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Regional Variations in Nabataean Jewelry

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ABSTRACT

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The use of jewelry is just one of many avenues for individual self-expression, but even in the most individualistic society it is also a reflection of cultural norms, values, and expectations. This thesis is an analysis of Nabataean jewelry pieces found in burial contexts from the three main regions of the ancient kingdom - Medina Selah, the Negev, and Petra – with the aim of reaching a better understanding of Nabataean culture through their jewelry. The types of jewelry, materials used in their construction, and many other variables are compared and reveal unique regional variations within an overall Hellenistic style.

Keywords: jewelry, burial, Nabataean, Petra, Medina Selah, Negev

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TABLE OF CONTENTS

LIST OF FIGURES

1 Introduction

Defining the Problem

When Strabo spoke of the ancient Nabataeans, he described a society of immense wealth and ease of life (Strabo, *Geography:* XVI.4:26, 1930). Despite this supposed wealth and power, very little Nabataean epigraphic material has survived in the archaeological record. Jewelry, however, is an aspect of Nabataean culture which has survived. Artifacts from archaeological excavations are thus essential to understanding Nabataean religious and cultural beliefs and customs, as well as trade and economy; the types of jewelry and adornment which were chosen to accompany their owners out of this life are an important part of this material culture.

This thesis is a catalog and study of the distribution of jewelry found in burial contexts in the three main regions of the ancient Nabataean empire. Burials are one of the few archaeological contexts in which intentional deposition can be reasonably assumed. An earring found at a temple site may have been left as an offering, dropped and left by accident, or washed in later by the elements. An earring found in a burial was almost certainly placed there with intent.

This project aims to fill a gap in current Nabataean research. There exist many publications focused on the jewelry of the Nabataeans' contemporaries, such as Rome, Palmyra, and Maresha (modern-day Palestine) (Hawley, 2007; Kropp & Raja, 2014; Polokoff, 2020). These are useful for comparative analysis, but are no replacement for a study of pieces from within the borders of the Nabataean kingdom itself. There have been some articles published on specific assemblages of Nabataean jewelry, and others focused on the finds from a particular excavation or site which may include incidental references to jewelry pieces; however, there

have not yet been any comprehensive articles or reports on Nabataean jewelry across regions. This is the research gap which this project aims to fill.

Research Design

The data for this project has been collected primarily from published journal articles and excavation reports. A significant portion was also provided by Dr. David Johnson from his excavations in the Wadi Mataha area of the Petra Archaeological Park. Once collected, this data was then sorted by provenance into three categories based on the three general regions of the ancient Nabataean kingdom: Petra, Medina Selah, and the Negev. For Petra and Medina Selah, the data originates primarily from sites within the ancient cities themselves with a handful of pieces from surrounding sites. However, the Negev is a broader region with many small, scattered settlements, which resulted in data from a variety of sites, including some which are located on the modern-day Sinai Peninsula. For the sake of typology, these have all been grouped together under the category of "the Negev."

For each piece, several categories and sub-categories of data were collected. The three key categories are "Region," "Jewelry Type," and "Material," with sub-categories including "Symbols," "Size," "Shape," and "Date of Origin" (see Figure 7 for all data categories). The diverse sources from which this data was collected have varying levels of complexity and thoroughness, meaning that many of these sub-categories have been left blank where no information was provided.

In order to determine jewelry type, the categories used in this project align with the typology so clearly set out by Ariel Polokoff in "The Jewelry and Accessories from Subterranean Complex 169 at Maresha, Israel" (Polokoff, 2020). In her work she gives a general definition of

jewelry as follows: jewelry consists of "objects of personal ornamentation…accessories can be defined as something that is added to clothing, or useful for decorative purposes" (Polokoff, 2020, Conference presentation). She set out clear and relatively simple definitions of each object which will be followed in this thesis. According to her, rings are defined as a hoop worn on fingers, toes, or hanging from a chain; earrings are jewelry worn on the ear; bracelets are ornamental bands, hoops, or chains worn around the wrist, arm, or ankle; beads are jewelry that can be threaded; pendants are pieces that are hung from one end of the object (as opposed to beads, which are hung from both ends); fibulae are ornaments fastened to cloth by a clasp, hook, or catch and hinge pin.

Scope, Scale, and Limitations

As stated previously, the scope of this thesis only addresses jewelry found in burial contexts within three main regions of the Nabataean Kingdom, and data has been gathered from published articles and site reports. The variable quantity and quality of data provided by these many sources required certain modifications to make it usable. While the initial hope was to be able to include an analysis of instances of jewelry comparative to the sex of the remains, it soon became evident that this would not be possible due to the large number of sources which failed to include this information, or else had not yet performed or been able to perform sexing of skeletal remains.

Further adaptations were made for publications which only mentioned jewelry pieces in passing without specific quantity. In these cases, any mention of a singular piece (i.e. 'bracelet,' 'ring') was by default counted as a single item, and any mention of plural pieces (i.e. 'beads,'

'pendants') was counted as two items, as two is the minimum number which the plural form could be referring to.

It must be acknowledged that looting is a major issue in the Middle East, and both ancient and modern looters have skewed the data by creating an artificial bias of surviving materials. Many of the surviving pieces are glass beads – made of cheaper materials and easily overlooked by looters – and simple bracelets made of twisted wire. Many earrings, both singles and pairs, have been found by archaeologists, but undoubtedly there are many more which were once interred with the deceased but which were removed by illegal looting and have now forever lost their original context.

Finally, the majority of the tombs which have so far been excavated belonged to the wealthier members of Nabataean society. This is known by inscription or tomb type – only those with wealth and power could afford tomb construction, after all – an in some cases by both. Therefore, the jewelry pieces in this dataset are a reflection of what wealthy Nabataeans were wearing. As in most societies, it may be inferred that the lower ranking members wore simpler and/or cheaper versions of these pieces; however, the possibility remains that these high-ranking Nabataeans wore pieces meant to ingratiate themselves with their Hellenistic neighbors, while the lower classes preserved more elements of local styles. However, since most of their burials have either not survived or else not been properly excavated, it is not possible to come to any sort of conclusion regarding class differences at this time.

Thesis Organization

This thesis is divided into three chapters. The first is a historical overview of the Nabataean people, including current theories surrounding their origins and summaries of excavation histories in the three regions. It also covers some details of Nabataean burial practices and the importance of jewelry. The second chapter expands on these and addresses the principles of both mortuary theory and stylistic analysis, which are used for the analysis of the data.

The third chapter contains the analysis of the gathered data, both statistical and stylistic. It breaks down the types and materials of jewelry pieces by region and discusses stylistic anomalies, also by region. This chapter also provides more detail on the intersection of jewelry and burials and the implications of this data for understanding the broader Nabataean identity and culture.

Summary of Conclusions

This thesis offers an unprecedented compilation of data concerning Nabataean jewelry and a strong argument for the use of existing sartorial data in better understanding status and identity within a society. The following chapters detail what types of data can be gleaned from jewelry deposited in Nabataean burials and offer a preliminary analysis of this data. It shows the predominance of glass beads in the surviving archaeological material and the high occurrence of gold as a material, even after years of illegal looting.

The data also shows that the Nabataeans, generally, followed many of the same general sartorial trends which were then common throughout the Hellenistic world. While there are some differences in jewelry types among the three regions - which are likely indicative of distinct local

influences – overall the Nabataeans fit in well with their Hellenized neighbors. Based on the existing data it seems unlikely that the three regions had strong and distinct identities apart from each other – at least, as far as their wealthiest citizens were concerned.

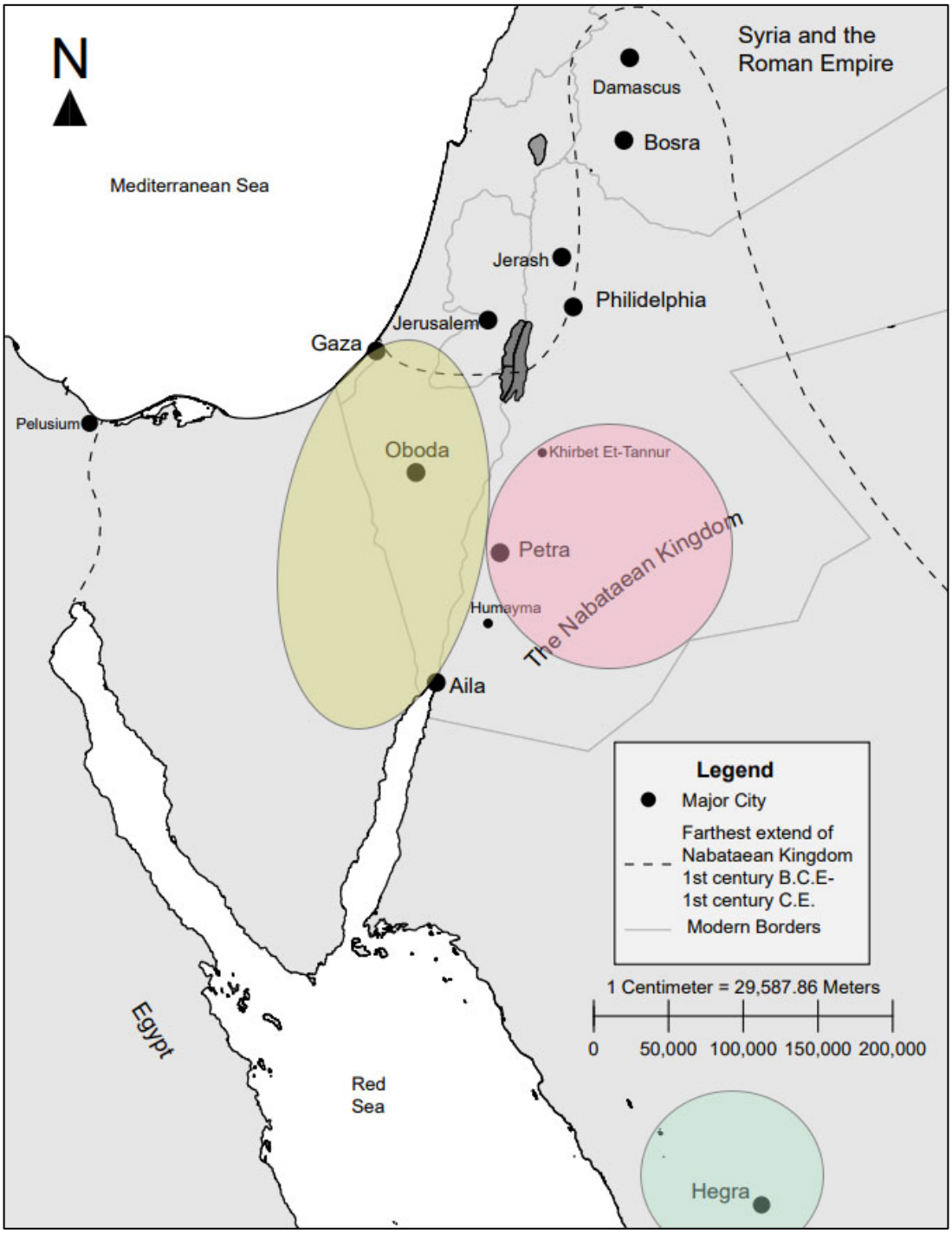


Figure 1: This map shows the ancient borders of the Nabataean Kingdom and highlights the 3 primary regions. Map courtesy of Jake Hubbert, color added by myself.

2 A Brief History of the Nabataeans

The Nabataean kingdom emerged sometime between 400 and 300 BCE in the region that is today southern Jordan and the Levant, founded by Arab traders who used their mastery of trade routes through the desert to accumulate wealth and power. Their exceptional involvement in trade meant that they interacted with many of the powerful civilizations of the time: Rome, Egypt, Syria, and possibly others. This economic involvement would have come with a high level of cultural contact as well; the degree to which this contact influenced the Nabataeans' own culture is, in part, the focus of this project's investigation.

The Nabataeans first appear in the historical record in 312 BCE. Diodorus Siculus, a Greek historian writing in the first century CE, cites a now-lost account of a group of nomadic Arabs, called Nabataeans, successfully withstanding the Macedonian general Antigonus (Diodorus, *Library of History*: 19: 94-96, 1954). According to Diodorus the Nabataeans had already become very wealthy by this time through the trading of frankincense, myrrh, and other spices, as well as bitumen from the Dead Sea (Diodorus, *Library of History:* 19:94, 99, 1954). He also mentions a certain "rock" which, although unwalled, appears to have been extremely defensible, as it was used by the Nabataeans to store their possessions and shelter the vulnerable members of their population, such as children and the elderly. Modern historians believe that this "rock" was the location that would become the capital city of Petra (Markoe, 2003: 19).

Strabo, another first century Greek historian, also wrote about the Nabataeans in his *Geography*, though his account is set nearly three centuries after that of Diodorus. By this point, according to Strabo, the Nabataeans had become a fully sedentary society, with significant control over regional trade. They had developed urban centers with multi-cultural populations

(Strabo, *Geography:* XVI:4.21, 1930) and had diplomatic relations with many of the surrounding powers of the day. What happened between the accounts of Diodorus and Strabo to convince the Nabataeans to abandon their nomadic lifestyle is unknown and, given the dearth of surviving Nabataean literature, likely to never be fully understood. However, it is known that they achieved the height of their power between 100 BCE and 100 CE, at which point in 106 CE they were annexed by the Roman Empire and became part of the Roman province of Arabia Petraea.

At the height of its power, the Nabataean kingdom stretched as far north as Damascus and south through the Hejaz. It covered areas located in modern-day southern Jordan, Saudi Arabia, and the southern desert of Palestine. Its capital city was Petra, located in modern-day Jordan, but other urban centers existed as well. Archaeologists have been working at many sites throughout the ancient kingdom's territory and slowly but surely building our knowledge of the Nabataeans. These sites may be grouped into three broad regional categories: Medina Selah, Petra, and the Negev.

Petra

Petra is arguably the most well-documented of the Nabataean sites. Western archaeologists became aware of the site in the 19th century with the explorations of Johann Burckhardt (Adams, 1973; Bowersock, 1983; Burckhardt, 1819); since then, the primary focus of academic study in the area has been on its many prominent architectural features. Its plethora of magnificent façade tombs display Egyptian and Greco-Roman architectural elements such as triclinia (Dodson & Ikram, 2008), associated water storage (Venit, 2002), Hellenistic columns, and carved friezes and pediments (Dodson & Ikram, 2008; Venit, 2002; Wadeson, 2013a).

The city of Petra (called Raqmu by the Nabataeans) was the capital of the kingdom for most of its history, up until Rabbel II – the last king of the Nabataeans – moved his capital north to Bostra in modern-day Syria (Markoe, 2003: 22). Petra was located at the north end of the Red Sea, inland from the Gulf of Aqaba and just above the Wadi Araba. This placed it in close proximity to the principle overland route towards Damascus as well as the route towards Gaza through Avdat. This would have given it easy access to Egypt, Damascus, the Levant, and the Mediterranean (Bowersock, 1983: 5). According to Diodorus, the spice and perfume trade from southern Arabia depended on the Nabataeans using this overland route to transport these goods to the Mediterranean (Bowersock, 1983: 15). Petra's careful location near trade routes without being directly in their path afforded it a lasting importance; archaeological evidence shows that the city was destroyed by an earthquake in 363 CE, but recent excavations have uncovered several carbonized papyri which show that the city continued to be occupied at least into the 6th century CE (Markoe, 2003).

As the capital and center of trade, Petra would have been a busy, wealthy, and multi-cultural city. The city itself had many gardens within its own borders, and its citizens would have enjoyed an abundance of foreign imports of many different types of goods (Bowersock, 1983: 17). The city of Petra was the location of the Nabataean kings' royal residence (Schmid et al., 2012) and the bureaucratic seat of power. Josephus, writing in the first century CE, refers to Petra as *ta basileia*, a term which indicates not just a royal residence but an entire area of a city in which royal quarters, administrative offices, cultic installations, etc. would have been concentrated (Schmid et al., 2012: 73). The exact locations of these *basileia* have not yet been discovered, but there are some theories currently being pursued. Schmid, for example, hypothesizes that these royal residences were located at the foot of al-Khubthah (Schmid et al.,

2012: 73). Either way, these bureaucratic areas would have contributed to making Petra a bustling, cosmopolitan city.

Medina Selah

Medina Selah, sometimes Anglicized as Mada'in Salih, is the modern name for the ancient city of Hegra, the largest Nabataean site south of Petra (Nehme, 2005: 155). In general, Nabataean sites in northwest Arabia fall in to one of four broad categories of settlement types: oases which developed permanent settlement (Hegra/Medina Selah, al-Bad, Tayma, Dumat); harbors (Leuke Kome and Egra Kome); sanctuaries (al-Qusayr and possibly Ithra); and caravan stops along trade routes (Umm Jadhayidh) (Nehme & Wadeson, 2012: 4). Medina Selah, as the largest of these, appears to have had a strong military presence as part of its settlement; textual evidence indicates the presence of many high-ranking military officers in the city during the 1st century AD (Healey, 2001: 35). A concise summary of its modern exploration by Western scholars and explorers is provided by Laila Nehme in her article "Towards an Understanding the Urban Space of Mada'in Salih":

> The site was visited in 1876-1877 by Charles Doughty, who was followed, a few years later, by Charles Huber and Julius Euting. However, the largest and most impressive exploration of the site was undertaken in 1907, 1909, and 1910 by the Dominican Fathers A. Jaussen and R. Savignac, who published their discoveries in their *Mission archaeologique en Arabie* (1909-1922)." After WWI the site was visited by H. St. John Philby, then F.V. Winnett and W.L. Reed in 1962. In 1968 a team from the University of London, led by P.J. Parr, spent a few

> hours on site collecting pottery and recording inscriptions, publishing their report in 1972. Since the 60s the Saudi Arabian Department of Antiquities have undertaken exploration, excavation, and preservation. In 2001 a new survey project began that was a collaboration between the French Ministry for Foreign Affairs and the Deputy Ministry for Antiquities and Museums in Riyadh. (Nehme, 2005: 157-158)

One of the most visible archaeological features of the Medina Selah site is the necropolis which surrounds the residential area. Excavation has revealed that this necropolis contained 111 monumental tombs and more than 2000 non-monumental tombs, i.e. cist graves or tumuli (Nehme, 2005: 156). The earliest of these monumental tombs were carved circa 1 BC/AD (Healey, 2001: 35). Stylistically, compared to the monumental tombs of Petra, the ones at Meda'in Salih use less sophisticated carving techniques as well as some unique or uncommon decorative patterns in their facades: rosettes, eagles, masks, snakes, sphinxes, and urns (Nehme & Wadeson, 2012: 4). Human figures do not appear at Hegra except for some demonic creatures (usually only faces); urns and/or eagles are frequently carved above tomb doorways, both of which are rarely found at Petra (Healey, 2001:53). Furthermore, Hegra has more unfinished tombs than Petra, and its tomb complexes differ in both installation and arrangement.

Most of the monumental tombs at Hegra were carved in groupings on different sandstone outcrops. There is no discernable chronological progression of style, meaning that the designs used in the facades may be seen as more of a reflection of the owner's social background or personal preference rather than of any stylistic trends (Healey, 2001: 53). It should also be acknowledged that many of the facades were originally painted, plastered, or otherwise decorated in ways that proved less permanent than the stone carvings and inscriptions.

Negev

The Negev is a broader region compared to Medina Selah or Petra. It encompasses what is today most of the southern portion of Palestine. It is a desert region with broad environmental states, ranging between extreme drought to irregular levels of rainfall. Despite these harsh conditions, the Negev has been occupied intermittently by humans since the Lower Paleolithic era, seeing several periods of settlement followed by periods of abandonment (Baron, 1981: 52). These occupations have been primarily nomadic and semi-nomadic in nature, due to the stark environmental conditions of the region. At the time of the Nabataeans, the types of settlements were mostly way-stations and guard stations as part of their trade routes, although some farming villages are also in evidence (Baron, 1981: 63). The main excavated sites of the region are the settlements of Avdat/Oboda, Kurnub, Shivta, and Halutza (Baron, 1981: 63). Avdat and the site of Beersheva were small settlements that linked other Hellenistic sites to the Judean region, but may have been used before the Middle Nabataean period to facilitate contact with nomadic pastoralists engaged in transit trade (Baron, 1981: 68).

Nabataean control of the area resulted in a dramatic shift in settlement patterns. By the Middle Nabataean period (332 – 37BCE) there were many guard station settlements along trade routes, and beginning in the late Nabataean period (37BCE – 324CE) agriculture became a more significant part of settlement in the Negev as water capture and irrigation systems improved (Baron, 1981: 69). Greater development of road systems allowed for easier travel and thus greater labor availability, which in turn facilitated higher crop yields and greater potential for higher populations. With these kinds of state-sponsored settlement patterns, site location would have been less about having the resources to sustain a population and more about strategic topography or other resources that would benefit the greater Nabataean power (Baron, 1981: 73).

With these kinds of settlements, it is likely that the majority of the population were individuals with ties back to the government, such as administrators or other official personnel, or else lower-status individuals who otherwise maintained the daily life of the city.

The area of the Negev could be made habitable with irrigation techniques, but it was especially advantageous because it provided overland access to the coast of the Mediterranean Sea (Bowersock, 1983: 5). The Nabataeans were well-known as traders and were significantly involved in the Arabian aromatics trade – mainly frankincense and myrrh. The frankincense tree and the most prized variety of the myrrh plant grow only in South Arabia and the Horn of Africa. In order to reach the ancient Mesopotamian and Mediterranean world they would have had to be transported north across the Arabian Peninsula (Beeston, 2005: 53). Fairly early on the trade routes diverged: one headed north-east towards Mesopotamia, the other north to Gaza (Beeston, 2005: 54). Of this second route, the Nabataeans – described in records as "merchants from Aila/Aqabah," controlled the northern portion (Beeston, 2005: 56). We also know that the Nabataeans had a port somewhere on the Red Sea, called Leuke Kome or "white village" in Greek. According to Strabo, "…camel-traders travel back and forth from Petra to this place in safety and ease…" (Strabo, *Geography:* XVI.4:23, 1930; Healey, 2001: 35).

The settlement of Avdat, in addition to being an important station on the Nabataean trade route, also held some interesting religious significance. Nabataean inscriptions point to a Cult of Obodat located there. A temple complex has been excavated and many inscriptions and small finds have been found (Healey, 2001: 68). The settlement of Elusa has a Nabataean inscription dating to the 1st century BC, and is mentioned in the writings of Epiphanius of Salamis as having a sanctuary to Venus, which could have been a syncretism with al-Uzza (Healey, 2001: 67). Other key Nabataean sites in the Negev region include Mampsis/Kurnub, Sobota/es-Subeta -

where a dedication to Dushara was found - and Nessana/Hafir el-Awja – where several undated Nabataean inscriptions and a possibly Nabataean temple have been found (Healey, 2001: 68).

For the purposes of this research, some Nabataean sites which are located in the modern-day Sinai region have been grouped with sites in the Negev due to environmental similarities and their relative sparsity. Thousands of Nabataean inscriptions have been found in the Sinai region – mostly graffiti – but few have yielded any significant amount of material remains; one site which has is the site of Qasrawet/Qasr Gheit (Healey, 2001: 69). This site was excavated between 1975-76 and is located in the northwest part of the Sinai. Two Nabataean temples were found here, and it would have been located along an important north-south Nabataean trade route, meaning it was likely a kind of stronghold meant to protect trade (Healey, 2001: 69).

Jewelry and Nabataean Identity

At their height, the Nabataeans established colonies over a wide area, meaning that they spread and received influence from many different cultures. In religious terms, this meant the creation of local, modified cults based on the overarching Nabataean religion (Healey, 2001: 33). It also meant regional variation in personal names and – as this research aims to show – in jewelry.

Jewelry is one of the few elements of adornment which can survive in the archaeological context, in large part due to its material. Fabric will decay just as any other organic material (with some exceptions in desert climates, of course), but metal, glass, and stone jewelry is far more likely to survive.

Jewelry specifically is an important type of material culture. Not only does it provide information about the aesthetic values of the people who wore it, but the materials and symbolism involved in its creation can be indicators of economy, wealth, religion, and status. The availability or lack thereof of certain materials may designate them as luxury items; the prevalence of certain forms or symbols may be indicators of social or religious influence or associations. The sparse writings which have survived from the Nabataeans make it difficult to understand how they perceived their own lives and culture, but a study of the jewelry they left behind is an important piece to this particular puzzle.

There is some evidence of individuals identifying as "Nabataean" after the kingdom was dissolved and absorbed into the Roman Empire (Healey, 2001: 9). However, there is also linguistic, religious, and architectural evidence that the Nabataeans adapted to or were otherwise influenced by outside cultures. Strabo records that the capital city of Petra was full of foreigners; ethnic Greeks, Romans, Egyptians, as well as members of other Arab groups and local semi-nomadic tribes, would all have been living within the borders of the Nabataean kingdom (Strabo, *Geography:* XVI.4:21, 1930).

The architecture of the tombs at Petra is just one example of this foreign influence. Large tomb complexes such as the Soldier's Tomb include an elaborate façade, banquet halls, and additional rooms, all arranged around a peristyle courtyard. This layout is extremely similar to the luxury architecture of the Hellenistic and early Roman Mediterranean and can be seen in many of their villas and palaces (Schmid et al., 2012: 74). The sanctuary of Tannur in the Petra region also shows a strong Greco-Roman influence, as seen in its iconography (Healey, 2001: 34).

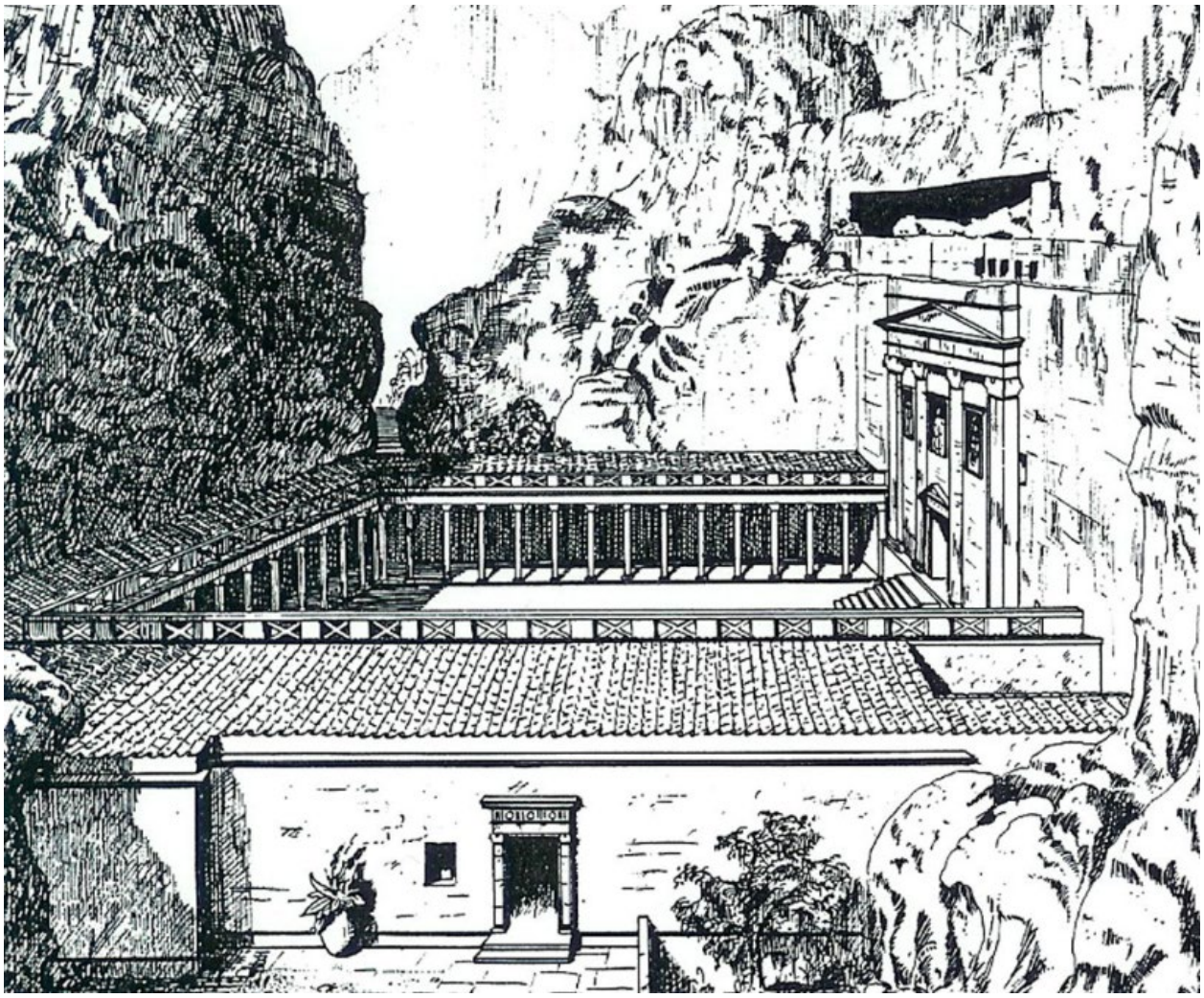


Figure 2: A hypothetical reconstruction of what the Soldier Tomb complex would have looked like, clearly showing the Hellenistic influence in its architecture. Note that the tomb itself would have only been a piece of the visitor's experience. Image courtesy of the International Wadi Farasa Project (Schmid, 2000).

The tombs of Hellenistic Alexandria display a similar syncretism of architectural styles. Many of them have courtyards or platforms where funerary ceremonies or celebrations would have taken place (Venit, 2002). Triclinia are also a common feature in both Alexandria and Petra; these would have almost certainly been used for the types of funerary feasts that were common and well-documented throughout both the Mediterranean and the Middle East (Venit, 2002: 15). Furthermore, many of the Hellenistic tombs at Alexandria include decorative elements

found on many of the facades of Petra: carved Greek-style pediments and columns are among these (Venit, 2002; Wadeson, 2013a).

Meanwhile, several Nabataean texts from Saudi Arabia repeatedly mention the Shalamu – possibly one of the local influences on Nabataean culture (Healey, 2001: 34). The Nabataean inscriptions in this area have a noticeable linguistic differentiation from those in other regions; their linguistic quirks show influence from the local dialects of that area. This is especially interesting considering that the Nabataean kingdom appears to have been the product of alliances which was ruled by an elite class with apparent origins among the tribes of northwest Arabia (Healey, 2001: 11, 185).

The balance between a Hellenized central culture and Arab influences has been studied in many areas, but never in jewelry. The goal of this research is to add to this discussion with the specifics of jewelry variations across the major regions of the Nabataean kingdom.

3 Theory and Methods

As stated previously, the focus of this project is on jewelry that has been found in burial contexts. Accordingly, the predominant theoretic models that will be used to conduct this analysis are mortuary theory and stylistic analysis: mortuary theory for the context in which the jewelry pieces were found, and stylistic analysis for analyzing the pieces themselves.

Mortuary Theory

Mortuary theory is the broad theoretical model used to extract meaning from methods of burial. It encompasses not only the deceased's body and grave goods, but the location and placement of the burial as well. This is vital in archaeology, as a significant amount of the field's understanding of ancient cultures comes from burials and other material funerary contexts. There are many reasons to consider burial as an information source when approaching an ancient culture. Funerals and burials are, in a way, performances of the living culture. After all, the dead do not bury themselves. By reconstructing a past society's burial practices, mortuary theory has the potential to reveal information about social organization, socioeconomics, trade and politics, migration, ideology, philosophical-religious beliefs, and patterns of social interaction and cultural affinity (Carr, 1995; Tainter, 1978). A burial "represents one of the most formal and carefully prepared deposits that archaeologists encounter" (Pearson, 1999: 5), because of the inherently deliberate nature with which the body and any associated grave goods are placed.

Despite this value, however, mortuary theory is a relatively recent addition to the field of archaeological theory (Goldstein, 1981). Although burials have long been a focus of excavation, the conception of a codified theoretical model for mortuary archaeology has not always been a

priority. As Howard Williams has stated, “It seems ironic that given the fact that archaeologist [sic] constantly dig up, record and publish the material remains of death and mortality from the past, the key questions of how past populations engaged with their mortality and attempted to deal with, and commemorate their dead, are rarely addressed” (Williams, 2003: 5).

One of the first contributions to the framework of mortuary theory was the Binford-Saxe hypothesis. In 1970, Arthur Saxe published his PhD dissertation in which he proposed eight hypotheses related to ancient burials and hypothesized that a person’s social status was indicated in their manner of burial. Lewis Binford expanded on Saxe’s work resulting in the Binford-Saxe Hypothesis, which is still valuable today, although it has lost considerable popularity (Binford, 1971; McHugh, 1999; Rakita et al., 2005). Simply put, the Binford-Saxe hypothesis holds that the amount of effort which was put into a burial directly correlates to the social status and/or rank of the deceased. It also promotes a cross-cultural approach to research and data gathering, in order to establish universal laws that could be applied to any possible culture.

Of course, today this is recognized as a flawed premise; there is no single universal law that could apply to every ancient and modern culture. Furthermore, burials are not faithful one-to-one representations of their given society, as the Binford-Saxe approach implies. Funerals can often provide the perfect opportunity to enforce social hierarchies or other politics that represent an ideal rather than reality (McHugh, 1999; Tainter, 1978). Current theoretical models are more cognizant of the complexity of human action and, by extension, funerals; a burial is only one piece of the complex web of human society and culture.

One of the most common criticisms of the Binford-Saxe hypothesis is its over-focus on the quantitative to the exclusion of qualitative analyses, especially in its failure to take ideology into consideration with regards to the ritual of burial. It is this ideological aspect that current

mortuary theory is primarily focused on, especially the likelihood of ideological manipulation having occurred during the course of the original deposition (McHugh, 1999).

This analysis will use a combination of both the Binford-Saxe approach and the more ideological-focused work of Ian Hodder and Mike Parker Pearson. Much like the eventual result of the debate between Processual and Post-Processual archaeologists, a middle ground between quantitative and qualitative approaches is the goal of this analysis.

One of the quantitative aspects of mortuary theory are the four horizons (McHugh, 1999): 1) age 2) gender 3) horizontal dimension 4) vertical dimension. Age and gender refer to those physical characteristics of the deceased and how they relate to the manner of burial. The horizontal dimension refers to the family and community groupings of the deceased, while the vertical dimension refers to their social strata and wealth. This approach seeks to use the manner of burial and presence of any related grave goods to extract data about deceased individuals and then extrapolate that information to the broader cultural structure.

The qualitative elements of this analysis will include consideration for individual idiosyncrasies and social circumstance. In the specific case of jewelry there are many possible reasons why some pieces may have been interred with the deceased. As already established, they can be related to the horizontal and/or vertical dimensions of the individual. For example, some jewelry pieces may have been family heirlooms which were passed down, or which were otherwise related to an important social identity or status: modern weddings rings are an example of this principle.

Jewelry pieces may also have been included with the intention of disposing of personal items as a way of distancing painful memories, or to dispose of implements used during the burial process (Carr, 1995). On a more spiritual or symbolic level, they may have been included

as part of provisioning the deceased for the afterlife (Carr, 1995), perhaps with an apotropaic function (Bohak, 2017). They may have acted as offerings or gifts from living mourners, as flowers are in modern Western culture; or, finally, they may have been added after the burial as elements in activating magical spells (Bohak, 2017; Johnson 2020).

Nabataean-specific Burial Practices

A limited number of contemporary literary sources provide interesting, though occasionally misleading, information. In his *Geography,* the Roman geographer Strabo included an account from Athenodorus of his travels among the Nabataeans. "They look upon the bodies of the dead as no better than dung, according to the words of Heracleitus, 'dead bodies more fit to be cast out than dung;' wherefore they bury even their kings beside dung-heaps" (Strabo, *Geography:* XVI.4:26, 1930). This is now generally believed to be a reference to secondary burial practices rather than a true disregard for the deceased; likely the dead were left exposed in the open air for some time, before their disarticulated bones were gathered and re-interred elsewhere (Perry, 2002: 265).

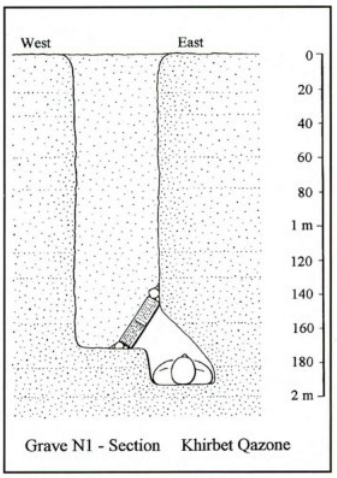


Figure 3: A shaft tomb from Khirbet Qazone drawn by J. M. Farrant. It has the characteristic undercutting to the east and the covering by slabs of adobe brick. Image courtesy of Politis, 1999.

Archaeology provides more reliable details about Nabataean funerary practices. Excavations have revealed three different types of burials which were used by the Nabataeans: open-air shaft tombs, communal shaft chamber tombs, and monumental façade tombs (Johnson, 2013; Perry, 2002: 266). The monumental tombs were reserved for Nabataean royalty and high-ranking

administrators; open-air shaft tombs and communal shaft chamber tombs would have been used by lower classes (Johnson et al., 2007; Perry, 2017: 100; Perry & Osterholtz, 2020). Within these tombs are also found both primary and secondary burials. Shaft chamber tombs offer yet more variety in methods of burial: interment in rectangular niches in the wall, niches in the floor, or in larger troughs or basins which had been cut into either the walls or floor of the chamber (Perry, 2017; Parker & Perry, 2013).

Figure 4: An example of open-air loculi; these are located in the rock next to the Soldier Tomb. Photo courtesy of Art Destination Jordan.

In comparison to this variety of burial methods, it appears that the Nabataeans were stricter – or perhaps simply more ritualized and established – in what types of material goods they left at the tomb. The archaeological record shows evidence of zoomorphic ceramic figurines, gaming pieces, ceramic fineware, food, and liquid libations all being left as offerings (Garnier et al., 2010; Perry, 2017; Sachet, 2007; Sachet, 2010). All of these imply a friendly interaction between the living and the dead: a meal shared, a game played together, etc. This type of exchange "established and preserved a dynamic relationship with…deceased ancestors" (Perry, 2016: 396).

It is clear that the Nabataeans valued this relationship with their dead. In Petra, monumental façade tombs and *nefesh* line entryways into the city and surround the city center itself; the dead thus took up space in the visual landscape of the Nabataeans and would have been in constant remembrance (Perry & Osterholtz, 2020; Wadeson, 2011; Wadeson, 2012; Wadeson, 2013b). The living regularly visited these tombs for commemorative feasts, offering of libations, and for new interments of both primary and secondary burials (Perry, 2016: 393).

From this evidence it is possible to recreate what may have happened during a typical Nabataean funeral. The deceased was wrapped in textiles, possibly having been perfumed beforehand, and adorned with jewelry (Politis, 1998; Politis, 1999); they may also be placed in a wooden coffin before interment. At some point during the funeral it is likely that a ritual feast would have been held involving not only the family but their broader social circle as well. Lamps inside of the tomb would provide both light for the mourners and a pleasant smell to mask any odors; family members would return periodically to their family tomb in order to connect with the deceased and over time the individual would become part of the collective ancestral identity (Perry, 2017: 101).

The use of jewelry in burials may have served multiple purposes. It is possible that its use was intended to provide a "recognizable remembrance of the dead, long after their familiar faces had rotted away" (Perry, 2016: 394). They could have symbolized elements of the deceased's life; in Mampsis, several women were buried with two pairs of earrings. One pair is a simple hoop or boat-shaped *navicella*-type, while the other pair is of a more elaborate design. It may be that one was given to the individual as a child and the other as an adult, possibly upon their marriage (Rosenthal-Heginbottom, 2015: 161). This raises the question of whether or not any jewelry was passed down along generations, or if much of it was buried with its first and only owner. Although this type of chronology is difficult to ascertain from excavation stratigraphy alone, the question is yet another example of how this project is laying the foundation for a better understanding of Nabataean cultural practices.

Regional Investigation

This project will focus on three broad regions of the ancient Nabataean kingdom: the Negev, Medina Selah, and Petra. It is here that grave goods will become especially relevant, as the nature of the ancient kingdom – especially after its annexation by the Roman empire – was such that ethnic Nabataeans mingled with people from all over the ancient world. The items that were buried with them can help in sorting out Nabataeans from other groups. For example, Nabataean pottery is a diagnostic artifact; its presence is a firm indicator of the presence of ethnic Nabataeans. This project hopes to contribute by providing further identifying markers of Nabataeans from the style and make of their jewelry.

Stylistic Analysis

Stylistic analysis will be used to approach the qualitative visual elements of the dataset. The term "style" in this context is best described as "the resemblance works of art have to one another. Enough visual elements must be shared by enough works to make their combination distinctive and recognizable to a number of people" (Munsterberg, 2009, Stylistic Analysis section). Stylistic analysis, then, is a twofold approach: identification and comparison. The first step is visual examination of objects in order to identify any images, designs, or other stylistic elements that were used in their creation. Once these are identified they can then be compared with each other to determine similarities and differences and, if possible, groupings of attributes. In the case of Nabataean jewelry the pieces are already grouped by date and region; this dataset will further group them by jewelry type and material before beginning a more detailed analysis. This additional stylistic grouping will allow for a more accurate identification of stylistic trends by region and time period.

Certain keywords were used in the process of gathering data and will be used in the analysis in order to better group the pieces. During the initial process of data gathering broad keywords were used such as: jewelry, necklace, bead, bracelet, pendant, earring, gold, bronze. "Ring" was not used, as too many unrelated words contain those letters to make any search usable. Occasionally more specific words were used such as "anklet" or "amulet," but for the most part the above words sufficed.

These same keywords will be used to group items by jewelry type and by material. The next step will be to identify more specific keywords to use for stylistic analysis. This will be somewhat challenging, as the descriptions provided by different publications vary widely in their depth and quality. When possible, images of the pieces will be used to supplement their descriptions. Some keywords have already been established in the process of organizing the data and have been attached to the individual pieces by means of an additional data column titled "Shape." These key words include such identifiers as biconical, ovoid, trapezoid, wheel, and lunate, among others (see Appendix A for the full list of key identifiers). Other keywords that will be used in the course of stylistic analysis include wire, millefiori, sheet, bezel, and twisted.

Another element to consider is cultural context. With regards to ancient jewelry, context must be considered when conducting any stylistic analysis. It is "important to remember that the life and art of ancient peoples were permeated by religious belief to a far greater extent than modern occidental societies and that this is necessarily reflected in their imagery" (Pinckernelle, 2007: 1). Ancient jewelry was often amuletic as well as aesthetic, and so colors, materials, and other stylistic elements such as shape and images, served more purpose than might otherwise be attributed to their modern counterparts. These symbolic approaches and cultural contexts will be

taken into consideration in this analysis, in addition to any value ascribed through trade or other social contexts.

Nabataean-specific Stylistic Trends

The iconography and jewelry of the ancient Mediterranean and Near East shared many similarities in both style and symbols. This can make identifying un-provenanced objects difficult, but can be helpful in that written sources and archaeology from one culture often overlap with another, providing further cultural insight. As the Nabataeans left no extensive literature describing details about their religious practices and beliefs, it is necessary to turn to their contemporaries in Hellenistic Greece, Egypt, Syria, and Mesopotamia for a better understanding of likely cultural practices and the potential meaning(s) behind common symbols. However, in doing so, it must also be noted that the Nabataeans – or even individuals within the broader culture – may have assigned different meanings to the various symbols.

That being said, the case of several pieces of gold jewelry from Wadi Mataha provides an excellent example of how stylistic analysis might be applied (Johnson, *Nabataean Gold Jewelry from Wadi Mataha*, n.d.). Many distinct symbols appear among this assemblage, including cowrie shells, dolphins, scorpions, spoked wheels, rosettes, and lunates. In the case of the cowrie shell, it is known that they held symbolic and apotropaic significance in many different periods of history throughout both the Mediterranean and the Near East. The cowrie shell's resemblance to a human vulva led to its association with reproduction and the feminine. They often functioned as protective amulets for adolescent girls; it is possible that their inclusion in a burial context could be related to the desire of mourners and/or relatives to secure those powers of rebirth and regeneration for the deceased. They were also often associated with fertility

goddesses such as Aphrodite of Cyprus, or, in the Nabataean context, al-Uzza/Allat. However, the cowrie shell held more than one symbolic function. Its resemblance to a squinting or half-closed eye led to it being used in apotropaic devices to ward off the evil eye. These pieces could have been included in burials with the intent of warding off evil in the afterlife (Johnson, "Gold Jewelry," n.d.).

Figure 5: An assemblage of Nabataean jewelry from Wadi Mataha which includes rosettes, spoked wheels, cowrie shells, and scorpion imagery. Excavated by Dr. David Johnson, 2014

In addition to these various symbols, different materials could also carry symbolic connotations. Amethyst, for example, is linked to fertility in the afterlife by Coffin Text Spell 576, and in Greek magical papyri jasper, agate, and rock crystal – as well as amethyst - are

associated with the sun god Helios (Johnson, “Gold Jewelry,” n.d.). Obviously these symbolic associations varied, even within cultures, and many could apply simultaneously to individual pieces, but an understanding of their potential interpretations is valuable in assessing why specific pieces may have been included in a burial or, to an extent, why they were created in the first place.

4 Ancient Jewelry in Context

Jewelry Use and Meaning in a Mortuary Context

Today jewelry is used for a wide variety of purposes, and the same was true in the ancient world as well. Through a quick ethno-archaeological analysis alone a number of possible uses can be deduced, including beauty, personal sentiment, religious affiliation, and signifiers of group belonging. Fortunately, it is not necessary to rely on modern equivalents only to understand the Nabataeans' use of jewelry; the dearth of surviving literature from the Nabataeans leaves many blanks which archaeology can fill and pushes scholars to study their contemporary neighbors in order to better understand them. Contemporary societies such as Egypt, Syria, and Rome left many records of their own, both archaeological and literary, which can be used to better understand the aesthetic preferences of the region at the time. These kinds of records are excellent sources of information to compare and contrast with the Nabataean archaeological record.

Generally speaking, in the ancient world, jewelry could be used for amuletic purposes, for aesthetic, and for displays of status and/or wealth. Everything from the size of the piece to the materials used in its creation would have contributed to the fulfillment of these purposes, i.e., a rare material or a larger stone making a piece more expensive and therefore exclusive. The type of jewelry piece was also significant for these aforementioned purposes; for example, crowns were a jewelry piece worn only by women in the royal family, as depicted on extant coins, while rings and bracelets were used by women on all levels of society, meaning they would have needed to be more complex in order to be unique (Alzoubi et al., 2013).

Nabataean architecture includes many symbols and religious representations, and it is no stretch to assume that these can appear in jewelry as well. Although they may be seen as mere decoration today, it is important to consider what meaning they could have held for their original creators and wearers. Again, this is an instance where looking to contemporary cultures provides insight into regional beliefs and traditions. "Jewelry worn by the living expressed a general wish for a happy and healthy life. When included among the funerary offerings of the deceased, jewelry had an apotropaic purpose to ward off evil spirits in the netherworld. At the same time jewelry was a sign of economic prosperity and social standing as well as an aesthetic appreciation of beauty" (Rosenthal-Heginbottom, 2003: 29).

Just as jewelry pieces take on different meanings in various social contexts, so too do they acquire new meanings in the greater contexts of life and death. Mortuary theory suggests that burial goods are related to the deceased's social identity within the living society, and this logic could be applied to the jewelry found in Nabataean tombs. However, there are many other, more functionally minded, possible explanations than simple status symbols. The jewelry in these burials could have been included as personal items, as apotropaic or magical items for either the living or the deceased, as necessary tools for the afterlife, as offerings or gifts to the deceased from the living, or otherwise as a physical, tangible reminder of the deceased in some way. This last use could include such scenarios as disposing of painful reminders of the deceased or tokens of the deceased's life and contributions to the community. Of course, humanity and culture are complex; it is almost certain that the jewelry pieces deposited in these burials fulfilled many of these purposes simultaneously (Johnson, "Gold Jewelry," n.d.).

Significance of Materials

As previously stated, the type of material used in the creation of jewelry pieces would have had an impact on their purpose(s) and how well they could fulfil them. Accessibility would have played a large part in this. The Nabataean Kingdom was a trade empire, located on a nexus of trade between Africa, the Middle East, and the Mediterranean. Consequently, it had access to a wide range of materials and manufacturing techniques. The availability of these different materials would have then impacted how these materials were perceived and utilized. Materials which had to be imported from outside the Nabataean Kingdom would have cost more and thus would have held higher social capital for those who could afford them. Materials which were more locally available, or at least in higher supply compared to the demand, would have been cheaper and thus held less social capital. The former would have been more likely to be used as a display of wealth and power; rare materials would have been an easy way to set apart the rich from the poor, but they also could have been used to symbolize religious power in certain pieces.

The Nabataean Kingdom included local jewelers and goldsmiths among its citizens, and some of their names have survived down to the present day, such as Wahab Elhi and Zeyd Ber Teim (Almasri et al., 2012: 13). The evidence of these types of fine craftsmen allows for the easy inference of a local economy of manufacturing and a market for selling jewelry pieces, although the extent of any possible international economy is not clear. The Nabataeans did not export or import any gold jewelry, but it is possible that other types of jewelry were exchanged (Rosenthal-Heginbottom, 2003: 27). Regardless of the fates of the finished pieces, it is known that the Nabataeans did import at least some raw materials – in addition to their own local resources - in order to create their jewelry. These imported materials are potential signifiers of wealth and status when included among burial goods.

Pliny the Elder provided a list of seven sources for amethyst in the ancient world, sorted in descending order of quality. According to him these were India, Petra, Armenia Minor, Egypt, Galatia, Thasos, and Cyprus (Pliny the Elder, *The Natural History*: XXXVII, 1855). However, Pliny does not specify if the amethyst coming from these regions was in its raw material state or in a finished product; it is possible that some of these sources were middlemen rather than actual sources (Gourley & Johnson, 2020: 26). Therefore, Petra may have been a source of finished amethyst products only, meaning that the amethyst jewelry found in Nabataean burials may still have relied on imports for the raw materials.

There are some amethyst sources which would have been located within the boundaries of the ancient Nabataean Kingdom, but none of them are near Petra. Instead, the ancient mines are found along the west coast of modern-day Saudi Arabia and in the modern-day Sinai Peninsula, although the latter shows no evidence of ancient mining (Gourley & Johnson, 2020: 27-28). Garnet sources are also present within the boundaries of the ancient Kingdom, and evidence of ancient mining for copper and turquoise has been found in the region of the modern-day Sinai Peninsula as well (Gourley & Johnson, 2020: 27-28). Additionally, ancient gold mines have been found located on the coasts of the Red Sea (Gourley & Johnson, 2020: 27).

Figure 6: A map of the amethyst sources which would have been available to the Nabataeans. Image courtesy of Gourley & Johnson, 2020.

Therefore, the Nabataeans likely could have counted gold, amethyst, garnet, turquoise, and copper among their local resources. This will be important to keep in consideration for the analysis of the jewelry pieces in the following dataset (Appendix A).

Significance of Jewelry Types

Jewelry was an important part of ancient societies, not just for its aesthetic purposes but also for the purpose of status displays and magical protection (Almasri et al., 2012). The varied types of jewelry displayed in this data set hold great significance. There are many basic types of jewelry – necklace, bracelet, earring, etc. – but the styles and symbols of these pieces are what make them unique. For example, the lunate earring was a common form for earrings throughout the Middle East for millennia (Goldman, 1996; Rosenthal-Heginbottom, 2002). It is by observing the style of these jewelry types – as well as which general types were most common – that Nabataean culture may be better understood. A commonality in jewelry types is a possible indicator of cultural exchange.

In modern times, examples of this cultural exchange are found all around: non-Christians wearing crosses, non-Irish wearing claddagh rings, Ankh symbols in the Western world – these all bely the fact that these cultures interacted at some point, in some cases over decades and centuries, and one influenced the other to some degree. Likewise in ancient times, cultures rose, fell, and touched each other. A commonality in jewelry between the Nabataeans and other cultures could be a sign of this very type of cultural exchange. In fact, aside from architecture, it could be one of the only signs available at this present time since there are very few Nabataean-centric written sources.

There is also something to be gleaned from this kind of data about the homogeneity of Nabataean culture. Again, for a modern example, certain jewelry trends often convey information about an individual. In Western culture, large rings are often considered gaudy, and through media have often been stereotyped to eccentric and/or older women. “Respectable” men in Western societies usually wear no jewelry, aside from a wedding ring, and even today men who wear earrings (singular or plural) are considered rebellious or otherwise outside of the norm.

Unfortunately this kind of specificity is all but impossible to achieve from archaeological data alone, but contemporary Arabic cultures as well as modern Arab cultures can provide additional clues. For example, necklaces, armlets, and earrings are all known to have been present in Arab cultures which were contemporaries with the Nabataeans, such as Palmyra and Hatra (Almasri et al., 2012: 11). Earrings are also known to be used in modern Arab cultures, though typically only among women (Almasri et al., 2012: 4). Examining statuary is another way of gleaning information about jewelry trends among the Nabataeans, but that avenue lies beyond the scope of this thesis.

Still, with the analysis of this data set, it is important to keep in mind possible future analyses which could provide new insights, and could answer the question of Nabataean identity. Was there a coherent, homogenous Nabataean cultural identity throughout the Kingdom, or did different groups of Nabataeans view themselves as separate cultural entities, influenced by their nearest geographic neighbors? It is already known that Nabataean funerary architecture includes Assyrian, Greco-Roman, Egyptian, and Persian influences; these are present in carved symbols in the tombs’ facades (Alzoubi & Al Qudrah, 2015). Did this influence extend to sartorial choices as well? It is my hope that this data will provide a starting point for this conversation, which can then be further pursued in studies of statuary and other cultural resources.

Before engaging in this kind of analysis, though, it is necessary to define the terms that will be used. Ariel Polokoff (2020) has analyzed an assemblage of Hellenistic jewelry from the site of Maresha in southern Israel, and in the process provided clear definitions of different jewelry types which this analysis will likewise use.

According to Polokoff, jewelry is defined as "objects of personal ornamentation" as opposed to accessories, which "can be defined as something that is added to clothing, or useful for decorative purposes." (Polokoff, 2020, Conference presentation). Polokoff includes cosmetic utensils, rods, pins, and spatulas in this grouping of 'accessories.' Jewelry items, on the other hand, include rings, earrings, bracelets, beads, necklaces and pendants. Fibulae are included in both categories, depending on the assemblage and on the objects themselves.

For jewelry, Polokoff outlines the following definitions: rings are hoops which are worn on fingers, toes, or hung from a chain; earrings are jewelry pieces worn on the ears; bracelets are ornamental bands, hoops, or chains worn around the wrist, arms, or ankle; beads are jewelry that can be threaded, either themselves pierced or with side attachments for threading; pendants are pieces that are hung from a single side (as opposed to beads which are threaded through both ends); and fibulae are ornaments fastened to cloth by a clasp, hook, or catch-and-hinge pin, though they could also be used to fasten diadems and headdresses instead. It should also be noted that while Polokoff does not provide a specific definition for necklaces, she does remark that they are often made from groups of beads or pendants (Polokoff, 2020).

These different types of jewelry are extant in different contexts and quantities in Nabataean culture. Crowns and diadems, for example, are found depicted on coins, worn by members of the royal family (Polokoff, 2020). This is the only place they have been found so far, making them a rare and high-status piece. Earrings are also depicted on coins, but many

examples have been found in archaeological excavations as well, meaning they were a much more common form of adornment. Bracelets and necklaces are also present in burial excavations.

Aside from jewelry type and material, there are many other pieces of data which were also collected: the excavator, the date (or at least year) it was excavated, the site where it was found, its date of origin, size and shape, any symbols and/or imagery on the piece, and the gender of the remains the piece was found with (see Figure 7; Appendix A). Not every piece of data was available for every piece of jewelry, but as much as possible was collected. The primary motivation was to collect as much data as possible, first and foremost, because it is impossible to predict every potential use for the data. Future researchers may very well be able to find a use for some of the data which currently appears unusable.

Object	Archaeologist	Location/Site	Region	Date of Origin	Jewelry Type	Material	Notable Imagery	Size	Shape
32 miniature glass beads	N. Delhopital	Tomb IGN 103, Grave SF9, Locus 50405	Medina Selah	First century AD	Bead	Glass			
8 glass beads	N. Delhopital	Tomb IGN 103, Grave SF9, Locus 50405	Medina Selah		Bead	Glass			

Date of Excavation	Gender of remains	Description	Publication	Photo
2014	Juvenile	50405_G01. Glass beads, likely part of bracelet or necklace, found at the feet of the skeleton. 7 dark blue cylindrical beads; 5 dark blue spherical beads with white thread in the middle and marvered; 2 spherical beads made from dark blue and white thread, stretched and cut; 14 spherical beads in weathered light green glass; 1 cylindrical bead in weathered white glass; 3 coffee bean beads in weathered glass.	Abu-Azizeh et al., 2020; Delhopital, 2015b; Nenna, 2020.	Yes
2015	Juvenile (?)	Additional beads found in 2015 when screening collected sediment from SF9. 2 of the 8 have stripes which the others do not.	Delhopital, 2015b.	Yes

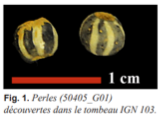
Description	Publication	Photo	Image 1	Image 2
50405_G01. Glass beads, likely part of bracelet or necklace, found at the feet of the skeleton. 7 dark blue cylindrical beads; 5 dark blue spherical beads with white thread in the middle and marvered; 2 spherical beads made from dark blue and white thread, stretched and cut; 14 spherical beads in weathered light green glass; 1 cylindrical bead in weathered white glass; 3 coffee bean beads in weathered glass.	Abu-Azizeh et al., 2020; Delhopital, 2015b; Nenna, 2020.	Yes		
Additional beads found in 2015 when screening collected sediment from SF9. 2 of the 8 have stripes which the others do not.	Delhopital, 2015b.	Yes	 Fig. 1. *Perles (50405_G01) découvertes dans le tombeau IGN 103.*	

Figure 7: The 15 categories of data collected.

Furthermore, there are some types of jewelry which have more developed fields of specialized study, and some of these data fields are more significant for these items. Beads, for example, have especially well-defined shapes: biconical, trapezoid, hexagonal, and conical beads are all present in my data set, as well as more familiar shapes like ovals and circles. In cases like these, this type of specificity in the data could be key to other researchers, even though this analysis will not have as detailed of an approach.

Significance of Burial Contexts

This research will focus on jewelry pieces that have been found in burial contexts. In Nabataean archaeology, burials are one of the few contexts which guarantee an element of intentionality. In domestic or public areas, there is a high likelihood that the jewelry piece was accidentally dropped, discarded, or otherwise left behind without purpose. There are some exceptions to this, of course – for example, temples or sacred sites – but by and large there is no certainty of the origin and purpose of these pieces. Burials, on the other hand, were locations which were purposefully visited. There are the deceased, of course, who were often buried with jewelry – it is known from several examples of primary burials with jewelry pieces found on fingers or wrists (for some examples see Delhopital & Sachet, 2011a: fig. 21-22; Delhopital & Sachet, 2011b: fig. 14-15). However, mourners would also have visited the site, not only for the initial burial but also for festivals and remembrance of the deceased. The living visitors would have been wearing jewelry of their own, and it is possible that some may have purposefully left some pieces behind.

As was discussed in Chapter 2 of this thesis, mourning practices are public manifestations of grief that do not necessarily reflect an individual's personal feelings (Porter, 2016: 157). However, it is these physical mourning practices which leave evidence among the archaeological record. Mourning may be defined as "a socially sanctioned or prescribed act, or series of acts, that appears to be an outward expression of grief" (Porter, 2016: 157). Therefore, it is these outward, cultural traditions which may be found in the material culture, such as a wedding ring buried with the deceased or the remnants of a funeral pyre. However, it should be noted that the existence of these practices as a cultural mandate does not necessarily mean that they do not also reflect the personal grief or other emotions of the mourners. No all acts of mourning leave physical traces, but the ones which do can be extrapolated into patterns of behavior and tradition which would have helped the living society to heal through the reconfiguration of social relationships between the living and the recently deceased (Porter, 2016: 173).

Most of what is known about Nabataean burial customs has been gleaned from the remains of these mourning practices in archaeological excavations as well as from the few contemporary literary sources. Careful comparison to the practices of other contemporary cultures often provides additional insight. For example, Strabo's statement that the Nabataeans treated their dead like dung was once taken quite literally, but is now believed to have been a misunderstanding of the practice of ritual open-air burials (Strabo, *Geography*: XVI.4:26, 1930). This type of burial is documented in Neolithic and Hellenistic Near Eastern funerary practices, and so is very likely to have been practiced among the Nabataeans (Alzoubi & Al Qudrah, 2015). The deceased would be laid out in an open location and, once the organic matter was consumed or decayed, the bones would be gathered and buried in a family tomb.

The tomb was considered to be the eternal home and was treated as such. Any violation against the tomb was considered a violation of sacred space, with corresponding consequences, as is shown in tomb inscriptions (Alzoubi & Al Qudrah, 2015). Personal objects were buried with individuals, including fine ceramics, glass make-up vessels, perfume bottles, bowls, cooking pots, storage jars, juglets, terracotta figurines, serving dishes – and, of course, jewelry. Ritual feasts were held, apparently in connection to the funerary practices; annual ritual meals were held in triclinia next to the most important tombs as a way of remembering the dead (Alzoubi & Al Qudrah, 2015; Ramsay & Perry, 2022).

Figure 8: The interior of a tomb at Little Petra (al-Barid). The triclinium would have been used for rituals meals. Note the basin in the bottom right corner of the image, which could have been used for washing before and after meals.

5 The Statistical and Stylistic Analyses

Tailoring the Statistical Approach

Three principle challenges characterized the data collection process. First was the varying quality of the available data, which was collected from a variety of sources. The process involved gathering publications of varying levels of detail – everything from site reports to journal articles – written by a variety of researchers and covering sites from three different countries. Some site reports included descriptions and images of the many beads that had been found, while other publications only mentioned, for example, that several bracelets had been found, with no mention of size, material, or even a specific archaeological context. This created a massive variation in detail which affected both the type and accuracy of data which could be collected.

The second challenge was the fact that not all data has been published, or is otherwise unavailable. Unknown quantities of data from many different years and many different sites have not been made publicly available; there are other excavations and projects which have been published, but only with partial data. While the ideal scenario would have been to include all the raw data from all past excavations, this was simply not possible. The third and final challenge is related to this issue of partial data: many publications did not provide a concrete number of items which had been excavated. There is still value in this incomplete data, but it required some manipulation in order to be included in a statistical analysis. By assuming a minimum quantity of "1" for any unclear entry – for example, inputting entries for '1 bronze bracelet' and '1 iron bracelet' for a source which only states "some bronze and iron bracelets" – it is possible to reach a level of statistical relevance that is useful to the analysis.

The goal of a unified system of description required some adjustments to the 'jewelry type' category as well. There are some jewelry types which are very specific and cannot be confidently assigned without clear archaeological context. For example, anklets and bracelets are differentiated by where they are worn, but are often visually identical; as an archaeologist, it would be impossible to say if a piece was worn on the wrist or the ankle unless it was found *in situ* at one of those locations on the body. Therefore, the few pieces in this data set which were described as anklets were re-categorized as bracelets to allow for a broader data sorting, and this same approach was used for some beaded pieces of jewelry. Where a publication described a grouping of beads as a necklace or bracelet this was broken down into entries for individual beads in order to better analyze the material and type. Furthermore, in cases where earrings were found in a pair they were counted as a single unit in order to facilitate the stylistic analysis. One final adjustment was to streamline the language of the 'shape' category; for example, any piece described as lunate, crescent, or crescent moon-shaped was simplified to 'lunate.'

Statistical Analysis

Very few, if any, depictions of the Nabataeans have survived to the present day. No Nabataean portraits or funerary busts have survived, as they have from Hellenistic Palmyra and Egypt, making it difficult to know how the Nabataeans perceived themselves sartorially. The jewelry they chose to be buried with – or had chosen for them – can be revealing in this respect, because these pieces can act as indicators of individual and social identity. The types of burials in which they are found are also revealing, as they are solid indicators of socio-economic status. As stated previously, the Nabataeans employed at least three methods of burial, the most well-known of which are the monumental façade tombs (Alzoubi & Al Qudrah, 2015). The bulk of

the data comes from these façade tombs, simply because these are some of the best preserved and most studied. These elaborate, publicly visible burials were reserved for the highest-ranking members of Nabataean society; this is discussed more in-depth later in this chapter.

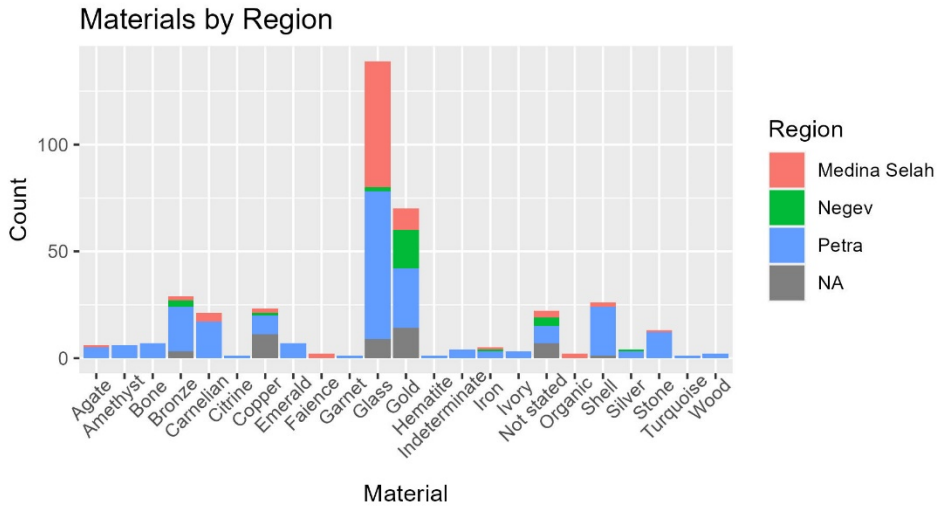


Figure 9: A graph depicting the occurrence of different materials by region.

By far the most common material for jewelry pieces was gold, which was present in all three regions. Bronze and glass were also present in each region, and were relatively common; shell was approximately as common as bronze and glass, but was only extant in the Petra and Medina Selah regions.

Beads are the most common type of jewelry represented in the data, closely followed by earrings. Earrings also have a fairly even spread among the three regions, in that they show up about the same amount in each one. Beads, by comparison, are vastly more common in the Petra region than in either of the other two. Pendants are the next most common item, also

overwhelmingly represented in the Petra region; after that is rings, with a more even spread across the three regions.

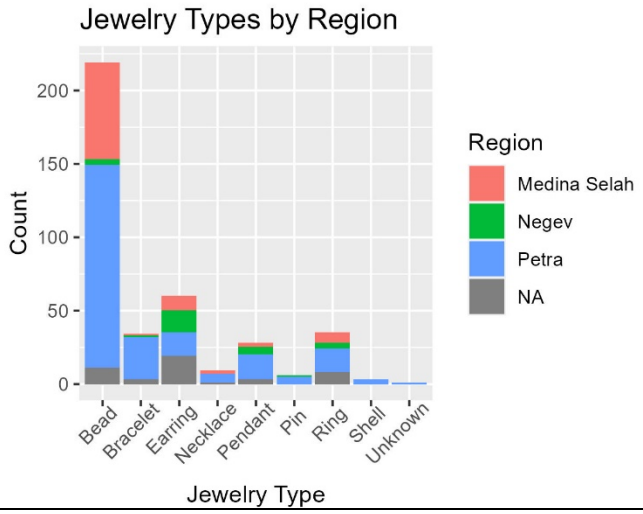


Figure 10: A graph depicting the occurrence of different jewelry types by region.

Shells occur in the data as both a material and a jewelry type. In the case of the former, pieces of shell were carved into circular or tubular beads, divorced from their original shape. In the latter, whole shells, relatively unchanged, were used as jewelry (see Figure 11 for examples of both types of shell beads). Some shells naturally have openings at either end that would have allowed them to be strung into necklaces and bracelets; others clearly have man-made holes drilled into them for the same purpose.

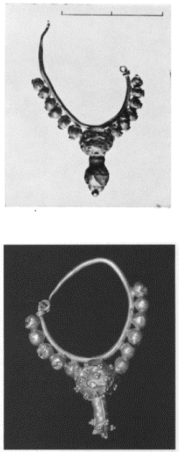
Figure 11: Several different types of shell beads from an assemblage from Medina Selah (Abu-Azizeh, 2015).

Stylistic Analysis

For a stylistic analysis, all available images of these jewelry items – including both photographs and drawings – were pulled and grouped by region, then visually examined for stylistic similarities and differences. What follows is an overview of significant or noteworthy pieces from each region and a discussion of jewelry styles by region. All images from Dr. David Johnson's excavations at Wadi Mataha are used with permission; all other images are from publicly available sources and have been cited accordingly. Detailed information on each piece is collected in Appendix A.

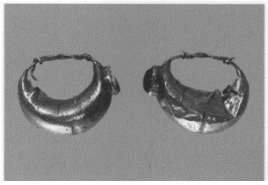
Negev

The excavated tombs of the Negev have produced several pieces of jewelry. Of those with available images are two nose rings, which are unique in their mere existence (Rosenthal-Heginbottom, 2015). There are many Nabatean rings of uncertain use (i.e. finger, nose, toe), but what sets these nose rings apart and makes them identifiable is their shape. They have a slanted wire and asymmetrical design; both are especially similar in this regard, having smaller balls attached to the base wire on either side of a central, elongated element (see Figures 12 & 13).



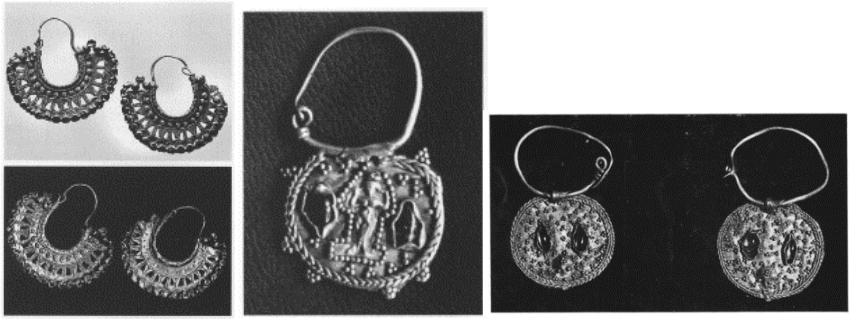
Figures 12 & 13.
Top: a nose-ring from Avdat (Rosenthal, 1974).
Bottom: a nose-ring from Mampsis (Rosenthal, 2015).

Many earrings were also found in this region. Most of them are of the lunate type, though they can be further subdivided into 'plain' and 'elaborate' lunate earrings. Of the former there are two pairs (Figures 14 & 15); these are thick gold crescent-shaped pieces, at least one of which was likely created using the beating over a core method. This pair also has a single inset on either earring (Rosenthal-Heginbottom, 2015).



Figures 14 & 15: gold lunate earrings from Mampsis (Rosenthal, 2015).

The elaborate lunate earrings from this region are particularly interesting. One pair (Figure 16) is made up of an almost lacelike filigree of golden bars and triangles and gold ball granules; this was a fairly common style throughout the Near East at that time. The other earrings from the Negev, however, are very unusual. One (Figure 17) is a rough disc made of gold on which a female figure with upraised hands has been shaped. She is surrounded by an outline of gold granules and, on either side, eye-like insets. In some publications this figure is referred to as Alat-Aphrodite (Negev, 1971). Another pair (Figure 18), found in a different grave, are likewise made from a gold disc with granules across the surface, without the humanoid figure but with similar eye-like insets.



Figures 16-18 (L-R): 3 styles of gold earrings from the Negev region (Rosenthal, 2015; Negev, 1971).

There is one last pair of earrings (Figure 19) which deserves mention for its unique style. These earrings are perhaps comparable to what would today be called stud earrings. Although they have a wire hoop and closure, it is a very small one, and that combined with the orientation of the decorative elements means that the piece would likely have fit very close to the ear lobe itself. The decorative part of the earring is very vertical in its design, made up of a shield-like disc with a loop beneath it, from which hangs something like a wire coil. This design is visually much simpler than many other examples of Nabataean earrings.

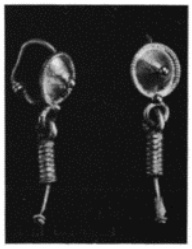


Figure 19: Gold shield-and-pendant style earring pair (Negev, 1971).

Medina Selah

Many of the jewelry pieces from Medina Selah are well-photographed, creating a somewhat larger range of jewelry pieces available for stylistic analysis. Many finger rings, earrings, and beads are in evidence, as well as a bracelet and two necklaces.

Many of the beads were made of glass; many shell beads were also in evidence, but the glass beads display a fascinating range of design elements and manufacture techniques. Several of them have stripes of color laid on top of a different base color. Some mosaic beads even include three or more colors in their design (Delhopital, 2015b has several examples). It can be difficult to tell with the wear of time on the material, but many of the beads are dark in color, mostly black or red. The few stone beads which have been excavated are likely made of carnelian; this was a popular material for jewelry in the ancient world. Of the shell beads, several are mostly intact shells which have been pierced, but the majority are either tubular or circular

beads which have been cut and shaped so that they no longer resemble actual shells (see Appendix A for images and information on these stone and shell beads).

Some of the especially unique pieces from these excavations include a flower-shaped glass bead (Figure 20) and two necklaces made from organic material – dates and seeds, respectively - strung together (Figure 21). As far as is known, these latter two are the only surviving examples of jewelry of their kind.

Figure 20: Fragment of a flower-shaped bead (Delhopital, 2015b).

Figure 21: Organic beads (Bouchaud et al., 2015).
Top: pierced seed with remnants of twine.
Bottom: pierced dates strung together with plant matter, encased in leather and textile.

The earrings from Medina Selah display a wide variety of styles. Four gold elaborate lunate-type earring pairs were discovered (Goldman, 1996), but in addition to these, one pair of gold baretta-type earrings, one pair of gold shield-and-pendant type, and four pairs of smaller, less ostentatious gold earrings were also found (Figure 22). Two of these are hoops with small

Figure 22: (clockwise) Examples of Nabataean earrings of the baretta-style, shield-and-pendant style, and with animal-head finials (Rosenthal-Heginbottom, 2016).

decorative elements; two are vertical designs with animal head finials (Rosenthal-Heginbottom, 2015; Rosenthal-Heginbottom, 2016).

The bronze bracelet deserves to be mentioned for its similarity in design to Persian jewelry and other bracelets from contemporary cultures. Its spiraled body and shaped finials are striking and bold in their design (Delhopital, 2015a). The rings from Medina Selah also bear a resemblance to the rings of contemporary cultures; nearly all of them have bezels, though not all of the inset stones have survived to the present day. Of the ones which remain, however, at least two of them seem to have been darker in color (see Appendix A for examples of these bezel rings).

Petra

Due to the generous contributions of Dr. David Johnson, much more data from Petra - including images - is available for this analysis. The jewelry of Petra continues the trend of bezeled rings and beads made of amethyst and carnelian; in fact, the vast majority of pieces from

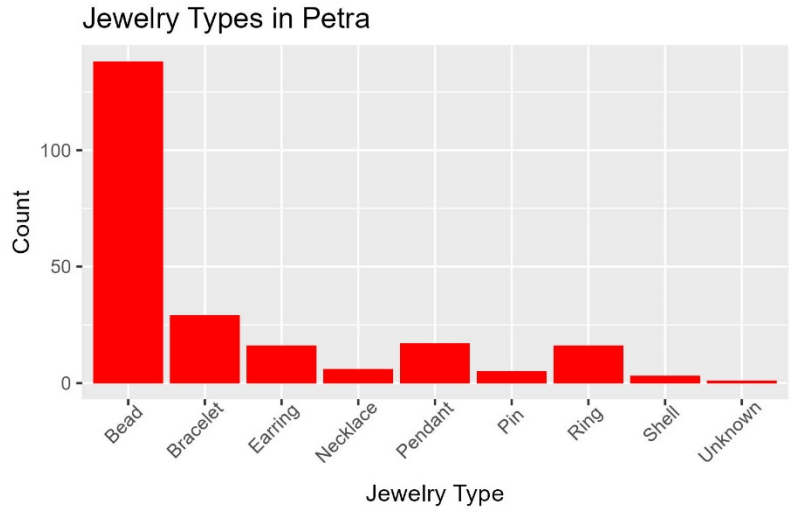


Figure 23: A graph depicting the frequency of various jewelry types within the Petra region.

the region are beads made from a variety of materials, including carnelian, amethyst, agate, glass, shell, wood, and painted stone (see Figures 23 and 24). Several earrings and pendants are also in evidence.

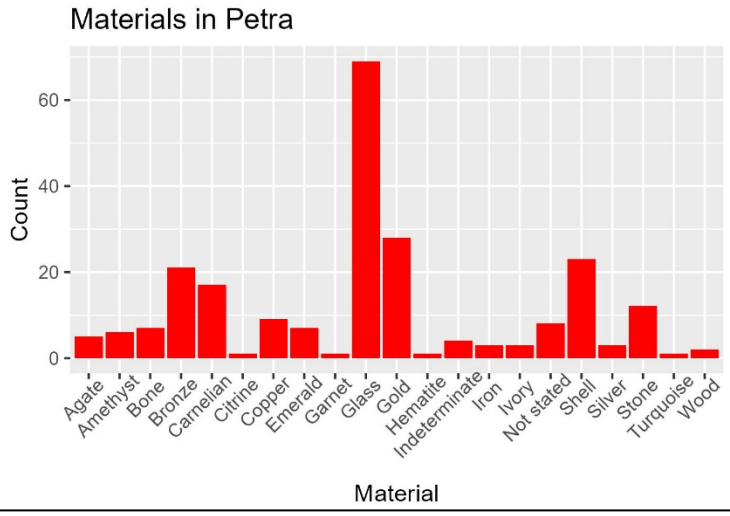


Figure 24: A graph depicting the frequency of various jewelry materials within the Petra region.

Many of the most unique pieces come from a veritable cache of Nabataean jewelry which was excavated in 2014 by Dr. David Johnson at Wadi Mataha. Aside from several agate and amethyst beads, 8 gold pendants were found: 3 in the shape of spoked wheels, 2 shaped like cowrie shells, 1 gold braid encircling a purpleish stone, and 2 flat, square pieces with etched designs (see Figure 5; Appendix A). A pair of gold earrings or buttons was also found, made to resemble small flowers with reddish-brown stones at their centers (see Figure 5; Appendix A).

All of these items are rich in symbolism. The cowrie shell was a common symbol of female fertility in the region (Johnson, "Gold Jewelry," n.d.) and, in a burial context, would have conveyed themes of rebirth and renewal. One of the flat square pieces is etched with the image of a scorpion. Depictions of scorpions were used for protection as a type of sympathetic magic;

wearing the image of a scorpion was thought to protect the individual from scorpions in the real world (Johnson, "Gold Jewelry," n.d.). The other square piece has several figures depicted on it, including a bird on a branch, a lioness sphinx, and a possible depiction of the god Bes. All three of these are known Egyptian symbols (Johnson, "Gold Jewelry," n.d.; Pinch, 1995) which serve various apotropaic functions. The spoked wheel or rosette was another common symbol in the region and has been connected in Greco-Roman contexts with the sun god Helios, as a representation of the chariot with which he pulls the sun across the sky (Johnson, "Gold Jewelry," n.d.).

Several other notable jewelry pieces have been found by excavations along the north ridge of the city as well as sites further, such as Khirbet edh-Darih. These pieces provide some fascinating additions to existing data on amulets/pendants. There are three especially notable pendants: an oblong gold pendant with a large polished agate set in its center (Perry, 2017); a somewhat T-shaped gold pendant with a white stone (?) at its center, possibly meant to resemble a bird (Perry & Walker, 2018); and a gold, rounded pyramidal pendant, almost acorn-shaped, with a seam approximately a third of the way down from the top (Sachet et al., 2013).

Figure 25: The gold bird-and-pyxis earring from Khirbet edh-Dharih (Almasri et al., 2012).

Several earrings, both singles and pairs, have also been found, but arguably one of the most unique is a bird-and-pyxis shaped earring from Khirbet edh-Dharih (Figure 25). Another earring is a simple wire hoop with a shell bead pendant attached (Almasri et al., 2012). What is especially interesting is that this pendant is loose, which would have allowed it to move freely as its wearer moved. Another single

earring is of the shield-and-pendant type, but this one has three discs stacked on top of each other into a triangle, with three hanging baubles in a row at the bottom (Wadeson, 2014). The provided image does not give a clear view of the clasp mechanism, but it seems as if this earring would have sat close to the ear lobe.

Another interesting piece is a garnet bezel from Khirbet edh-Dharih. It is oval in shape and has a bas-relief carving of a humanoid figure standing, possibly meant to depict a winged victory goddess (Almasri et al., 2012).

Synthesis

As far as jewelry types, materials, and imagery, the Nabataeans were in-line with many Hellenistic trends while also maintaining their own unique stylistic identity. There is also evidence of some regional differentiation within the Nabataean Kingdom itself.

The materials used in Nabataean jewelry are in evidence throughout their contemporary Hellenistic world, from Hellenistic Egypt to Rome. Much of the imagery in Nabataean jewelry is likewise shared with their Hellenistic neighbors. For example, images of deities such as Bes, al-Uzzah, or a victory goddess fit in well with similar apotropaic pieces of Roman and Egyptian origin (Patrich, 1984; Pinch, 1995). In Egypt, the wearing of amulets and images of deity – especially postmortem - had already been common practice for millennia, and continued into the Hellenistic period (Pinch, 1995). Jewelry from other Hellenistic cultures did not necessarily include many images of deity, but did include other apotropaic symbols (Scheurleer, 1996: 160; Almasri et al., 2012: 15).

The dolphin was another common symbol. The gold pendants from the Negev (Figure 26) have many relatives throughout the Mediterranean (Scheurleer, 1996: 160; Rosenthal-Heginbottom, 2015: 160). Gold lunate earrings, similar to those found in all three of the main Nabataean regions, are also found in regions of ancient Syria and throughout Mesopotamia (Goldman, 1996). Rosettes, birds, and scorpions are symbols which are likewise attested in many parts of the ancient world.

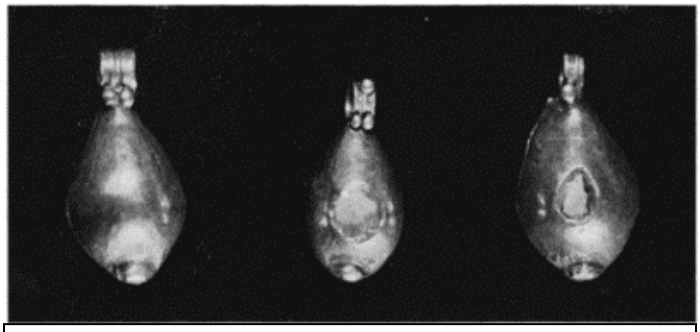


Figure 26: 3 dolphin pendants from excavations at Mampsis (Negev, 1971).

In addition to these many commonalities, each of the three Nabataean regions also have their own indicators of local stylistic influence. The Negev is the source of the only two nose rings in this data set; Medina Selah includes the only surviving instances of organic jewelry; and Petra, a busy metropolis in its time, provides examples of a wide variety of earring styles, including the gold bird/pyxis earring which bears no resemblance to any other Nabataean style. Therefore, it is reasonable to conclude that the Nabataean style of jewelry was a product of both internal and external influence. The intensity of the external (i.e. Hellenistic) influence seems to have varied among the regions, likely based on a variety of factors such as population demographics and location relative to trade routes. For example, Petra, as a hub of trade and with a culturally diverse population, would have had much greater exposure to external cultures than the more isolated settlements of the Negev.

It is not within the scope of this project to fully investigate the various cultural influences which exerted control over Nabataean sartorial tastes. However, it is noteworthy in itself that Nabataean jewelry seems to have taken stylistic cues from both surrounding Hellenistic and local Arab cultures. The context in which these pieces were found may help to explain some of this. These pieces were all found in burials, many in monumental tombs of some kind, meaning they belonged to the more affluent members of Nabataean society. Even those which were buried in shaft tombs would have been individuals or families which were able to afford its construction. Therefore, the jewelry pieces found in these burials are representative of the higher echelons of the region and reflect their style. This should be factored into any analysis of jewelry trends; after all, in a society that depended so heavily on its relationships with other cultures to maintain their extensive trade capabilities, it is very possible – even likely – that its wealthiest members were conscious of jewelry styles as a way of ingratiating themselves with those around them.

The various sites were certainly influenced by their own locations and general economic statuses as well. Nabataean trade routes brought financial prosperity to the kingdom, and so any location along those routes would have benefited from this wealth. Petra, as the capital, would have naturally been more metropolitan; its multi-ethnic, multi-national population would have brought in a wide range of wealth and styles. This is evident in the wide variety of jewelry from this region in the dataset.

Medina Selah has the next highest number of pieces in the dataset. Its location would have placed it directly along the incense trade route from the southern region of the Arabian Peninsula up to Petra, making it another wealthy city. The pieces which have been found there corroborate this: several millefiori-style glass beads have been excavated, as well as a wide

variety of finely-crafted earrings in various styles (baretta, shield-and-pendant, lunate; see above). The quality and quantity of these pieces attest to the affluence of the city.

The Negev region, in contrast to both Petra and Medina Selah, shows a relative paucity of jewelry. The pieces which are attested here are primarily made of gold; very few pieces with worked glass or gemstones have been found. The quality of the pieces is still excellent, as seen especially in the elaborate gold earrings (see Figures 16, 17). As mentioned earlier, these pieces are representative of what the wealthiest individuals were wearing, and this is evident in their level of craftsmanship; the small quantity of pieces is likely a reflection of the small number of wealthy Nabataeans who lived in the area. The hostile environment of the Negev would have lent itself more to small communities of poorer individuals.

The final factor to consider in this analysis is the materials used in these jewelry pieces. As seen in the graphs above, glass is clearly the most common material, followed by gold; bronze, copper, carnelian, and shell are also common. These are all materials which would have been available to the Nabataeans either locally or by trade. What is especially interesting are the variations in material by region. The Negev is the only region of the three with no jewelry pieces made from shell; even though Petra and Medina Selah are both also inland, they have many attested pieces of shell jewelry, which could be an effect of their location along the trade route. Petra certainly displays its status as a trade hub in its wide range of jewelry materials, the greatest of the three regions. Amethyst, bone, citrine, emerald, garnet, hematite, ivory, silver, turquoise, and wood are all materials which are only found in jewelry from Petra.

Visually, these materials offer an array of colors for a wearer to choose from. Based on the most common materials – excluding glass for now, as glass pieces have been found in a variety of colors – the general color palette of Nabataean jewelry was gold, bronze/copper, and

red. Adding the many attested colors of various glass beads expands this palette to include blue, green, white, black, and some yellow. It is interesting to note that most of these colors could have been obtained from available semi-precious stones – blue from turquoise, green from emerald, yellow from citrine – and yet it is the glass versions of these colors which are overwhelmingly present. This could be due to a number of factors: modern looters preferring stones over glass, ancient Nabataeans having a preference for one over the other, or the individual tastes of the deceased. A full investigation is not within the scope of this project, but it is worth some discussion, especially in relation to the availability of these various materials.

As discussed earlier in this chapter, the Nabataeans would reasonably have had local access to gold, copper, amethyst, garnet and turquoise. And yet, gold is the only one of these materials evident in any great quantity, along with a handful of copper pieces. Several amethyst beads have been found, though only in Petra; only two jewelry pieces include garnet, one each from Petra and Medina Selah; and the only turquoise so far excavated is a worked piece from Petra of unclear use. The question then remains: why are these local resources not more common in Nabataean jewelry? Issues of looting aside, there are many possibilities, each of which would require further investigation to verify with any degree of certainty: perhaps the Nabataeans saw less value in such readily available materials, and preferred more exotic imports to display wealth and status; perhaps they traded these local materials for other items of greater value; or perhaps there was some symbolic meaning in the materials which would not have been appropriate for most burials. This may not be the case with amethyst – which, per earlier discussion in Chapter 2 of this thesis, has been linked to fertility and resurrection in both Egyptian and Greek cultures and thus would make perfect sense in a tomb (Johnson, “Gold Jewelry,” n.d.) – but may have been true for turquoise or other materials.’

6 Conclusion

The objective of this thesis was to gather the data necessary to create a semi-comprehensive catalog of jewelry pieces which have been found in burial contexts in the regions of Petra, Medina Selah, and the Negev. This has been accomplished, with some limitations which are summarized below. The purpose of this catalog was to enable a comparison in both style and material preferences among the three regions, thereby achieving a greater understanding of the homogeneity (or lack thereof) of Nabataean culture.

This catalog is included in this thesis as Appendix A, and as was discussed in the previous chapter a preliminary analysis suggests that jewelry styles were relatively homogenous across these three regions. The principles of mortuary theory suggest that objects which were interred as grave goods hold socio-cultural and/or personal significance (most likely some combination of these). Therefore the occurrences of similar jewelry types – bracelets, rings, earrings – across the regions, as well as several common materials – gold, glass, bronze – suggest a general commonality of culture among the wealthier Nabataean residents of the three regions.

Implications

This project began with the hypothesis that the three Nabataean regions had distinct and unique jewelry styles which would be apparent in the categories of both jewelry type and material. Logically, these styles would be influenced by a combination of internal and external cultural exposures (i.e. cultural minorities living within the region as well as foreign neighbors).

Unfortunately, the data presented here in this thesis does not allow for such a definite conclusion. There are certainly some pieces which are unique to each region – date and seed necklaces from Medina Selah, dolphin pendants from the Negev, amethyst beads from Petra (see discussion in chapter 3 for more information on these pieces) – but there are not enough occurrences of these anomalies to draw any firm conclusions. The overall trend, in fact, is towards a relatively homogenous jewelry style and material use which corresponds with the trends of contemporary Hellenistic and Hellenized cultures. This is arguably an instance of outside influence, as the Nabataeans had their roots in nomadic Arab tribes and Hellenistic styles originated in the Mediterranean, but no quantifiable regional distinctions are in evidence.

And yet, even an uncertain conclusion can be informative. Throughout history humans have sought simultaneous inclusion and uniqueness; within individual societies, trends and styles espoused by the wealthy are imitated by the poor, though with cheaper materials and often simplified designs. One example of this in modern Western culture is the cyclical rise and ebb of lavish, performative funerals to stately, minimalistic services, to unadorned cremation (Pearson, 1999). Furthermore, humans often use clothing and adornment as a tool towards acceptance within cultural groups, whether their own or others (for an example of this, see Bittman & Sullivan, 1978 for information about the Aztec spies who disguised themselves to infiltrate enemy cultures).

Based on these behavioral trends, it is possible that the wealthy, upper-class Nabataeans adopted Hellenistic-style jewelry, perhaps with some local modifications, at least in part to garner acceptance from their neighbors, whom they would have relied on as clients of their trade empire. The members of the Nabataean lower classes would then have adopted simplified versions of this same style, though possibly with a greater degree of preserved local cultural

influence. Although lower-class burials are not often found, if any were to be excavated it could be expected to see a greater occurrence of stylistic anomalies as an indicator of local influence on jewelry trends.

Limitations

As was discussed in previous chapters, there were several limitations which affect this data, chief among which are the issues of survival bias and inaccurate reporting. The latter refers to the variable quality and quantity of data available in published journal articles and site reports. Survival bias encompasses more nuance in that it accounts for multiple factors which can and have affected the data. It accounts for both ancient and modern looting being informed by the value of certain materials, the bias of individual Nabataeans in choosing which pieces would be buried with the deceased and why, and the bias of which types of burials are most likely to be excavated.

These biases can accumulate but may also cancel each other out. For instance, looters are more likely to take gold pieces because of the metal's value and comparative rarity. And yet, the burials which have historically been chosen for excavation are those which belonged to wealthier Nabataeans – the façade tombs are obvious, awe-inspiring landmarks, and clear choices for exploration – meaning that the jewelry interred therein is more likely to be of higher value and design quality. Therefore, statistically speaking, even with looting there is a higher likelihood of gold pieces from these tombs surviving to the present day, simply due to the greater quantity of gold which would have been interred in the first place.

These biases and limitations mean that the data contained in this thesis is only a piece of the full picture of Nabataean jewelry. Still, it is valuable in providing insight into Nabataean culture, as it represents a key aspect of the adornment they used to express themselves, both as individuals and as members of their cultural group.

Future Considerations

The data presented in this thesis will hopefully be only the first of its kind. Jewelry has been a part of personal and cultural expression throughout human history and is thus an essential facet of understanding human culture. This thesis is the first to take a comprehensive approach to Nabataean jewelry and look at broad regional trends. There are many potential uses of this data, not all of which could be fully explored within this thesis. But as excavations of Nabataean sites continue, it is my hope that this data set may be expanded and used to give insight into such topics as trade, international relations, and religious observance of the Nabataeans in these regions.

This thesis began with the intention of creating a searchable database of excavated jewelry pieces from sites within the ancient borders of the Nabataean Kingdom. However, for reasons of time and feasibility, it became necessary to focus the research on jewelry pieces found in burials; it is not possible at this stage to create a fully searchable database. To do so would require a high level of programming skill and the means to house the database in perpetuity. However, the concept of a centralized, searchable database available for research is still a viable one, and something that will hopefully be created by other researchers in the future.

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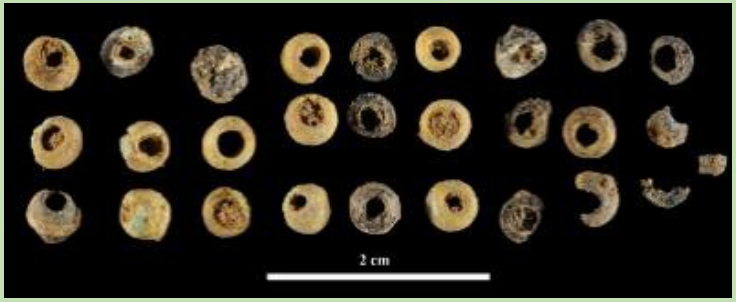
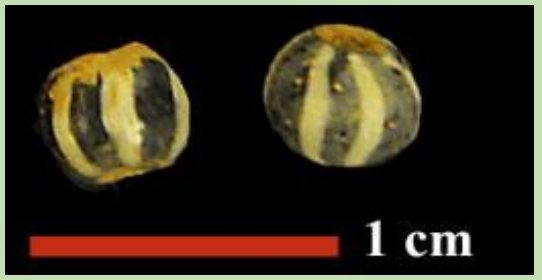
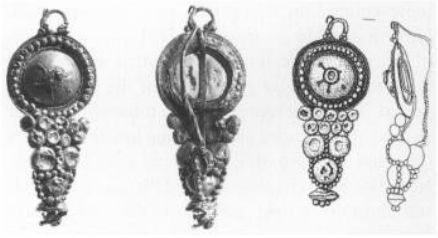
Appendix A

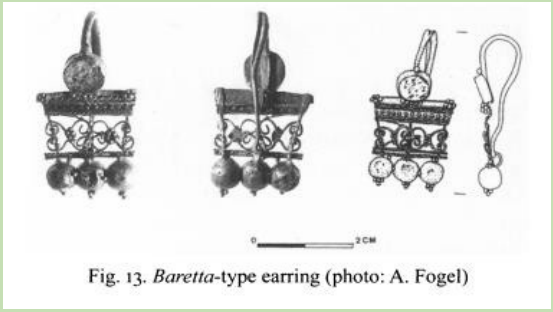
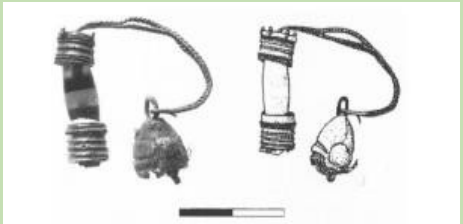
This appendix is an overview of each jewelry piece in the dataset, including available images. In the “Publications” column, * was used to indicate which publication was the source for the included image. In the cases where multiple images were used from different sources, moving L-R, * indicates the source for the first image, ** indicates the source for the second image, and *** indicates the source for the third image.

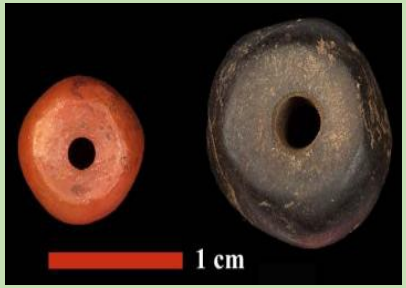
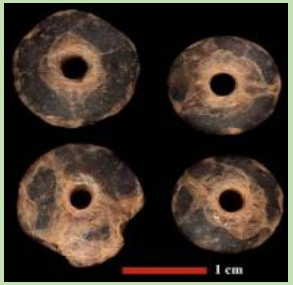
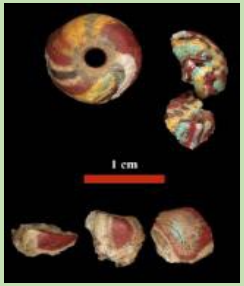
Object	Location/Site	Region	Jewelry Type	Material	Description	Publications
32 miniature glass beads	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah	Bead	Glass	50405_G01. Glass beads, likely part of bracelet or necklace, found at the feet of the skeleton. 7 dark blue cylindrical beads; 5 dark blue spherical beads with white thread in the middle and marvered; 2 spherical beads made from dark blue and white thread, stretched and cut; 14 spherical beads in weathered light green glass; 1 cylindrical bead in weathered white glass; 3 coffee bean beads in weathered glass.	Abu-Azizeh et al., 2020; *Delhopital, 2015a; Nenna, 2020.
						
8 glass beads	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah	Bead	Glass	Additional beads found in 2015 when screening collected sediment from SF9. 2 of the 8 have stripes which the others do not.	*Delhopital, 2015b.
					 	

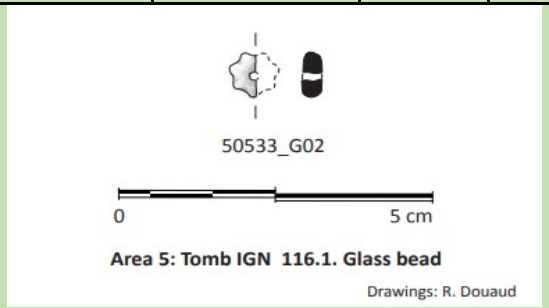
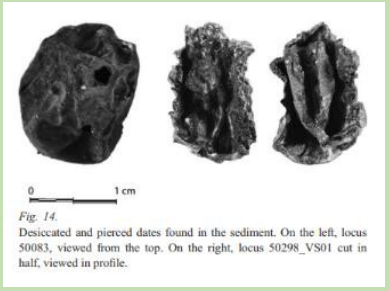
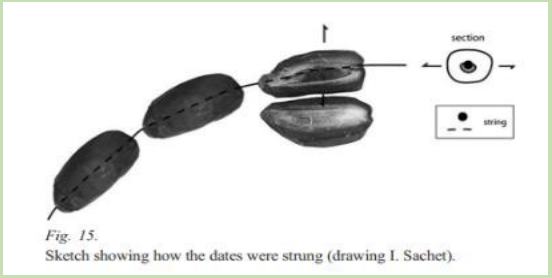
Shell beads	Cairn F19, Loculus 42012, 42014, and 42022	Medina Selah	Bead	Shell	Conus shell beads. Found in compartments (burials) in the wall of the structure.	*Abu-Azizeh, 2015; Studer, 2015.
	  					
Twisted bronze bracelet	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah	Bracelet	Bronze	Found near the left arm of the skeleton.	*Delhopital, 2015a; Nenna, 2020.
						

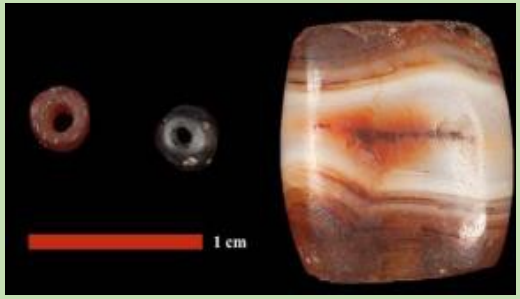
Earring pair	Qasrawet, Tomb 2	Medina Selah	Earring	Gold	Pair of hoop earrings with a fixed pendant in the shape of an inverted pyramid. Its upper side is a flat trinagular plate soldered to the hoop. The body is formed with three other triangular plates which are decorated with granulation. The tip of the pyramid is finished with three granules soldered together in a vertical row.	*Rosenthal-Heginbottom, 2015.
	 Fig. 9. Pair of hoop earrings with pyramid pendant (North Sinai Survey, E.D. Oren)					
Single earring	Qasrawet, Tomb 2	Medina Selah	Earring	Gold	A single hoop earring with a fixed pendant. It is of the navicella type, made with the beating over a core method. The gold foil has several holes and cracks. The ends of the hops are flattened and spiralled around the wire. The pendant is made of five granules soldered together to form a bunch of grapes.	*Rosenthal-Heginbottom, 2015.
	 Fig. 10. Hoop earring with immovable pendant (photo: A. Fogel)					

Single earring	Qasrawet, Tomb 2	Medina Selah	Earring	Gold	A single shield-and-pendant type earring. It is made of a convex shield at the top, below which is attached a fixed inverted-triangle pendant made up of many smaller circles, not dissimilar to a bunch of grapes. The center of the shield has a star-shaped rosette: a red stone set in a bezel, with five (originally six) granulated rays surrounding it. The shield is encircled with granulation and granulation surrounds the lowest circle of the pendant as well.	*Rosenthal-Heginbottom, 2015.
		 Fig. 14. Shield-and-pendant earring (photo: A. Fogel)				
Earring pair	Qasrawet, Tomb 1	Medina Selah	Earring	Gold	A pair of earrings with lion's head finials from Tomb 1.	*Rosenthal-Heginbottom, 2015.
		 Fig. 12. Pair of earrings with animal head finial from Tomb 1 (North Sinai Survey, E.D. Oren)				

Single earring	Qasrawet, Tomb 2	Medina Selah	Earring	Gold and glass paste	A single baretta-type earring. It's made with a blue glass paste bead set in a bezel at the top, underneath which a square gold pendant is attached. The ratio between bezel and pendant is roughly 1:3. The pendant consists of two bars with gold wire filigree between them; granulation decorates throughout. Below the lower bar of the pendant there is a row of three large globules, each with granule clusters at their base.	*Rosenthal-Heginbottom, 2015.
					 Fig. 13. *Baretta*-type earring (photo: A. Fogel)	
Single earring	Qasrawet, Tomb 2	Medina Selah	Earring	Gold and oynx	A single earring with a broken animal-head finial attached to the earring body with a doubled wire. The body is made of a barrel-shaped piece of onyx between two wire-decorated gold caps, from which the gold wire hoop/hook emerges. The animal head was originally attached to one of the gold caps around the onyx; the animal cannot be clearly identified, but 'dolphin' is a possibility.	*Rosenthal-Heginbottom, 2015.
					 Fig. 11. Earring with animal head finial (photo: A. Fogel)	

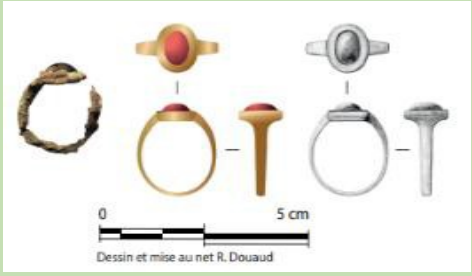
2 Bes pendants	Hegra, Tomb 116.1, West Chest	Medina Selah	Necklace	Faience	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 2 faience pendants in the form of the god Bes. The faience is blue-green with yellow spots.	Abu-Azizeh, et al., 2020; Nenna, 2020; *Delhopital, 2015b.
						
14 glass beads	Hegra, Tomb 116.1, West Chest	Medina Selah	Necklace	Glass	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 14 glass beads (50533_G01-G02): 5 biconical black glass; 3 spherical black glass; 1 spherical black glass; 1 spherical black glass with white thread in the middle; 3 cylindrical black glass; 2 mosaic glass of white, light green, yellow, deep blue, red, stretched and twisted; fragments of mosaic glass of white, light green, yellow, deep blue, red; body fragment of brown glass with one incised line.	Abu-Azizeh, et al., 2020; Nenna, 2020; *Delhopital, 2015b.
				   		

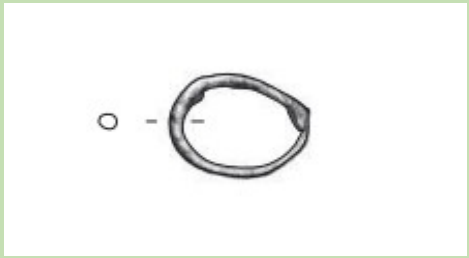
Flower bead	Hegra, Tomb 116.1, West Chest	Medina Selah	Necklace	Glass	From a find of over twenty-four glass and stone beads, representing one or more necklaces: one half of a flower-shaped bead made from colorless glass (50533_G03).	Abu-Azizeh, et al., 2020; *Nenna, 2020; **Delhopital, 2015b.
						
Date necklace	Tomb IGN 117	Medina Selah	Necklace	Organic	Pierced dates strung together with plant matter (date-palm leaflets), found encased in leather and fabric.	*Bouchaud et al., 2015.
	 *Fig. 14.* Desiccated and piereed dates found in the sediment. On the left, locus 50083, viewed from the top. On the right, locus 50298_VS01 cut in half, viewed in profile.	 *Fig. 13.* Detail of item 50240_L02 and the five dates.			 *Fig. 15.* Sketch showing how the dates were strung (drawing I. Sachet).	

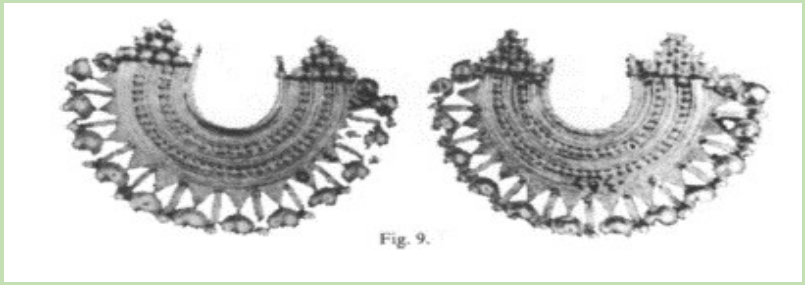
Seed necklace	Tomb IGN 88	Medina Selah	Necklace	Organic	A necklace fragment made of four seeds strung together on a thread (50420_V01). It was found encased in resin which had also preserved the impression of a textile weft.	*Delhopital, 2015a.
	 **Fig. 22**. A whole seed (photograph C. Bouchaud).  **Fig. 23**. A seed cut in half (photograph C. Bouchaud).				 **Fig. 21**. A fragment of seed necklace (?) found encased in resin, 50420_V01.	
5 stone beads	Hegra, Tomb 116.1, West Chest	Medina Selah	Necklace	Stone	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 4 spherical carnelian, 1 cylindrical agate bead.	Abu-Azizeh, et al., 2020; Nenna, 2020; *Delhopital, 2015b.
						

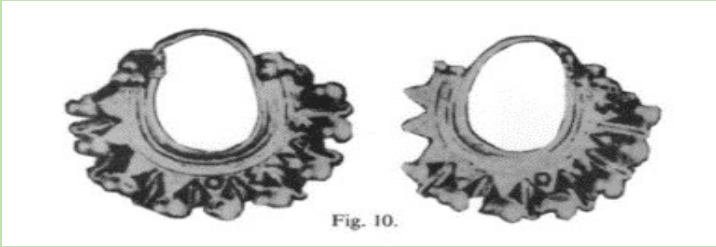
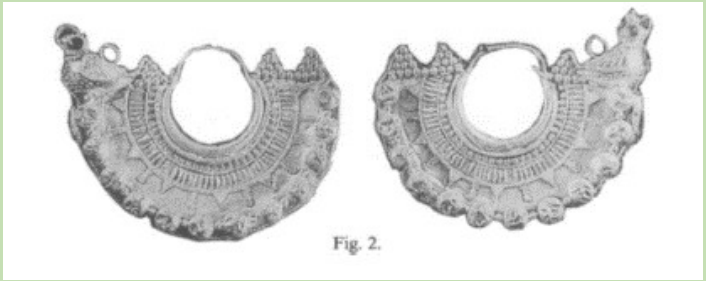
Pendant	Not stated (possible non-burial)	Medina Selah	Pendant	Copper alloy	Attached to an iron ring, possibly part of a necklace or earring. Item 34509_M01.	*Peillet, 2020.
						
Bronze ring	Hegra, Tomb 117, Loculus 50223	Medina Selah	Ring	Bronze	No additional description provided.	*Delhopital & Sachet, 2011b.
			 **Fig. 19** Ring			

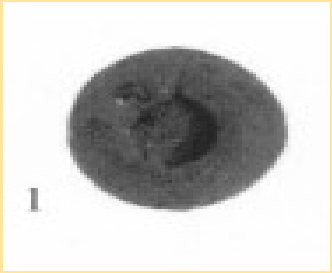
Signet ring	Not stated (possible non-burial)	Medina Selah	Ring	Copper alloy	An engraved signet ring (item 34531_M01). The engraving is too worn to be legible.	*Peillet, 2020.
						
Iron ring	Hegra, Tomb 117, Area B, Loculus 50238	Medina Selah	Ring	Iron	Found in situ on-level with the hand of skeleton 50238, a young woman between 20-30 years old.	Delhopital & Sachet, 2011a; *Delhopital & Sachet, 2011b.
 Fig. 22 Iron ring on the hand of individual 50238						

Ring	Hegra, Tomb 116.1, West Chest	Medina Selah	Ring	Iron and Agate	A bezeled ring (50533_S02) with an agate(?) stone. The ring is probably made of iron.	*Delhopital, 2015b.
						
Stone bezel ring	Hegra, Tomb 116.1, West Chest	Medina Selah	Ring	Stone, glass	An iron ring with an ovoid glass bezel. The glass bezel is convex on the top and flat where it attaches to the ring. It was worn on the right hand of the individual (skeleton 50555).	Nenna, 2020; *Delhopital, 2015b; Abu-Azizeh et al., 2020.
						

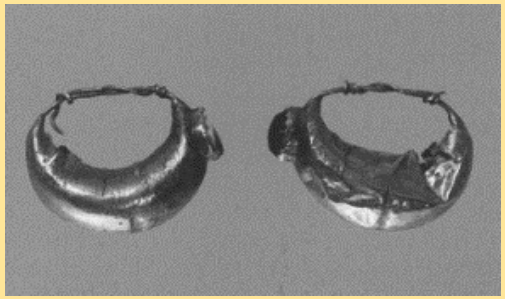
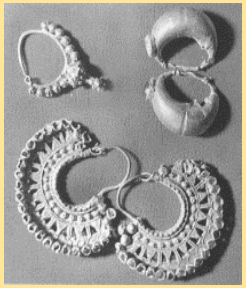
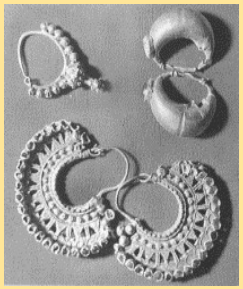
Ring	Monumental Tombs, Area 5A, Tomb IGN 117, Loculus 50283	Medina Selah	Ring		A ring found on the mummified hand - on the ring finger - of individual 50283_B01 (aged 15-20 years).	*Delhopital & Sachet, 2011a.
						
Ring	Monumental Tombs, Area 5, Tomb IGN 117	Medina Selah	Ring		Unclear if it was an earring or a nose-ring.	*Delhopital & Sachet, 2011a; Delhopital & Sachet, 2011b.
						

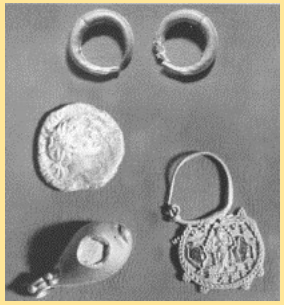
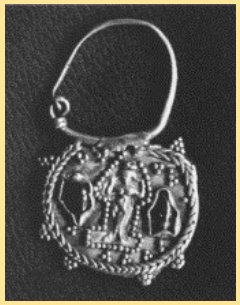
Pair of gold earrings	Hauran	Medina Selah (?)	Earring	Gold	"U-shaped ring, with attached bail caught in wire loop, is decorated with strings of granules. On plate: string of granules followed by row of beads, wire ridge, alternating triangles and bands of granules over string of 27 beads; seven-bead pyramid caps each end" (Goldman, 1996).	*Goldman, 1996.
						
Pair of gold earrings	Al A'l (Hauran)	Medina Selah (?)	Earring	Gold	"Granule-decorated ring has large plate composed of three broad ridges separated by two strings of small beads. Openwork beneath this section: row of 12 granulated triangles with pendant large beads alternating with bar ornamented with small bead at top end, larger one with granule at the bottom. Each end of plate has extra bead and is capped with pyramid of ten granule-decorated beads" (Goldman, 1996).	*Goldman, 1996.
						

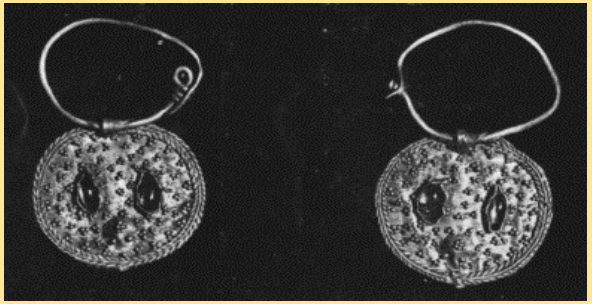
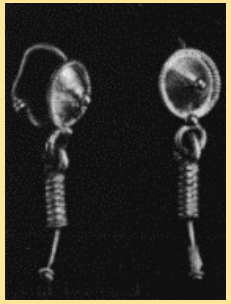
Pair of gold earrings	Al A'l (Hauran)	Medina Selah (?)	Earring	Gold	"U-shaped ring continues into bail hooked into loop wire catch. Narrow plate: decorated with granulation(?) between ridges, from which is suspended row of nine granulated triangles with pendant beads alternating with braided wire loops. Three-bead pyramid caps each end" (Goldman, 1996).	*Goldman, 1996.
 Fig. 10.						
Pair of gold earrings	Deir al-Hadjar (Hauran), Grave 1	Medina Selah (?)	Earring	Gold and Garnet	"Bail and wire catch affixed to tapered ring. On plate: string of small domes, panel of leaf-shaped darts between ridges, row of alternating granulated triangles and bands. Two ten-bead pyramids cap one end; single ten-bead pyramid and dove with granules, filigree and inset eyes on other end. On plate rim: 12 large beads with spacer beads; circumference, bead pyramids and bird framed with twisted wire extended into two rings on back and head of bird" (Goldman, 1996).	*Goldman, 1996.
 Fig. 2.						

Glass bead	Ein Tamar	Negev	Bead	Glass	The bead is heavily charred, though with traces of green, dark red, and yellow swirls in the glass.	*Erickson-Gini, 2016.
						
Beads	Khirbet Qazone	Negev	Bead	Unknown	No additional description provided.	Politis, 1998; Politis, 1999.
No Image Provided						

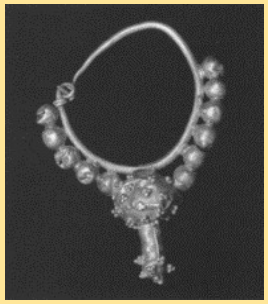
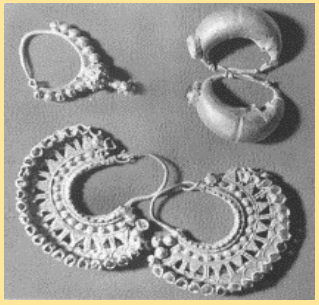
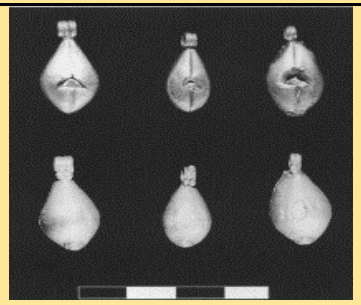
Bracelets	Khirbet Qazone	Negev	Bracelet	Unknown	No additional description provided.	Politis, 1998; Politis, 1999.
No Image Provided						
Bronze earring	Araq el-Emir, Cave Sounding IV.2.7	Negev	Earring	Bronze	No additional description provided.	Lapp, 1980.
No Image Provided						

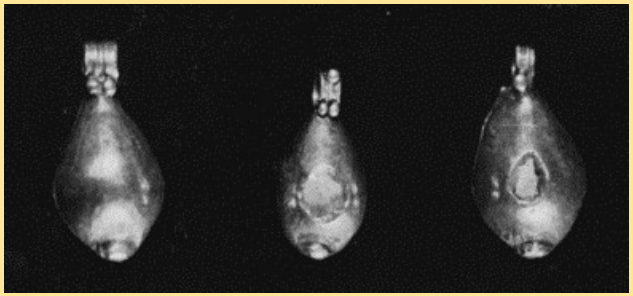
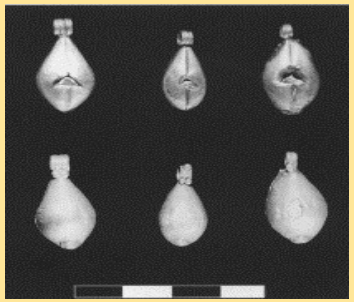
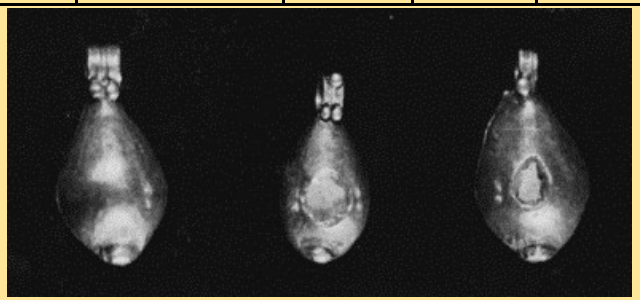
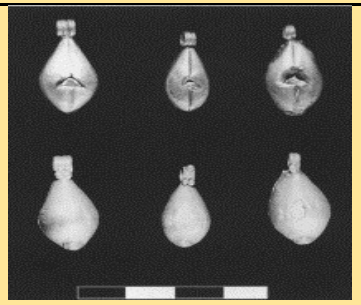
Earring pair	Mampsis, Tomb 119	Negev	Earring	Gold	Thick gold crescents with a thinner gold wire to go through the ear; a flatter full circle is attached to one side of the crescent in both cases.	*Rosenthal-Heginbottom, 2015.
						
Earring pair	Mampsis, Tomb 119	Negev	Earring	Gold	"Horseshoe-shaped ring carries granular clusters, bail caught in wire loop collar. On plate: string of granules above row of bosses with granule clusters, ridge, another string of granules. Plate cut into openwork between alternating granulated triangles and bands; raised semi-circles link string of 21 (now crushed) domes. Remnants of bead pyramid cap each end" (Goldman, 1996).	*Rosenthal-Heginbottom, 2015; ***Goldman, 1996.
					 Fig. 8.	

Earring pair	Mampsis, Tomb 100	Negev	Earring	Gold	Thick gold crescents tapering into a thinner wire which would have gone through the earlobe.	*Rosenthal-Heginbottom, 2015.
					 	
Single earring	Mampsis, Tomb 100	Negev	Earring	Gold	Disc-shaped earring made of gold. Braided/leaf design around the exterior with some grape clusters. Inside is a nude female figure (Alat-Aphrodite or Al-Uzza) with upraised hands and surrounded by gold granules/balls and other designs.	*/**Rosenthal-Heginbottom, 2015; Negev, 1971; ***Almasri et al., 2012; Patrich, 1984.
					  	

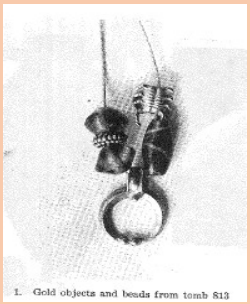
Earring pair	Mampsis, Tomb 112	Negev	Earring	Gold	Gold wire loops with matching pendants fixed to each. The exterior of each pendant has a braided/leaf design encircling, and the interior has two oblong settings for other stones as well as a raised area to suggest a nose or mouth. Decorated with bunches of granulation.	*Almasri et al., 2012; **Negev, 1971; Patrich, 1984.
						
Earring pair	Mampsis, Tomb 100	Negev	Earring	Gold	Two gold shield-and-pendant style earrings. The convex shields are shaped into a shallow cone, with a single granule at the tip of the protrusion, and a decorative, textured border around the outer circumference. A hoop at the base of the shield is used to suspend a gold coil that then has decorative wire hanging from it.	*Negev, 1971; Rosenthal-Heginbottom, 2016.
						

Iron, copper, silver, gold earrings	Khirbet Qazone	Negev	Earring	Iron, copper, silver, gold	No additional description provided.	Politis, 1998; Politis, 1999.
No Image Provided						
Gold nose ring	Avdat (Oboda)	Negev	Nose ring	Gold	"…made of a wire bent into a circle and tapered towards its ends. One of the ends is turned into a loop, into which the other end can be inserted, thus forming the closure. Soldered to the lower part of the ring is a row of balls, consisting of a large central sphere with six smaller ones on either side. The spheres and the central ball are decorated with clusters of granulated gold. Additional decorative elements, consisting of a bead spacer and another ball with clusters of granulated gold at the end, are attached to the central ball" (Rosenthal, 1974).	*Rosenthal, 1974; Almasri et al., 2012.
						

One nose ring	Mampsis, Tomb 119	Negev	Nose ring	Gold	A single half-circle nose ring made of thin gold wire. There is a loop on one end to secure the wire through the ear. The bottom of the ring has a row of gold balls, and at the center hangs a larger gold ball with additional embellishments	*Rosenthal-Heginbottom, 2015; Almasari et al., 2012.
					 	
Gold pendant	Mampsis, Tomb 121	Negev	Pendant	Gold	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	*Negev, 1971; **Rosenthal-Heginbottom, 2015.
					 	

Gold pendant	Mampsis, Tomb 100	Negev	Pendant	Gold	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	*Negev, 1971; **Rosenthal-Heginbottom, 2015.
 						
Gold pendant	Mampsis, Tomb 118	Negev	Pendant	Gold	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	*Negev, 1971; **Rosenthal-Heginbottom, 2015.
 						

Scarab	Khirbet Qazone	Negev	Pendant	Unknown	No additional description provided.	Politis, 1998; Politis, 1999.
No Image Provided						
Wreath	Khirbet Qazone	Negev	Wreath	Unknown	No additional description provided.	Politis, 1998; Politis, 1999.
No Image Provided						

Scorpion amulet	Siq (Tomb 813), Burial Niche 6	Petra	Amulet	Gold	An elite burial.	Gourley & Johnson, 2020; *Zayadine, 1974.
				 1. Gold objects and beads from tomb 813		
Crescent moon amulet	Siq (Tomb 813), Burial Niche 6	Petra	Amulet	Gold	An elite burial.	Gourley & Johnson, 2020; *Zayadine, 1974.
				 1. Gold objects and beads from tomb 813		

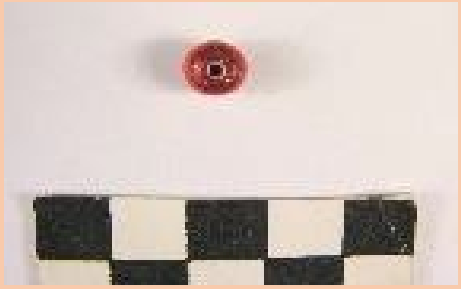
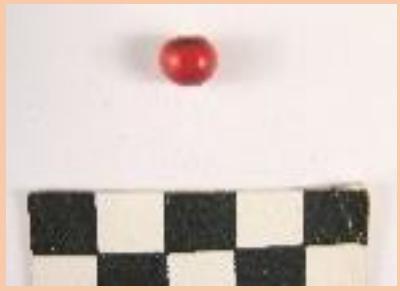
Agate bead	Siq (Tomb 813), Burial Niche 6	Petra	Bead	Agate	An elite burial.	Gourley & Johnson, 2020; *Zayadine, 1974.
				 1. Gold objects and beads from tomb 813		
Agate bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Agate	A long barrel, centrally-pierced agate bead. It is a translucent, pale yellow stone, with a thin opaque white stripe followed by a brown stone stripe. RI 7.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Agate bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Agate	A flattened ovoid agate bead that is centrally pierced. It is a cloudy, pale amber color, with an opaque white stripe through the center. RI 8.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Agate bead	Wadi Mataha, Loculus 14A, SU 1	Petra	Bead	Agate	A banded agate bead, centrally drilled. RI #12.	*Johnson, 2007 (Unpublished).
						

Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Amethyst	Trapezoidal, light purple amethyst bead, that is pierced through the narrow side of the trapezoid. RI 9.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Amethyst	An amethyst bead in the shape of a thin trapezoid. It has shades of both light and deep purple; the hole if off-center. RI 11.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Amethyst	A trapezoid amethyst bead, of a transparent lavendar color. There is an oval chip on one side. The bead is pierced through the short side of the trapezoid. RI 18.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Amethyst bead	Wadi Mataha, Site 6A	Petra	Bead	Amethyst	A small biconic amethyst bead, with a hole drilled from one side. RI #159.	*Johnson, 2005 (Unpublished).
						

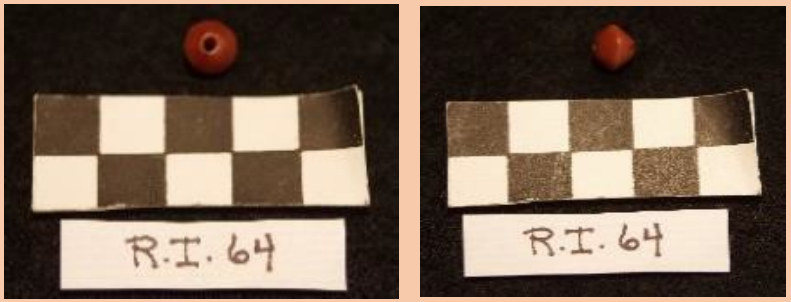
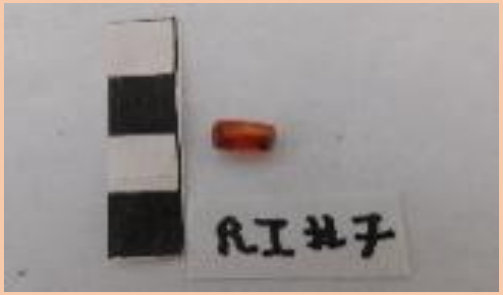
Amethyst (?) bead	Wadi Mataha	Petra	Bead	Amethyst	A biconical bead made of marbled purple and clear material. RI #9.	*Johnson, 2001 (Unpublished).
						
Bone bead	Wadi Mataha, SU 3, Loculus 15L14	Petra	Bead	Bone	A circular bone bead, broken in half. The back of the bead is flat and the front is rounded. RI 24.	Johnson, "Gold Jewelry," n.d.
No Image Provided						

2 carnelian beads	Siq (Tomb 813), Burial Niche 6	Petra	Bead	Carnelian	An elite burial.	Gourley & Johnson, 2020; *Zayadine, 1974.
				 1. Gold objects and beads from tomb 813		
Carnelian bead	Wadi Mataha, SU 1, Loculus 16B	Petra	Bead	Carnelian	An oval carnelian bead, centrally pierced.	*Johnson, 2008 (Unpublished).
				 		

Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Carnelian	Discoid, brownish-red carnelian bead. One side is smooth and uniform, the other has three large imperfections. It is pierced through the wide area of the bead. RI 10.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Carnelian	A flattened circular bead made of carnelian. It is a transparent red-orange color with a centrally pierced hold. RI 12.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Carnelian	An ovoid carnelian bead, centrally pierced through the long axis. It is a light coral/peach color with darker red streaks. It has incised lines and is centrally pierced. RI 17.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Carnelian	A small round carnelian bead of a deep, orange-red color, with an off-center hole. RI 19.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Carnelian bead	Wadi Mataha, Site 15, SU4 (RI4)	Petra	Bead	Carnelian	No additional description provided.	Johnson & Anderson, 2020.
No Image Provided						
Carnelian bead	Wadi Mataha, Site 10D	Petra	Bead	Carnelian	One small, circular carnelian bead. RI #89.	*Johnson, 2005 (Unpublished).
						

Carnelian bead	Wadi Mataha, Site 6	Petra	Bead	Carnelian	A biconic carnelian bead that is polished on a depression around both ends of the hole. RI #64.	*Johnson, 2004 (Unpublished).
						
Carnelian bead	Wadi Mataha 15L16	Petra	Bead	Carnelian	A cylindrical carnelian bead. It is a red-orange transclucent color and is pierced along the central axis.	*Johnson, 2021 (Unpublished).
						

Beads	ath-Thughrah, Tomb Th303	Petra	Bead	Emerald, amethyst, chalcedony	14 beads of various materials.	*Gueli et al., 2010; **Sachet et al., 2013.
Blue frit bead	Wadi Mataha	Petra	Bead	Frit (glass?)	Dark green, square in cross section, centrally pierced rectangular hole.	Johnson, 2021 (Unpublished).
No Image Provided						

Blue frit bead	Wadi Mataha	Petra	Bead	Frit (glass?)	Blue green, oval in cross section, centrally pierced, oval hole.	Johnson, 2021 (Unpublished).
No Image Provided						
White glass bead	Wadi Mataha, Loculus 14D	Petra	Bead	Glass	Oval bead made of white glass.	*Johnson, 2008 (Unpublished).
 						

Glass beads (20/21)	Wadi Mataha, Bedrock, Loculus 16H	Petra	Bead	Glass	14 are complete, 7 fragmentary.	*Johnson, 2008 (Unpublished).
						
Small bead	Wadi Mataha, Loculus 15L1	Petra	Bead	Glass	One yellow glass bead.	*Johnson, 2011 (Unpublished).
No Image Provided						

Green beads	Wadi Abu Khasharif, Pit 9	Petra	Bead	Not stated	"Grave goods were discovered in this burial including small green beads and fragments of string that held them together. Near the legs, larger bead pieces were found."	*al-Salameen & Falahat, 2009; Perry et al., 2007.
						
Bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	Bead	Shell	A small circular shell bead; the side view is conical in shape. The shell is turbidae. RI 21.	Johnson, "Gold Jewelry," n.d.
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Shell bead	Wadi Mataha, SU NP, Loculus 15	Petra	Bead	Shell	A cowrie shell with a small hole in the back, used as a bead. RI 22.	Johnson, "Gold Jewelry," n.d.
No Image Provided						
Two shell beads	Wadi Mataha, Chamber 15L4	Petra	Bead	Shell	No additional description provided.	Johnson, 2018.
No Image Provided						

Flat shell beads	Wadi Mataha, Site 6B	Petra	Bead	Shell	3 round, flat shell beads. Two are in good condition but one is only fragmentary. RI #85.	*Johnson, 2005 (Unpublished).
						
Flat shell beads	Wadi Mataha, Site 6B	Petra	Bead	Shell	A center cut flat shell bead and two fragments. RI #86.	*Johnson, 2005 (Unpublished).
						

Flat shell beads	Wadi Mataha, Site 6A	Petra	Bead	Shell	Two flat, round shell beads. RI #88.	*Johnson, 2005 (Unpublished).
						
Small bead	Wadi Mataha, Loculus 15L1	Petra	Bead	Shell	One shell bead, turbo.	Johnson, 2011 (Unpublished).
No Image Provided						

Small bead	Wadi Mataha, Loculus 15L1	Petra	Bead	Shell	A center drilled, flat shell bead.	Johnson, 2011 (Unpublished).
No Image Provided						
Shell bead	Wadi Mataha, Loculus 15T	Petra	Bead	Shell	A centrally pierced shell bead with one large hole near the base and a second, smaller hole near the point. The surface was removed to create a spiral design. The shell is Gastropoda Tectus dentatus.	Johnson, 2021 (Unpublished).
No Image Provided						

Shell bead	Wadi Mataha, Loculus 15T	Petra	Bead	Shell	A laterally pierced shell bead. The shell is Gastropoda engina mendiurum.	Johnson, 2021 (Unpublished).
No Image Provided						
Stone bead	Wadi Mataha, SU 2, Loculus 16E	Petra	Bead	Stone	Oval stone bead.	*Johnson, 2008 (Unpublished).
						

Stone bead, painted	Wadi Mataha, Site 6B	Petra	Bead	Stone	One half of a stone bead that has been painted with a white face. RI #87.	*Johnson, 2005 (Unpublished).
						
Stone bead	Wadi Mataha, Site 6a	Petra	Bead	Stone	An oval bead made of dark green stone with striations on the side. RI #134.	Johnson, 2004 (Unpublished).
No Image Provided						

Stone bead	Wadi Mataha, Site 6a	Petra	Bead	Stone	A yellow citrine quartz bead in the shape of a flat oval ring. RI #135.	Johnson, 2004 (Unpublished).
No Image Provided						
White painted stone bead	Wadi Mataha, Loculus 15T	Petra	Bead	Stone	A round, centrally pierced stone bead made of white stone with black and red inclusions. It is carved and polished to look like Harpocrates; the figure has red eyes, a black mouth, and a black hair piece.	Johnson, 2021 (Unpublished).
No Image Provided						

13 beads	North Ridge	Petra	Bead	Various	No additional description provided.	*Perry & Walker, 2018.
						
Wooden bead	Wad Mataha, SU 2e, Loculus 16G	Petra	Bead	Wood	Wooden bead.	*Johnson, 2008 (Unpublished).
						

Wooden bead	Wadi Mataha, SU 1, Loculus 16H	Petra	Bead	Wood	Wooden bead.	*Johnson, 2008 (Unpublished).
					 	
Figurine bead	Wadi Mataha	Petra	Bead	Wood	A brown/sepia colored bead, possibly made of wood, in the shape of a face/figurine.	*Johnson, 2001 (Unpublished).
					 	

Bronze bells	ath-Thughrah, Tomb Th303	Petra	Bell	Bronze	No additional description provided.	Sachet et al., 2013.
No Image Provided						
Bone bracelet	Wadi Abu Khasharif, Pit 9	Petra	Bracelet	Bone	"Additionally fragment [sic] of decorated bone bracelet and metal wire about 3 cm long, probably used as a bracelet were found" (al-Salameen & Falahat, 2009).	al-Salameen & Falahat, 2009; Perry et al., 2007.
No Image Provided						

Copper wire bracelet	Petra	Petra	Bracelet	Copper	No additional description provided.	Horsfield, 1938.
No Image Provided						
Copper alloy bracelet	North Ridge, Tomb B.4 or B.5	Petra	Bracelet	Copper	Found mostly in upper stratum. Four fragments; seems to be a plain circular bracelet.	Perry, 2016; *Perry, 2017; Perry & Walker, 2018.
						

2 copper bracelets	Khirbet edh-Dharih	Petra	Bracelet	Copper	No additional description provided.	*Almasri et al., 2012.
						
Copper bracelet	Khirbet edh-Dharih	Petra	Bracelet	Copper	No additional description provided.	*Almasri et al., 2012.
						

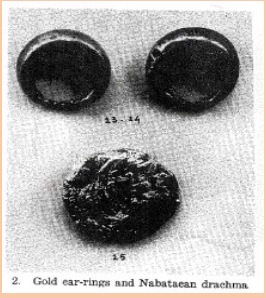
2 copper bracelets	Khirbet edh-Dharih	Petra	Bracelet	Copper	Terminal decorated with palm leaf on one, star shape on other.	*Almasri et al., 2012.
						
Glass bracelet	Wadi Mataha, Loculus 15L7	Petra	Bracelet	Glass	An orange and green glass bracelet, fragmented into four pieces.	Corbett et al., 2014; Johnson et al., 2017.
No Image Provided						

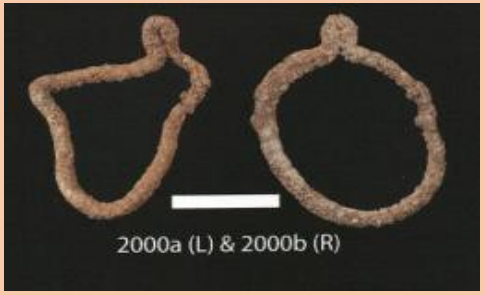
2 gold bracelets	Khirbet edh-Dharih	Petra	Bracelet	Gold	No additional description provided.	*Almasri et al., 2012.
						
Bronze earring	Wadi Mataha, SU 3a, Loculus 15B	Petra	Earring	Bronze	A circular bronze earring.	*Johnson, 2008 (Unpublished).
						

Bronze earring	Wadi Mataha, SU 3, Loculus 16L	Petra	Earring	Bronze	A bronze twisted earring.	*Johnson, 2008 (Unpublished).
						
Copper earring	Khirbet edh-Dharih	Petra	Earring	Copper and shell	"Copper earring with seashell stone."	*Almasri et al., 2012.
						

Gold earring pair	Wadi Mataha, SU 6, Loculus 15L12	Petra	Earring	Gold	A pair of circular gold flower earrings. They have an oblong red stone (probably carnelian) in the center with six heart-shaped hollow petals around it. On each earring, one petal is filled with a light brown stone. The outer rim of each earring is decorated with a row of granulation.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Gold bird earring	Khirbet edh-Dharih, Tomb C1	Petra	Earring	Gold	A gold pendant earring of a bird emerging from a pyxis bottle.	*Almasri et al., 2012; Lenoble et al., 2001.
						

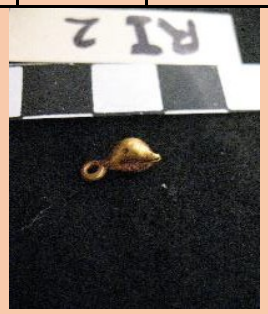
Single earring	Tomb Br. 781, Loculus 8	Petra	Earring	Gold	A gold earring. The main part of the earring is made of three discs stacked on each other into a triangle. There is a bar at the base of this triangle from which hang three dangling gold bead-like decorations.	*Wadeson, 2014.
						
Gold earring	al-Khubthah, Tomb BD781, Loculus 8	Petra	Earring	Gold	No additional description provided.	Corbett et al., 2014.
No Image Provided						

Pair of gold earrings	Wadi Mataha, Loculus 15L15	Petra	Earring	Gold	A pair of gold hoop earrings. Each is made with a single piece of wire that is thicker at the center and tapers at the top where the ends meet. The center of each hoop is decorated with two pressed vertical lines.	*Johnson et al., 2017.
						
Earring pair	Siq (Area B, Loculus 21)	Petra	Earring	Gold	"The gold crescent shaped ear-rings…are a common type in the Nabataean world as proved by the finds of Mampsis."	*Zayadine, 1974.
 2. Gold ear-rings and Nabataean drachma						

Pair of gold earrings	North Ridge	Petra	Earring	Gold	No additional description provided.	*Perry & Walker, 2018.
						
Earring pair	North Ridge	Petra	Earring	Not Stated	No additional description provided.	*Perry & Walker, 2018.
						

Bronze medallion	Wadi Mataha, SU 4, Loculus 16D	Petra	Medallion	Bronze	"Bronze medallion in lunate shape with etched figure of god with hairlock in gold leaf."	*Johnson, 2008 (Unpublished).
						
Gold nose ring	North Ridge	Petra	Nose ring	Gold	No additional description provided.	Perry, 2017.
No Image Provided						

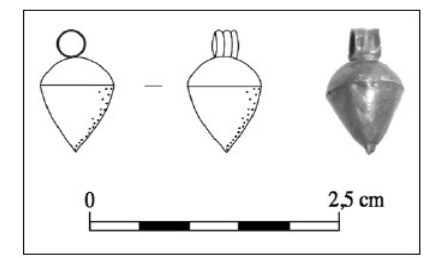
Bronze pendant	Wadi Mataha 15T	Petra	Pendant	Bronze	A leaf-shaped bronze pendant made of thin metal with a twisted clasp.	Johnson, 2021 (Unpublished).
No Image Provided						
Gold Earring or Pendant	Wadi Mataha, Site 6A	Petra	Pendant	Gold	"Crescent-shaped with beaded ring in center. Tiny beading circles entire circumference of ring. Two identical loops (4.7 mm diam) are located at each side. Ends of crescent are twisted wires." RI 128	Johnson, "Gold Jewelry," n.d.; *Johnson, 2005 (Unpublished).
						

Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A yellow-gold pendant in the shape of a cowrie shell. It has a gold loop on one end and a gold coil on the other, with a small hole on one side. RI 1.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A small yellow-gold pendant that is bulbous on one side and flat on the other, with a loop on the top. The flat side has a crease and a large hole creating a face of Harpocrates. RI 2.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A circular gold wheel pendant. It has 8 granulated spokes radiating from a central point. The loop at the top of the pendant is decorated with a gold ball, and the bottommost spoke has 2 large gold balls on either side of its base. RI 3.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
					 	
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A rectangular reddish-gold pendant with a falcon design. It is made of a flat gold sheet with four gold balls, one at each corner, and a double loop made of gold on the top. The falcon design is raised from the back and depicts a falcon standing on a branch with a small face and horns facing down and to the right. RI 4.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
					 	

Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A circular gold wheel pendant with 8 granulated spokes and a large gold ball at the center where they meet. The loop also is decorated with a single gold granule. RI 13.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A stone pendant. The brown oblong stone (chert) is encircled by gold wire that has been shaped to look like braiding. The stone is flat on one side and there is a gold loop attached at its narrowest end. RI 14.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						

Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A circular gold wheel pendant with 8 granulated spokes and a large gold ball at the center where they meet. The loop also is decorated with a single gold granule. RI 15.	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
						
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	Pendant	Gold	A gold rectangular pendant with a scorpion design. It is made of a flat gold sheet with four gold balls, one at each corner, and a gold loop at the top. The scorpion is at a three-quarter angle with its tail arching from right to left; its segmented body has three long legs to the left and two short legs to the right. RI 16 (photo mislabeled).	Johnson, "Gold Jewelry," n.d.; *Johnson, 2014 (Unpublished).
			 			

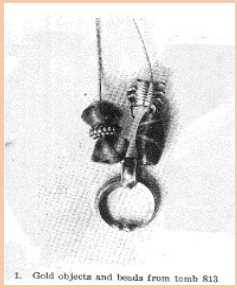
Gold pendant	ath-Thughrah, Tomb Th303	Petra	Pendant	Gold	No additional description provided.	*Sachet et al., 2013.
					 10. Gold pendant (I. Sachet).	
Gold pendant with agate	North Ridge, Tomb B.4 or B.5	Petra	Pendant	Gold, Agate	A teardrop-shaped pendant made of multiple rings/rows of gold balls, twisted gold wire designs (about 3 layers). The top and bottom of the pendant both have gold loops attached, and in the center is set a polished agate.	Perry, 2016; *Perry, 2017.
						

White stone pendant	North Ridge	Petra	Pendant	Gold, Stone	No additional description provided.	*Perry & Walker, 2018.
						
Harpocrates pendant	Wadi Mataha, Site 6	Petra	Pendant	Hard sandstone	A sandstone Harpocrates pendant with a hole at the top. The front depicts an oval head with a hairlock and an arm coming up from the left side into the mouth. The figure is bowlegged on a stand. The back has small holes as a design. RI 15.	Johnson, 2004 (Unpublished).
No Image Provided						

Wire pendant with white bead	North Ridge	Petra	Pendant	Not Stated	No additional description provided.	*Perry & Walker, 2018.
						
Silver amulet	Wadi Mataha, Chamber 15L4	Petra	Pendant	Silver	No additional description provided.	Johnson, 2018.
No Image Provided						

Bone hair pins	North Ridge, Tomb B.4 or B.5	Petra	Pin	Bone	Possibly also a kuhul (kohl) stick. Broken in half before conservation. The thicker side has a rounded end with three shallow grooves carved under it	Perry, 2016; *Perry, 2017.
						
Bronze pin	Wadi Mataha, SU 2, Loculus 16B	Petra	Pin	Bronze	The top of a bronze pin.	*Johnson, 2008 (Unpublished).
						

Bronze pin	Wadi Mataha, Site 6a	Petra	Pin	Bronze	A small bronze pin with a long shaft, with a possible Harpocrates image on one end. RI 150.	Johnson, 2004 (Unpublished).
No Image Provided						
Bone ring	Petra	Petra	Ring	Bone	No additional description provided.	Horsfield, 1938.
No Image Provided						

Garnet ring	Khirbet edh-Dharih	Petra	Ring	Garnet	A garnet, used as a ring bezel, carved to depict a winged victory goddess.	*Almasri et al., 2012.
						
Finger-ring	Siq (Tomb 813), Burial Niche 6	Petra	Ring	Gold	An elite burial.	Gourley & Johnson, 2020; *Zayadine, 1974.
						

Iron ring	Wadi Mataha, SU 2, Loculus 16E	Petra	Ring	Iron	A corroded iron ring with a break in the circle at the back. It has a flat bezeled front.	*Johnson, 2008 (Unpublished).
						
Portions of two rings	North Ridge	Petra	Ring	Unknown	Found mostly in the upper stratum.	*Perry & Walker, 2018.
				 		

Worked turquoise	Wadi Mataha, Site 15, SU4	Petra	Unknown	Turquoise	RI 15.	Johnson & Anderson, 2020.
No Image Provided						
Ring (x2)	Dumat al-Jandal	Petra (?)	Ring	Gold	No additional description provided.	Charloux et al., 2014.
No Image Provided						

Appendix B

This appendix shows the full breadth of data which was collected for the various jewelry pieces in this dataset, with some grouping for convenience. The graphs in Chapter 2 (Figures 9 & 10) and Chapter 4 (Figures 23 & 24) were generated by separating out individual pieces of information. For example, the first entry here – "32 miniature glass beads" – was divided into 32 individual entries to account for each bead separately. This allowed for a more statistically viable output. The "Material" section of data was also divided into primary and secondary materials to facilitate the statistical approach. Not every object has a secondary material, but those which do may be more easily tracked.

However, for a more visually accessible experience, the data here has been condensed into its original groupings.

Object	Location/Site	Region	Date of Origin	Jewelry Type	Material	Notable Imagery	Size	Shape	Date of Excavation	Gender of remains	Description	Publication
32 miniature glass beads	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah	First century CE	Bead	Glass				2014	Juvenile	50405_G01. Glass beads, likely part of bracelet or necklace, found at the feet of the skeleton. 7 dark blue cylindrical beads; 5 dark blue spherical beads with white thread in the middle and marvered; 2 spherical beads made from dark blue and white thread, stretched and cut; 14 spherical beads in weathered light green glass; 1 cylindrical bead in weathered white glass; 3 coffee bean beads in weathered glass.	Abu-Azizeh et al., 2020; Delhopital, 2015b; Nenna, 2020.
8 glass beads	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah		Bead	Glass				2015	Juvenile(?)	Additional beads found in 2015 when screening collected sediment from SF9. 2 of the 8 have stripes which the others do not.	Delhopital, 2015b.
Mosaic bead	Hegra, Tomb 117	Medina Selah	First century CE	Bead	Glass				2008-2011	Not stated	Bead 50089_G01. Checkerboard pattern. Found in sand filling of the tomb below surface layer.	Nenna, 2020.
Shell beads	Cairn F19, Loculus 42005 and Loculus 42008	Medina Selah		Bead	Shell				2014	Not stated	Found during excavation of the destruction layer of the cairn. Beads made mostly of large pierced conus shells, some of which showed traces of polishing or smoothing from string passing through the hole.	Abu-Azizeh, 2015; Studer, 2015.
Shell beads	Cairn F19, Loculus 42012, 42014, and 42022	Medina Selah		Bead	Shell				2014	Not stated	Conus shell beads. Found in compartments (burials) in the wall of the structure.	Abu-Azizeh, 2015; Studer, 2015.
Twisted bronze bracelet	Tomb IGN 103, Grave SF9, Loculus 50405	Medina Selah	1-3 century CE	Bracelet	Bronze				2014	Juvenile	Found near the left arm of the skeleton.	Delhopital, 2015a; Nenna, 2020.
Earring pair	Qasrawet, Tomb 2	Medina Selah		Earring	Gold	Pyramid Grapes	3.2cm H, 4.7gm		1912	Not stated	Pair of hoop earrings with a fixed pendant in the shape of an inverted pyramid. Its upper side is a flat trinagular plate soldered to the hoop. The body is formed with three other triangular plates which are decorated with granulation. The tip of the pyramid is finished with three granules soldered together in a vertical row.	Rosenthal, 2015.
Single earring	Qasrawet, Tomb 2	Medina Selah		Earring	Gold	Grapes	2.2cm H, 1.8cm W			Not stated	A single hoop earring with a fixed pendant. It is of the navicella type, made with the beating over a core method. The gold foil has several holes and cracks. The ends of the hops are flattened and spiralled around the wire. The pendant is made of five granules soldered together to form a bunch of grapes.	Rosenthal, 2015.

Single earring	Qasrawet, Tomb 2	Medina Selah		Earring	Gold	Grapes, rosette	4.8cm H, 1.9cm W	Shield and pendant		Not stated	A single shield-and-pendant type earring. It is made of a convex shield at the top, below which is attached a fixed inverted-triangle pendant made up of many smaller circles, not dissimilar to a bunch of grapes. The center of the shield has a star-shaped rosette: a red stone set in a bezel, with five (originally six) granulated rays surrounding it. The shield is encircled with granulation and granulation surrounds the lowest circle of the pendant as well.	Rosenthal, 2015.
Earring pair	Qasrawet, Tomb 1	Medina Selah		Earring	Gold	Animal head				Not stated	A pair of earrings with lion's head finials from Tomb 1.	Rosenthal, 2015.
Pair of gold earrings	Hauran	Medina Selah		Earring	Gold		3.3cm height, 3.2cm wide	Lunate		Not stated	"U-shaped ring, with attached bail caught in wire loop, is decorated with strings of granules. On plate: string of granules followed by row of beads, wire ridge, alternating triangles and bands of granules over string of 27 beads; seven-bead pyramid caps each end" (Goldman, 1996).	Goldman, 1996.
Pair of gold earrings	Al A'l (Hauran)	Medina Selah		Earring	Gold		Unknown	Lunate		Not stated	"Granule-decorated ring has large plate composed of three broad ridges separated by two strings of small beads. Openwork beneath this section: row of 12 granulated triangles with pendant large beads alternating with bar ornamented with small bead at top end, larger one with granule at the bottom. Each end of plate has extra bead and is capped with pyramid of ten granule-decorated beads" (Goldman, 1996).	Goldman, 1996.
Pair of gold earrings	Al A'l (Hauran)	Medina Selah		Earring	Gold		3.0cm height, 2.8cm wide	Lunate		Not stated	"U-shaped ring continues into bail hooked into loop wire catch. Narrow plate: decorated with granulation(?) between ridges, from which is suspended row of nine granulated triangles with pendant beads alternating with braided wire loops. Three-bead pyramid caps each end" (Goldman, 1996).	Goldman, 1996.
Pair of gold earrings	Deir al-Hadjar (Hauran), Grave 1	Medina Selah		Earring	Gold and Garnet		4.7cm height, 6.1cm wide	Lunate		Not stated	"Bail and wire catch affixed to tapered ring. On plate: string of small domes, panel of leaf-shaped darts between ridges, row of alternating granulated triangles and bands. Two ten-bead pyramids cap one end; single ten-bead pyramid and dove with granules, filigree and inset eyes on other end. On plate rim: 12 large beads with spacer beads; circumference, bead pyramids and bird framed with twisted wire extended into two rings on back and head of bird" (Goldman, 1996).	Goldman, 1996.

Single earring	Qasrawet, Tomb 2	Medina Selah		Earring	Gold and glass paste		3.5cm H, 1.9cm W	Baretta		Not stated	A single baretta-type earring. It's made with a blue glass paste bead set in a bezel at the top, underneath which a square gold pendant is attached. The ratio between bezel and pendant is roughly 1:3. The pendant consists of two bars with gold wire filigree between them; granulation decorates throughout. Below the lower bar of the pendant there is a row of three large globules, each with granule clusters at their base.	Rosenthal, 2015.
Single earring	Qasrawet, Tomb 2	Medina Selah		Earring	Gold and oynx	Animal head	2.5cm L - stone with bezel			Not stated	A single earring with a broken animal-head finial attached to the earring body with a doubled wire. The body is made of a barrel-shaped piece of onyx between two wire-decorated gold caps, from which the gold wire hoop/hook emerges. The animal head was originally attached to one of the gold caps around the onyx; the animal cannot be clearly identified, but 'dolphin' is a possibility.	Rosenthal, 2015.
Bes pendant	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Necklace	Faience	Bes			2014	Multiple	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 2 faience pendants in the form of the god Bes. The faience is blue-green with yellow spots.	Abu-Azizeh, et al., 2020; Nenna, 2020; Delhopital, 2015b.
14 glass beads	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Necklace	Glass				2014	Multiple	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 14 glass beads (50533_G01-G02): 5 biconical black glass; 3 spherical black glass; 1 spherical black glass; 1 spherical black glass with white thread in the middle; 3 cylindrical black glass; 2 mosaic glass of white, light green, yellow, deep blue, red, stretched and twisted; fragments of mosaic glass of white, light green, yellow, deep blue, red; body fragment of brown glass with one incised line.	Abu-Azizeh, et al., 2020; Nenna, 2020; Delhopital, 2015b.
Flower bead	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Necklace	Glass	Flower			2014	Multiple	From a find of over twenty-four glass and stone beads, representing one or more necklaces: one half of a flower-shaped bead made from colorless glass (50533_G03).	Abu-Azizeh, et al., 2020; Nenna, 2020; Delhopital, 2015b.
Date necklace	Tomb IGN 117	Medina Selah	0-100 CE	Necklace	Organic		15-17mm long, 8-10mm wide, 2 mm diameter hole			Multiple	Pierced dates strung together with plant matter (date-palm leaflets), found encased in leather and fabric.	Bouchaud et al., 2015.

Seed necklace	Tomb IGN 88	Medina Selah		Necklace	Organic				2014		A necklace fragment made of four seeds strung together on a thread (50420_V01). It was found encased in resin which had also preserved the impression of a textile weft.	Delhopital, 2015.
5 stone beads	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Necklace	Stone				2014	Multiple	From a find of over twenty-four glass and stone beads, representing one or more necklaces: 4 spherical carnelian, 1 cylindrical agate bead.	Abu-Azizeh, et al., 2020; Nenna, 2020; Delhopital, 2015b.
Pendant	Not stated (possible non-burial)	Medina Selah		Pendant	Copper alloy				2019		Attached to an iron ring, possibly part of a necklace or earring. Item 34509_M01.	Peillet, 2020.
Bronze ring	Hegra, Tomb 117, Loculus 50223	Medina Selah	70-100 CE	Ring	Bronze				2009		No additional description provided.	Delhopital & Sachet, 2011b.
Signet ring	Not stated (possible non-burial)	Medina Selah		Ring	Copper alloy				2019		An engraved signet ring (item 34531_M01). The engraving is too worn to be legible.	Peillet, 2020.
Iron ring	Hegra, Tomb 117, Loculus 50238	Medina Selah	70-100 CE	Ring	Iron				2009		Found in situ on-level with the hand of skeleton 50238, a young woman between 20-30 years old.	Delhopital & Sachet, 2011a; Delhopital & Sachet, 2011b.
Ring	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Ring	Iron and Agate				2014	Multiple	A bezeled ring (50533_S02) with an agate(?) stone. The ring is probably made of iron.	Delhopital, 2015b.
Stone bezel ring	Hegra, Tomb 116.1, West Chest	Medina Selah	First century CE	Ring	Stone, glass				2014	Multiple	An iron ring with an ovoid glass bezel. The glass bezel is convex on the top and flat where it attaches to the ring. It was worn on the right hand of the individual (skeleton 50555).	Nenna, 2020; Delhopital, 2015b; Abu-Azizeh et al., 2020.
Ring	Monumental Tombs, Area 5, Tomb IGN 117	Medina Selah	1st century CE	Ring					2011	Female(?)	A ring found on the mummified hand - on the ring finger - of individual 50283_B01 (aged 15-20 years).	Delhopital & Sachet, 2011a.
Ring	Monumental Tombs, Area 5, Tomb IGN 117	Medina Selah	1st century CE	Ring					2011	Female	Unclear if it was an earring or a nose-ring.	Delhopital & Sachet, 2011a; Delhopital & Sachet, 2011b.
Glass bead	Ein Tamar	Negev		Bead	Glass				December 2006		The bead is heavily charred, though with traces of green, dark red, and yellow swirls in the glass.	Erickson-Gini, 2016.
Beads	Khirbet Qazone	Negev		Bead	Unknown				1996-1997		No additional description provided.	Politis, 1998; Politis, 1999.
Bracelets	Khirbet Qazone	Negev		Bracelet	Unknown				1996-1997		No additional description provided.	Politis, 1998; Politis, 1999.
Bronze earring	Araq el-Emir, Cave Sounding IV.2.7	Negev		Earring	Bronze				1961-1962		No additional description provided.	Lapp, 1980.

Earring pair	Mampsis, Tomb 119	Negev		Earring	Gold			Lunate	1971	Female	Thick gold crescents with a thinner gold wire to go through the ear; a flatter full circle is attached to one side of the crescent in both cases.	Rosenthal, 2015.
Earring pair	Mampsis, Tomb 119	Negev		Earring	Gold		4.4 cm wide	Lunate	1971	Female	"Horseshoe-shaped ring carries granular clusters, bail caught in wire loop collar. On plate: string of granules above row of bosses with granule clusters, ridge, another string of granules. Plate cut into openwork between alternating granulated triangles and bands; raised semi-circles link string of 21 (now crushed) domes. Remnants of bead pyramid cap each end" (Goldman, 1996).	Rosenthal, 2015; Goldman, 1996.
Earring pair	Mampsis, Tomb 100	Negev		Earring	Gold			Lunate	1971	Female	Thick gold crescents tapering into a thinner wire which would have gone through the earlobe.	Rosenthal, 2015.
Single earring	Mampsis, Tomb 100	Negev	First half of 2nd century CE	Earring	Gold			Circular	1971	Female	Disc-shaped earring made of gold. Braided/leaf design around the exterior with some grape clusters. Inside is a nude female figure (Alat-Aphrodite or Al-Uzza) with upraised hands and surrounded by gold granules/balls and other designs.	Rosenthal, 2015; Negev, 1971; Almasri et al., 2012.
Earring pair	Mampsis, Tomb 112	Negev	First half of 2nd century CE	Earring	Gold			Circular	1965-1967		Gold wire loops with matching pendants fixed to each. The exterior of each pendant has a braided/leaf design encircling, and the interior has two oblong settings for other stones as well as a raised area to suggest a nose or mouth. Decorated with bunches of granulation.	Negev, 1971; Almasri et al., 2012.
Earring pair	Mampsis, Tomb 100	Negev	First half of 2nd century CE	Earring	Gold				1965-1967		Two gold shield-and-pendant style earrings. The convex shields are shaped into a shallow cone, with a single granule at the tip of the protrusion, and a decorative, textured border around the outer circumference. A hoop at the base of the shield is used to suspend a gold coil that then has decorative wire hanging from it.	Negev, 1971; Rosenthal-Heginbottom, 2016.
Iron, copper, silver, gold earrings	Khirbet Qazone	Negev		Earring	Iron, copper, silver, gold				1996-1997		No additional description provided.	Politis, 1998; Politis, 1999.

Gold nose ring	Avdat (Oboda)	Negev		Nose ring	Gold				April 1971		"…made of a wire bent into a circle and tapered towards its ends. One of the ends is turned into a loop, into which the other end can be inserted, thus forming the closure. Soldered to the lower part of the ring is a row of balls, consisting of a large central sphere with six smaller ones on either side. The spheres and the central ball are decorated with clusters of granulated gold. Additional decorative elements, consisting of a bead spacer and another ball with clusters of granulated gold at the end, are attached to the central ball" (Rosenthal, 1974).	Rosenthal, 1974; Almasri et al., 2012.
One nosering	Mampsis, Tomb 119	Negev		Nose ring	Gold			Lunate	1971	Female	A single half-circle nose ring made of thin gold wire. There is a loop on one end to secure the wire through the ear. The bottom of the ring has a row of gold balls, and at the center hangs a larger gold ball with additional embellishments.	Rosenthal, 2015; Almasari et al., 2012.
Gold pendant	Mampsis, Tomb 121	Negev	First half of 2nd century CE	Pendant	Gold	Dolphin		Figurine	1965-1967	Female	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	Negev, 1971; Rosenthal, 2015.
Gold pendant	Mampsis, Tomb 100	Negev	First half of 2nd century CE	Pendant	Gold	Dolphin		Figurine	1965-1967	Female	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	Negev, 1971; Rosenthal, 2015.
Gold pendant	Mampsis, Tomb 118	Negev	First half of 2nd century CE	Pendant	Gold	Dolphin		Figurine	1965-1967	Female	A gold pendant in the form of a dolphin. The thinner end is attached to a loop; the center of the pendant has a circular indent, possible for a stone bezel.	Negev, 1971; Rosenthal, 2015.
Scarab	Khirbet Qazone	Negev		Pendant	Unknown	Scarab			1996-1997		No additional description provided.	Politis, 1998; Politis, 1999.
Wreath	Khirbet Qazone	Negev		Wreath	Unknown				1996-1997		No additional description provided.	Politis, 1998; Politis, 1999.
Scorpion amulet	Siq (Tomb 813)	Petra	Late 1st-Early 2nd century	Amulet	Gold	Scorpion			October 1974		An elite burial.	Gourley & Johnson, 2020; Zayadine, 1974.
Crescent moon amulet	Siq (Tomb 813)	Petra	Late 1st-Early 2nd century	Amulet	Gold	Crescent moon		Lunate	October 1974		An elite burial.	Gourley & Johnson, 2020; Zayadine, 1974.
Agate bead	Siq (Tomb 813)	Petra	Late 1st-Early 2nd century	Bead	Agate			Long barrel	October 1974		An elite burial.	Gourley & Johnson, 2020; Zayadine, 1974.

Agate bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Agate		12 mm long 6 mm wide in center 4 mm wide on each end	Long barrel	2014		A long barrel, centrally-pierced agate bead. It is a translucent, pale yellow stone, with a thin opaque white stripe followed by a brown stone stripe. RI 7.	Johnson, "Gold Jewelry" (Unpublished).
Agate bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Agate		10mm long 3 mm wide at ends 7 mm wide in middle	Ovoid	2014		A flattened ovoid agate bead that is centrally pierced. It is a cloudy, pale amber color, with an opaque white stripe through the center. RI 8.	Johnson, "Gold Jewelry" (Unpublished).
Agate bead	Wadi Mataha, Loculus 14A, SU 1	Petra	50-100 CE	Bead	Agate		1 cm diameter		2007		A banded agate bead, centrally drilled. RI 12.	Johnson, 2007 (Unpublished).
Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Amethyst		7 mm dia. At widest point 5 mm thick	Trapezoid	2014		Trapezoidal, light purple amethyst bead, that is pierced through the narrow side of the trapezoid. RI 9.	Johnson, "Gold Jewelry" (Unpublished).
Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Amethyst		8 mm dia 4 mm wide	Trapezoid	2014		An amethyst bead in the shape of a thin trapezoid. It has shades of both light and deep purple; the hole if off-center. RI 11.	Johnson, "Gold Jewelry" (Unpublished).
Amethyst bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Amethyst		7 mm dia 4 mm thick	Trapezoid	2014		A trapezoid amethyst bead, of a transparent lavendar color. There is an oval chip on one side. The bead is pierced through the short side of the trapezoid. RI 18.	Johnson, "Gold Jewelry" (Unpublished).
Amethyst bead	Wadi Mataha, Site 6A	Petra	Late 1st century CE	Bead	Amethyst		7mm diameter 3 mm depth 3mm Flat top	Biconic	2005		A small biconic amethyst bead, with a hole drilled from one side. RI 159.	Johnson, 2005 (Unpublished).
Amethyst (?) bead	Wadi Mataha	Petra		Bead	Amethyst		3 cm	Biconic	2001		A biconical bead made of marbled purple and clear material. RI 9.	Johnson, 2001 (Unpublished).
Amethyst bead (x3)	North Ridge	Petra		Bead	Amethyst						No additional description provided.	Perry & Walker, 2018.
Bone bead	Wadi Mataha, SU 3, Loculus 15L14	Petra	50-100 CE	Bead	Bone		Length: 21.6 mm Width: 12.1 mm Height: 7.9 mm Diam. of hole: 4.9 mm	Circular	2014		A circular bone bead, broken in half. The back of the bead is flat and the front is rounded. RI 24.	Johnson, "Gold Jewelry" (Unpublished).

2 carnelian beads	Siq (Tomb 813)	Petra	Late 1st-Early 2nd century	Bead	Carnelian			Short truncated biconic	October 1974		An elite burial.	Gourley & Johnson, 2020; Zayadine, 1974.
Carnelian bead	Wadi Mataha, SU 1, Loculus 16B	Petra	Modern?	Bead	Carnelian		8 mm diameter	Ovoid	2008		An oval carnelian bead, centrally pierced.	Johnson, 2008 (Unpublished).
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Carnelian		6 mm dia 4 mm wide	Circular	2014		Discoid, brownish-red carnelian bead. One side is smooth and uniform, the other has three large imperfections. It is pierced through the wide area of the bead. RI 10.	Johnson, "Gold Jewelry" (Unpublished).
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Carnelian		7 mm dia 3.5 mm thick	Circular	2014		A flattened circular bead made of carnelian. It is a transparent red-orange color with a centrally pierced hold. RI 12.	Johnson, "Gold Jewelry" (Unpublished).
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Carnelian		7 mm long 2mm wide at end. 6 mm wide in center.	Ovoid	2014		An ovoid carnelian bead, centrally pierced through the long axis. It is a light coral/peach color with darker red streaks. It has incised lines and is centrally pierced. RI 17.	Johnson, "Gold Jewelry" (Unpublished).
Carnelian bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Carnelian		5 mm dia 2mm thick	Circular	2014		A small round carnelian bead of a deep, orange-red color, with an off-center hole. RI 19.	Johnson, "Gold Jewelry" (Unpublished).
Carnelian bead	Wadi Mataha, Site 15, SU4	Petra		Bead	Carnelian			Hexagonal	2019		RI 4.	Johnson & Anderson, 2020.
Carnelian bead	Wadi Mataha, Site 10D	Petra	Late 1st century CE	Bead	Carnelian		4mm diameter 3mm depth	Circular	2005		One small, circular carnelian bead. RI 89.	Johnson, 2005 (Unpublished).
Carnelian bead	Wadi Mataha, Site 6	Petra	Late 1st century CE	Bead	Carnelian		7x9mm	Biconic	2004		A biconic carnelian bead that is polished on a depression around both ends of the hole. RI 64.	Johnson, 2004 (Unpublished).
Carnelian bead	Wadi Mataha 15L16	Petra	50-70 CE	Bead	Carnelian		8 mm long, 4 mm diameter		2021		A cylindrical carnelian bead. It is a red-orange transclucent color and is pierced along the central axis.	Johnson, 2021 (Unpublished).
Carnelian bead (x3)	North Ridge	Petra		Bead	Carnelian						No additional description provided.	Perry & Walker, 2018.
Beads	ath-Thughrah, Tomb Th303	Petra		Bead	Emerald, amethyst, chalcedony		varied		2006		14 beads of various materials.	Gueli et al., 2010; Sachet et al., 2013.
Blue frit bead	Wadi Mataha	Petra	Unknown	Bead	Frit (glass?)		4 mm wide, 4 mm long	Square	2021		Dark green, square in cross section, centrally pierced rectangular hole.	Johnson, 2021 (Unpublished).

Blue frit bead	Wadi Mataha	Petra	Unknown	Bead	Frit (glass?)		4.2 mm circ., 3.5 mm high	Ovoid	2021		Blue green, oval in cross section, centrally pierced, oval hole.	Johnson, 2021 (Unpublished).
White glass bead	Wadi Mataha, Loculus 14D	Petra	50-100 CE	Bead	Glass		5 mm diam.	Ovoid	2008		Oval bead made of white glass.	Johnson, 2008 (Unpublished).
Glass beads (20/21?)	Wadi Mataha, Bedrock, Loculus 16H	Petra	1-100 CE	Bead	Glass		5 mm diameter		2008		14 are complete, 7 fragmentary.	Johnson, 2008 (Unpublished).
Small bead	Wadi Mataha, Loculus 15L1	Petra	50-70 CE	Bead	Glass		6.7 mm diam.		2011	N/A	One yellow glass bead.	Johnson, 2011 (Unpublished).
Glass bead (x2)	North Ridge	Petra		Bead	Glass						One white-and-red glass bead; one black-and-white striped glass bead.	Perry & Walker, 2018.
Green beads	Wadi Abu Khasharif, Pit 9	Petra		Bead	Not stated				2006	Female	"Grave goods were discovered in this burial including small green beads and fragments of string that held them together. Near the legs, larger bead pieces were found."	al-Salameen & Falahat, 2009; Perry et al., 2007.
Beads (x4)	North Ridge	Petra		Bead	Not stated	Cat (?)					2 round beads of unknown material; 1 carved bead, possibly bone; one bead in the shape of an animal, possibly a cat, of unknown material (likely glass or frit).	Perry & Walker, 2018.
Bead	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Bead	Shell		Diam.: 9.64 mm Height: 3.9 mm Hole diam.: 2.9 mm	Conical	2014		A small circular shell bead; the side view is conical in shape. The shell is turbidae. RI 21.	Johnson, "Gold Jewelry" (Unpublished).
Shell bead	Wadi Mataha, SU NP, Loculus 15	Petra	N.D.	Bead	Shell	Cowry shell	Length: 17.3 mm Base width: 12.6 mm Top width: 7.4 mm Thickness: 7.8 mm Hole length: 4 mm Hole width: 1.5 mm	Cowry shell	2014		A cowrie shell with a small hole in the back, used as a bead. RI 22.	Johnson, "Gold Jewelry" (Unpublished).
Two shell beads	Wadi Mataha, Chamber 15L4	Petra		Bead	Shell				2016		No additional description provided.	Johnson, 2018.

Flat shell beads	Wadi Mataha, Site 6B	Petra	Late 1st century CE	Bead	Shell		7mm diameter 1mm depth, and 5mm diameter 1 mm depth	Circular	2005		3 round, flat shell beads. Two are in good condition but one is only fragmentary. RI 85.	Johnson, 2005 (Unpublished).
Flat shell beads	Wadi Mataha, Site 6B	Petra	Late 1st century CE	Bead	Shell		10mm diamter 2mm depth	Circular	2005		A center cut flat shell bead and two fragments. RI 86.	Johnson, 2005 (Unpublished).
Flat shell beads	Wadi Mataha, Site 6A	Petra	Late 1st century CE	Bead	Shell			Circular	2005		Two flat, round shell beads. RI 88.	Johnson, 2005 (Unpublished).
Small bead	Wadi Mataha, Loculus 15L1	Petra	50-70 CE	Bead	Shell		10.6 mm length		2011	N/A	One shell bead, turbo.	Johnson, 2011 (Unpublished).
Small bead	Wadi Mataha, Loculus 15L1	Petra	50-70 CE	Bead	Shell		4.8 mm diam.		2011	N/A	A center drilled, flat shell bead.	Johnson, 2011 (Unpublished).
Shell bead	Wadi Mataha, Loculus 15T	Petra	50-90 CE	Bead	Shell		19 mm wide, 13 mm high		2021		A centrally pierced shell bead with one large hole near the base and a second, smaller hole near the point. The surface was removed to create a spiral design. The shell is Gastropoda Tectus dentatus.	Johnson, 2021 (Unpublished).
Shell bead	Wadi Mataha, Loculus 15T	Petra	50-90 CE	Bead	Shell		11 mm long		2021		A laterally pierced shell bead. The shell is Gastropoda engina mendiurum.	Johnson, 2021 (Unpublished).
Shell bead	North Ridge	Petra		Bead	Shell	Cowry shell					Cowry shell bead.	Perry & Walker, 2018.
Stone bead	Wadi Mataha, SU 2, Loculus 16E	Petra	1-100 CE	Bead	Stone		8mm diameter	Ovoid	2008		Oval stone bead.	Johnson, 2008 (Unpublished).
Stone bead, painted	Wadi Mataha, Site 6B	Petra	Late 1st century CE	Bead	Stone				2005		One half of a stone bead that has been painted with a white face. RI 87.	Johnson, 2005 (Unpublished).
Stone bead	Wadi Mataha, Site 6a	Petra	Late 1st century CE	Bead	Stone		4x4mm	Ovoid	2004		An oval bead made of dark green stone with striations on the side. RI 134.	Johnson, 2004 (Unpublished).
Stone bead	Wadi Mataha, Site 6a	Petra	Late 1st century CE	Bead	Stone		3x5mm	Ovoid	2004		A yellow citrine quartz bead in the shape of a flat oval ring. RI 135.	Johnson, 2004 (Unpublished).
White painted stone bead	Wadi Mataha, Loculus 15T	Petra	50-90 CE	Bead	Stone		9 mm diameter		2021		A round, centrally pierced stone bead made of white stone with black and red inclusions. It is carved and polished to look like Harpocrates; the figure has red eyes, a black mouth, and a black hair piece.	Johnson, 2021 (Unpublished).

Wooden bead	Wad Mataha, SU 2e, Loculus 16G	Petra	1-100 CE	Bead	Wood		5 mm diameter		2008		Wooden bead.	Johnson, 2008 (Unpublished).
Wooden bead	Wadi Mataha, SU 1, Loculus 16H	Petra	1-100 CE	Bead	Wood		5 mm diameter		2008		Wooden bead.	Johnson, 2008 (Unpublished).
Figurine bead	Wadi Mataha	Petra		Bead	Wood		3 cm	Figurine	2001		A brown/sepia colored bead, possibly made of wood, in the shape of a face/figurine.	Johnson, 2001 (Unpublished).
Bronze bells	ath-Thughrah, Tomb Th303	Petra		Bell	Bronze				2006		No additional description provided.	Sachet et al., 2013.
Bone bracelet	Wadi Abu Khasharif, Pit 9	Petra		Bracelet	Bone				2006	Female	"Additionally fragment [sic] of decorated bone bracelet and metal wire about 3 cm long, probably used as a bracelet were found" (al-Salameen & Falahat, 2009).	al-Salameen & Falahat, 2009; Perry et al., 2007.
Copper wire bracelet	Petra	Petra		Bracelet	Copper						No additional description provided.	Horsfield, 1938.
Copper alloy bracelet	North Ridge, Tomb B.4 or B.5	Petra		Bracelet	Copper		Approx 5 cm wide		2012		Found mostly in upper stratum. Four fragments; seems to be a plain circular bracelet.	Perry, 2016; Perry, 2017; Perry & Walker, 2018.
2 copper bracelets	Khirbet edh-Dharih	Petra		Bracelet	Copper						No additional description provided.	Almasri et al., 2012.
Copper bracelet	Khirbet edh-Dharih	Petra		Bracelet	Copper						No additional description provided.	Almasri et al., 2012.
2 copper bracelets	Khirbet edh-Dharih	Petra		Bracelet	Copper						Terminal decorated with palm leaf on one, star shape on other.	Almasri et al., 2012.
Glass bracelet	Wadi Mataha, Loculus 15L7	Petra		Bracelet	Glass				2013	Female	An orange and green glass bracelet, fragmented into four pieces.	Corbett et al., 2014; Johnson et al., 2017.
2 gold bracelets	Khirbet edh-Dharih	Petra		Bracelet	Gold						No additional description provided.	Almasri et al., 2012.
Bronze earring	Wadi Mataha, SU 3a, Loculus 16B	Petra	50-100 CE	Earring	Bronze		10mm	Circular	2008		A circular bronze earring.	Johnson, 2008 (Unpublished).
Bronze earring	Wadi Mataha, SU 3, Loculus 16L	Petra	1-100 CE	Earring	Bronze		5 mm diameter		2008		A bronze twisted earring.	Johnson, 2008 (Unpublished).
Copper earring	Khirbet edh-Dharih	Petra		Earring	Copper and shell						"Copper earring with seashell stone."	Almasri et al., 2012.

Gold earring	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Earring	Gold	Floral	14 mm dia. Stone 2 mm	Circular	2014		A pair of circular gold flower earrings. They have an oblong red stone (probably carnelian) in the center with six heart-shaped hollow petals around it. On each earring, one petal is filled with a light brown stone. The outer rim of each earring is decorated with a row of granulation.	Johnson, "Gold Jewelry" (Unpublished).
Gold bird earring	Khirbet edh-Dharih	Petra		Earring	Gold	Bird					A gold pendant earring of a bird emerging from a pyxis bottle.	Almasri et al., 2012; Lenoble et al., 2001.
Single earring	Tomb Br. 781, Loculus 8	Petra		Earring	Gold				2013		A gold earring. The main part of the earring is made of three discs stacked on each other into a triangle. There is a bar at the base of this triangle from which hang three dangling gold bead-like decorations.	Wadeson, 2014.
Gold earring	al-Khubthah, Tomb BD781, Loculus 8	Petra	post-106 CE	Earring	Gold				2013		No additional description provided.	Corbett et al., 2014.
Pair of gold earrings	Wadi Mataha, Loculus 15L15	Petra	50-70 CE	Earring	Gold		9.3 mm diam.		2011	Female	A pair of gold hoop earrings. Each is made with a single piece of wire that is thicker at the center and tapers at the top where the ends meet. The center of each hoop is decorated with two pressed vertical lines.	Johnson et al., 2017.
Earring Pair	Siq (Area B, Loculus 21)	Petra	1st century BCE	Earring	Gold			Lunate	1973-1974		"The gold crescent shaped ear-rings…are a common type in the Nabataean world as proved by the finds of Mampsis."	Zayadine, 1974.
Pair of gold earrings	North Ridge	Petra		Earring	Gold						No additional description provided.	Perry & Walker, 2018.
Earring pair	North Ridge	Petra		Earring	Not stated						No additional description provided.	Perry & Walker, 2018.
Bronze medallion	Wadi Mataha, SU 4, Loculus 16D	Petra	1-100 CE	Medallion	Bronze	Deity	25x20 mm	Lunate	2008		"Bronze medallion in lunate shape with etched figure of god with hairlock in gold leaf."	Johnson, 2008 (Unpublished).
Gold nose ring	North Ridge	Petra		Nose ring	Gold				2012-2016		No additional description provided.	Perry, 2017.
Bronze pendant	Wadi Mataha 15T	Petra	50-90 CE	Pendant	Bronze		18 mm long, 10 mm wide	Leaf	2021		A leaf-shaped bronze pendant made of thin metal with a twisted clasp.	Johnson, 2021 (Unpublished).
Gold earring or pendant	Wadi Mataha, Site 6A	Petra	Late 1st century CE	Pendant	Gold		36.8mm height 37.5mm width (at center)	Lunate	2005		"Crescent-shaped with beaded ring in center. Tiny beading circles entire circumference of ring. Two identical loops (4.7 mm diam) are located at each side. Ends of crescent are twisted wires." RI 128	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Cowry shell	Loop3x5mm; Whole bead 16 mm long 10 mm wide 32 mm c.	Cowry shell	2014		A yellow-gold pendant in the shape of a cowrie shell. It has a gold loop on one end and a gold coil on the other, with a small hole on one side. RI 1.	Johnson, "Gold Jewelry" (Unpublished).

Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Harpocrates	Loop 3x3mm Whole bead 7 mm long 4 mm wide		2014		A small yellow-gold pendant that is bulbous on one side and flat on the other, with a loop on the top. The flat side has a crease and a large hole creating a face of Harpocrates. RI 2.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Spoked wheel	Loop 2x1mm; Whole Bead 7mm long 9 mm wide	Wheel	2014		A circular gold wheel pendant. It has 8 granulated spokes radiating from a central point. The loop at the top of the pendant is decorated with a gold ball, and the bottommost spoke has 2 large gold balls on either side of its base. RI 3.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Falcon	66 mm	Rectangle	2014		A rectangular reddish-gold pendant with a falcon design. It is made of a flat gold sheet with four gold balls, one at each corner, and a double loop made of gold on the top. The falcon design is raised from the back and depicts a falcon standing on a branch with a small face and horns facing down and to the right. RI 4.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Spoked wheel	7 mm dia 9 mm long 2 mm loop	Wheel	2014		A circular gold wheel pendant with 8 granulated spokes and a large gold ball at the center where they meet. The loop also is decorated with a single gold granule. RI 13.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold		L. 15 mm Stone 5 mm at Widest point		2014		A stone pendant. The brown oblong stone (chert) is encircled by gold wire that has been shaped to look like braiding. The stone is flat on one side and there is a gold loop attached at its narrowest end. RI 14.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Spoked wheel	L. 10 mm 7 mm dia	Wheel	2014		A circular gold wheel pendant with 8 granulated spokes and a large gold ball at the center where they meet. The loop also is decorated with a single gold granule. RI 15.	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	Wadi Mataha, SU 6, Loculus 15L12	Petra	50-100 CE	Pendant	Gold	Scorpion	15x12 mm Loop 2 mm	Rectangle	2014		A gold rectangular pendant with a scorpion design. It is made of a flat gold sheet with four gold balls, one at each corner, and a gold loop at the top. The scorpion is at a three-quarter angle with its tail arching from right to left; its segmented body has three long legs to the left and two short legs to the right. RI 16 (photo mislabeled).	Johnson, "Gold Jewelry" (Unpublished).
Gold pendant	ath-Thughrah, Tomb Th303	Petra		Pendant	Gold		approx 1.5 cm wide		2006		No additional description provided.	Sachet et al., 2013.

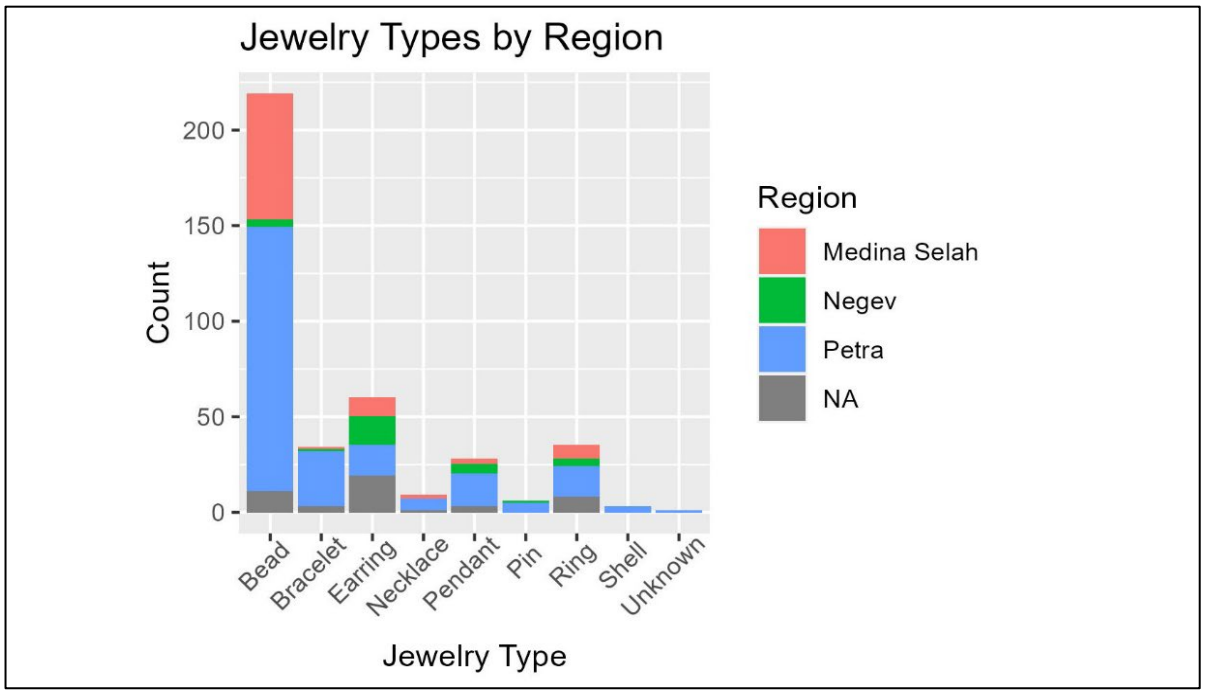
Gold pendant with agate	North Ridge, Tomb B.4 or B.5	Petra		Pendant	Gold with agate		approx. 2.5 cm at widest point	Ovoid	2012	Multiple	A teardrop-shaped pendant made of multiple rings/rows of gold balls, twisted gold wire designs (about 3 layers). The top and bottom of the pendant both have gold loops attached, and in the center is set a polished agate.	Perry, 2016; Perry, 2017.
Harpocrates pendant	Wadi Mataha, Site 6	Petra	Late 1st century CE	Pendant	Hard sandstone	Harpocrates	27x7x5mm		2004		A sandstone Harpocrates pendant with a hole at the top. The front depicts an oval head with a hairlock and an arm coming up from the left side into the mouth. The figure is bowlegged on a stand. The back has small holes as a design. RI 15.	Johnson, 2004 (Unpublished).
White stone pendant	North Ridge	Petra		Pendant	Not stated						No additional description provided.	Perry & Walker, 2018.
Wire pendant with white bead	North Ridge	Petra		Pendant	Not stated						No additional description provided.	Perry & Walker, 2018.
Silver amulet	Wadi Mataha, Chamber 15L4	Petra		Pendant	Silver				2016		No additional description provided.	Johnson, 2018.
Bone hair pin	North Ridge, Tomb B.4 or B.5	Petra		Pin	Bone		approx. 10 cm length		2012	Multiple	Possibly also a kuhul (kohl) stick. Broken in half before conservation. The thicker side has a rounded end with three shallow grooves carved under it	Perry, 2016; Perry, 2017.
Bronze pin	Wadi Mataha, SU 2, Loculus 16B	Petra	40-70 CE	Pin	Bronze		18 mm diameter		2008		The top of a bronze pin.	Johnson, 2008 (Unpublished).
Bronze pin	Wadi Mataha, Site 6a	Petra	Late 1st century CE	Pin	Bronze		16x1mm		2004		A small bronze pin with a long shaft, with a possible Harpocrates image on one end. RI 150.	Johnson, 2004 (Unpublished).
Bone ring	Petra	Petra		Ring	Bone						No additional description provided.	Horsfield. 1942
Garnet ring	Khirbet edh-Dharih	Petra		Ring	Garnet	Winged victory goddess		Ovoid			A garnet, used as a ring bezel, carved to depict a winged victory goddess.	Almasri et al., 2012.
Finger-ring	Siq (Tomb 813)	Petra	Late 1st-Early 2nd century	Ring	Gold				October 1974		An elite burial.	Gourley & Johnson, 2020; Zayadine, 1974.
Ring (x2)	Dumat al-Jandal	Petra	Hellenistic	Ring	Gold				1985-1986		No additional description provided.	Charloux et al., 2014.
Iron ring	Wadi Mataha, SU 2, Loculus 16E	Petra	25 B.C. - 50 CE	Ring	Iron		28 mm diameter, 15 cm bezel width, 25 cm top length		2008		A corroded iron ring with a break in the circle at the back. It has a flat bezeled front.	Johnson, 2008 (Unpublished).
Portions of two rings	North Ridge	Petra		Ring	Unknown						Found mostly in the upper stratum.	Perry & Walker, 2018.

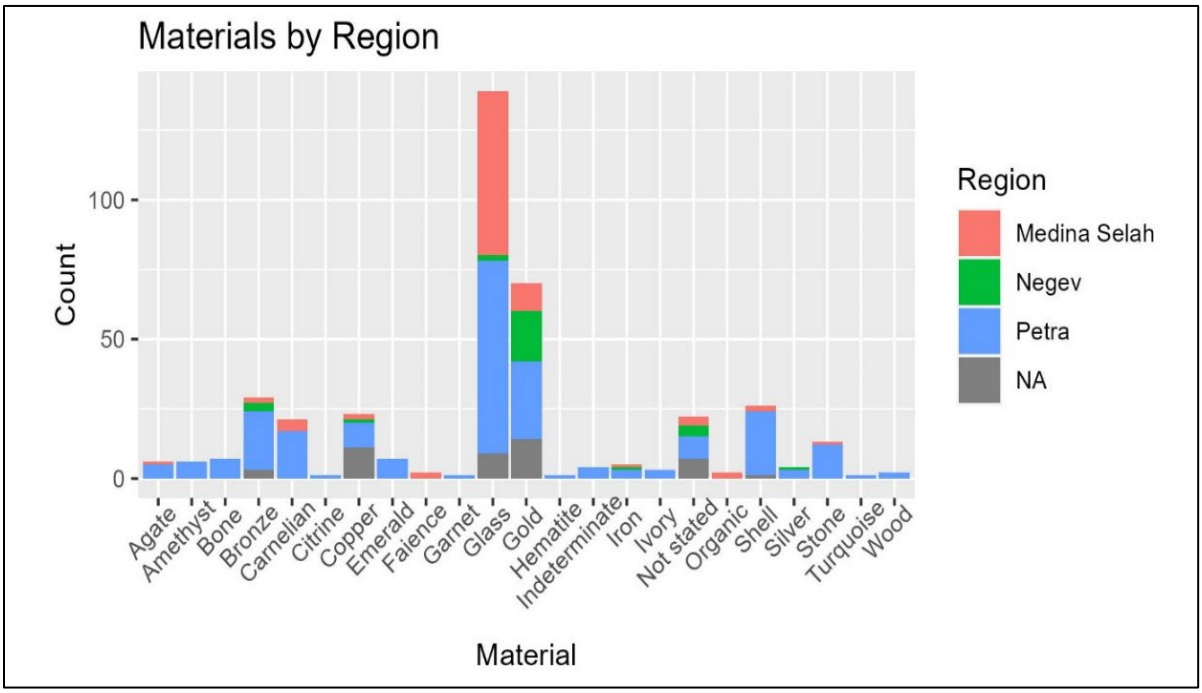
Worked turquoise	Wadi Mataha, Site 15, SU4 (RI5)	Petra		Unknown	Turquoise				2019		RI 15.	Johnson & Anderson, 2020.

Appendix C

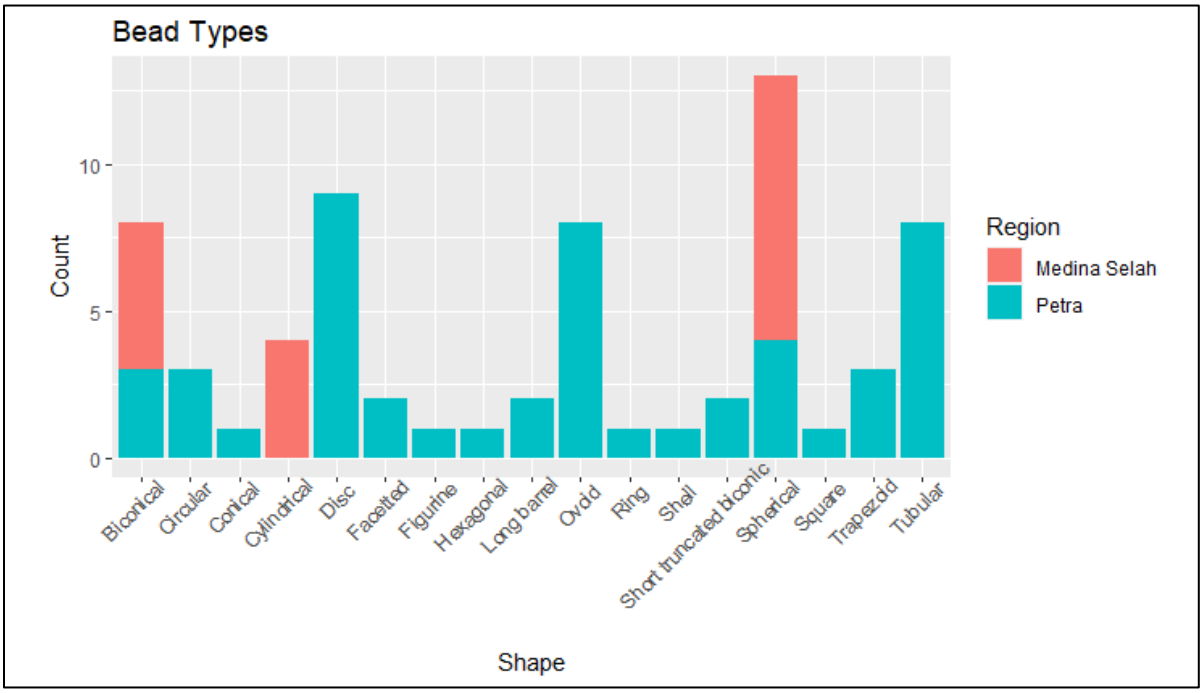
This appendix contains all of the graphs which were generated from this data. They have been compiled here in one location for convenience.

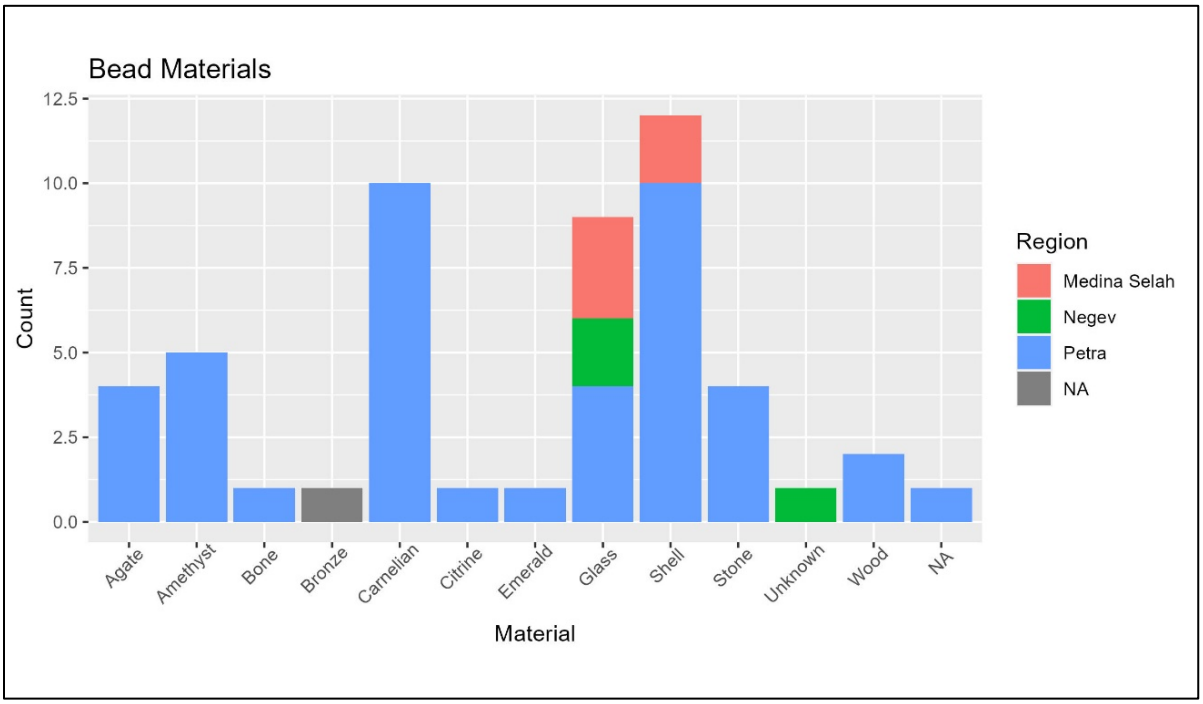
General Graphs

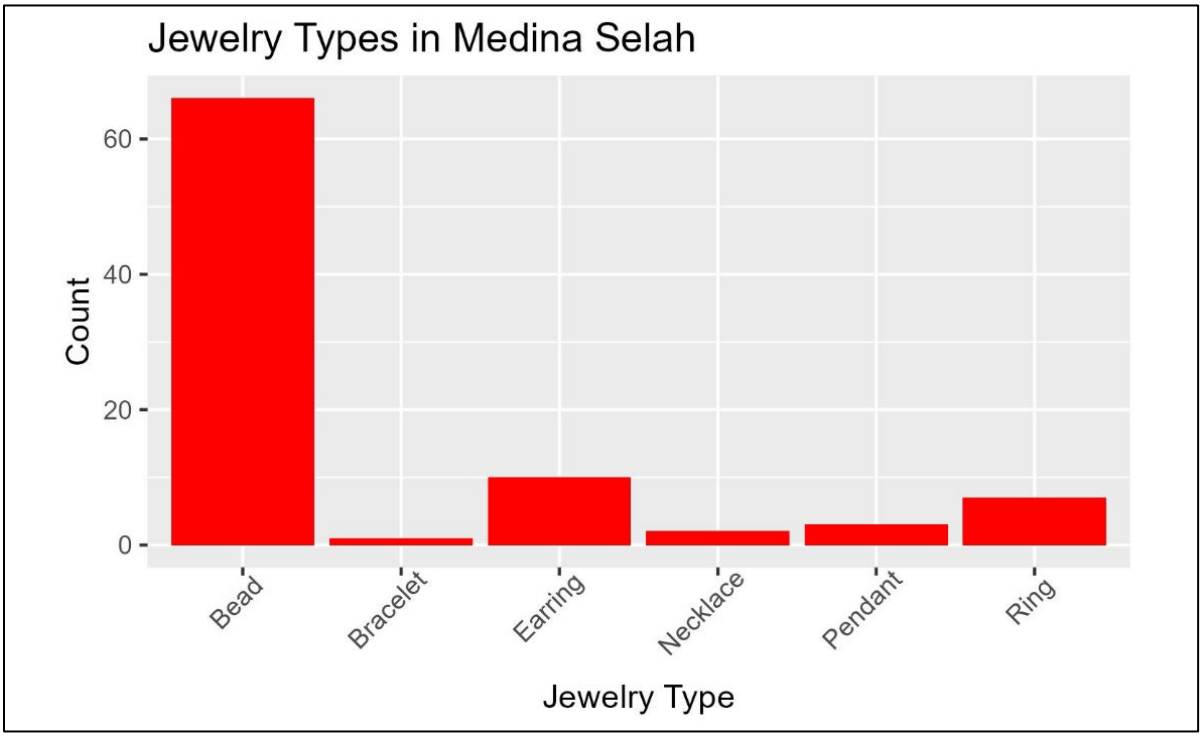


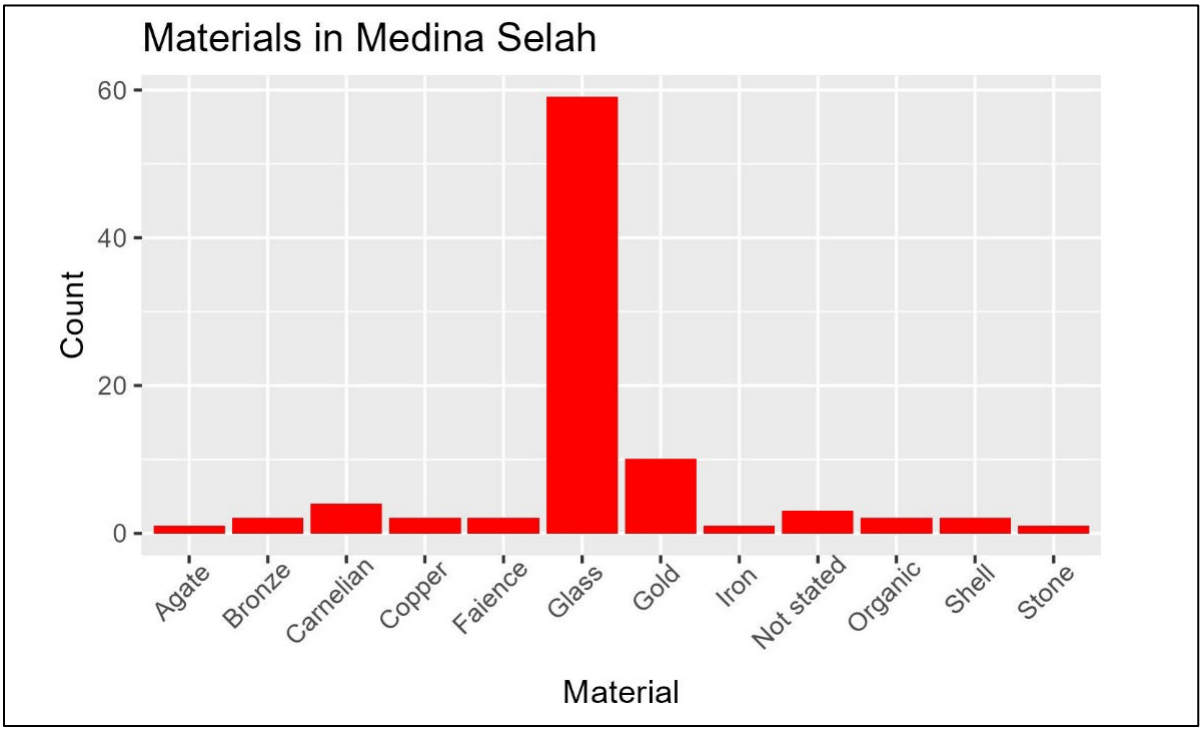


Bead Graphs

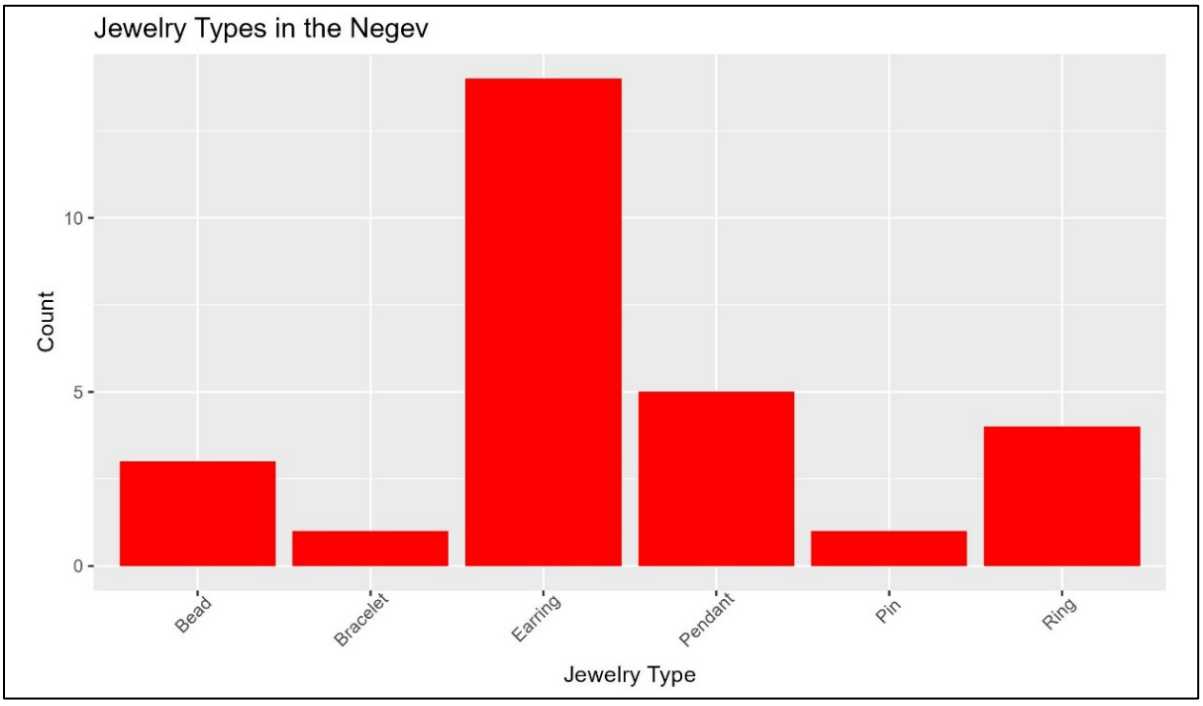

Bead Types
Count
10
5
0
Region
Medina Selah
Petra
Biconical
Circular
Conical
Cylindrical
Disc
Faceted
Figurine
Hexagonal
Long barrel
Ovoid
Ring
Shell
Short truncated biconic
Spherical
Square
Trapezoid
Tubular
Shape

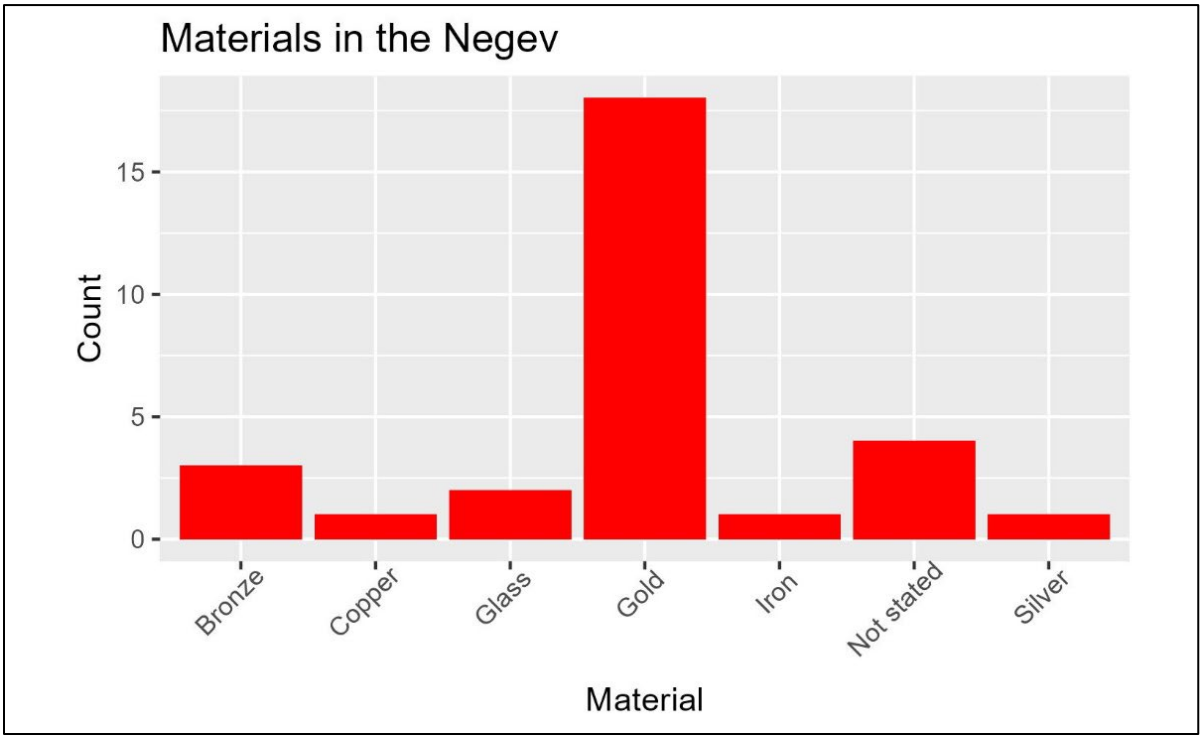

Bead Materials
Count
12.5
10.0
7.5
5.0
2.5
0.0
Region
Medina Selah
Negev
Petra
NA
Agate
Amethyst
Bone
Bronze
Carnelian
Citrine
Emerald
Glass
Shell
Stone
Unknown
Wood
NA
Material


Jewelry Types in Medina Selah
Count
60
40
20
0
Bead
Bracelet
Earring
Necklace
Pendant
Ring
Jewelry Type

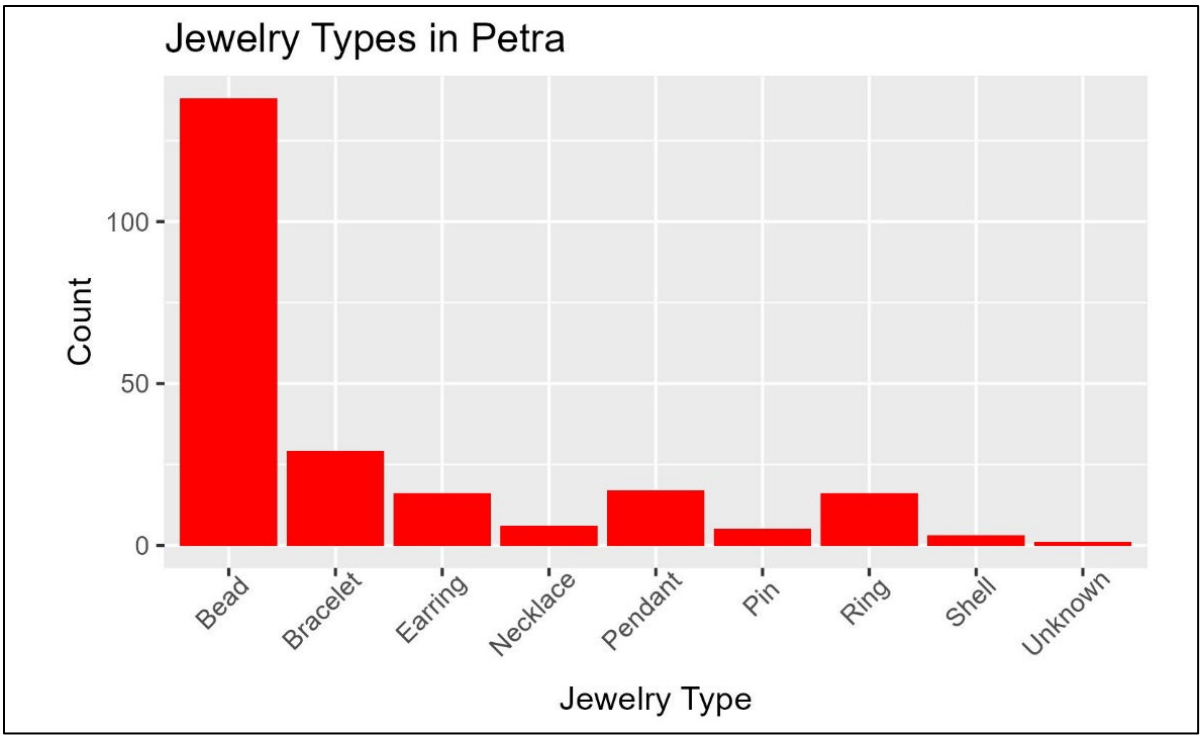

Materials in Medina Selah
Count
60
40
20
0
Agate
Bronze
Carnelian
Copper
Faience
Glass
Gold
Iron
Not stated
Organic
Shell
Stone
Material

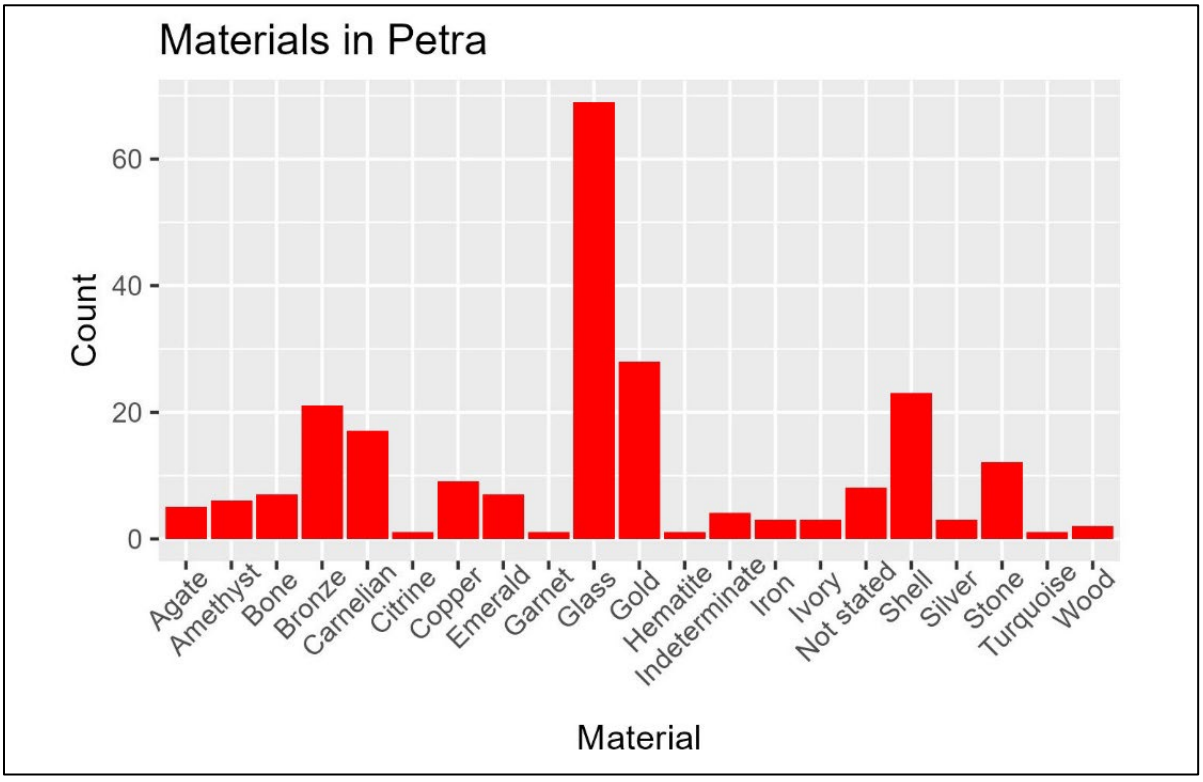
Negev


Jewelry Types in the Negev
Count
10
5
0
Bead
Bracelet
Earring
Pendant
Pin
Ring
Jewelry Type


Materials in the Negev
Count
15
10
5
0
Bronze
Copper
Glass
Gold
Iron
Not stated
Silver
Material

Petra


Jewelry Types in Petra
Count
100
50
0
Bead
Bracelet
Earring
Necklace
Pendant
Pin
Ring
Shell
Unknown
Jewelry Type


Materials in Petra
Count
60
40
20
0
Agate
Amethyst
Bone
Bronze
Carnelian
Citrine
Copper
Emerald
Garnet
Glass
Gold
Hematite
Indeterminate
Iron
Ivory
Not stated
Shell
Silver
Stone
Turquoise
Wood
Material