: 73; Francis, 2002: 189). In fact, Pliny regarded pearls as the second most precious material commodity of Arabia and India (Eichholz, 1962: 213; Francis, 2002: 189).