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*Original article*

# SEASHELL AND SNAILS IN EGYPT DURING PREHISTORIC TIMES

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***Abstract***:
*Seashells and Snails are known and used all over the world. They were used as raw materials for making ornaments and jewelry or as a source of food by eating the live animal inside. Seashells had special religious importance in many civilizations, especially the ancient Egyptian civilization, as shown through the actual use of shells as amulets or through simulations by making them of precious stones or metals like gold as amulets for protection. Shells also had funerary importance and were placed with the dead in the tombs among their offerings to benefit them in the other life. Many shells were found in several tombs in Egypt during the Neolithic period. Shells were a symbol of protection from the bad eye because of their similarity with the shape of the eye, so the early man thought that the shell prevented the "evil eye", where it was used as protection against evil, especially for women during pregnancy and childbirth. There were many other uses for shells, some seashells were used as containers for cosmetics or preserving colors, and some kinds of snails were used to extract dyes. Shells were also used as a means of social exchange or swap, commonly used as a means of commercial exchange. Shells still have ideological significance in many primitive tribes.*

## 1. Introduction

Oyster shells and snails are kinds of mollusks that have appeared since 650 million years. Mollusks live in rivers and along the shores of warm seas [1]. The size of the shell depends on the size of the soft animal living inside it, which differs in color and shape [1]. Mollusks were known and used in different ancient cultures worldwide. They were exploited as raw materials for daily use in life and as a source of food [2]. Seashells have held particular importance for religious, decorative, industrial, or other purposes. They were used as amulets by the ancient Egyptians beginning as early as the Neolithic period [3]. Different kinds of seashells served as amulets both for the living and the dead. Seashells served to protect their owners against evil. To the living, these types of amulets also had certain health benefits [4]. Cowrie shells, for instance, are the shells of small marine snails widely distributed in warm seas. Their texture is very smooth due to their glossy finish, which comes in various shapes, patterns, and colors. Cowrie shells had many uses and purposes in ancient times [3]. Cowries of many species were of great significance in ancient Egypt, featuring in well-appointed graves, often in association with beads or other ornaments, fig. (1) [5]. Cowrie shells have the appearance of female genitalia. They

were inserted into women's girdles, where women were highly valued for their ability to conceive children [6]. To protect their fertility for the future, girls and young women wore cowrie girdles. They would also be worn during pregnancy to protect children from any harm or complications and have a safe and successful delivery [3]. On the other hand, *Aspatharia* (*spathopsis*) *rubens* bivalves possibly constituted a dietary supplement, and their shells were used as spoons [6].

Figure (1) Shows cowries; a dorsal view at the top and a ventral view at the bottom (*After, Haour & Christie, 2019*) [5].

## 2. Types of Seashells and Snails

Seashells and snails are kinds of mollusks with many types of soft animals that grow in seas and rivers. Their kinds are different in size. There are three main types of Mollusks: *Bivalvia*, including oysters that are eaten as food [7]; multi-legged spiral shell, which lives in lakes or rivers and many seas; cephalopods wrapped in the form of a flat snail with a straight shell with a simple decorative line [7]. The body of most mollusks is covered with a hard outer shell, but a few have a thin shell, so the animal's body is covered, in this case, with a thick cover to protect it. The shell in mollusks consists of calcium carbonate with an organic nitrogenous substance that covers the shell from the outside to protect it from the effect of water salinity or the effect of carbonic acid dissolved in water [1]. The shells of mollusks take different shapes. Sometimes, the shells are made of one part (one shell) in the form of a spiral with a single nozzle from which the muscular foot of the animal emerges when moving; such shells are known as snails, and the spiral shape of the shell may be based on a vertical longitudinal axis inside the body. The shell can be completely flat and spiral and consists of two parts that connect from the top with a flexible edge called the joint ligament, fig. (2) [7].

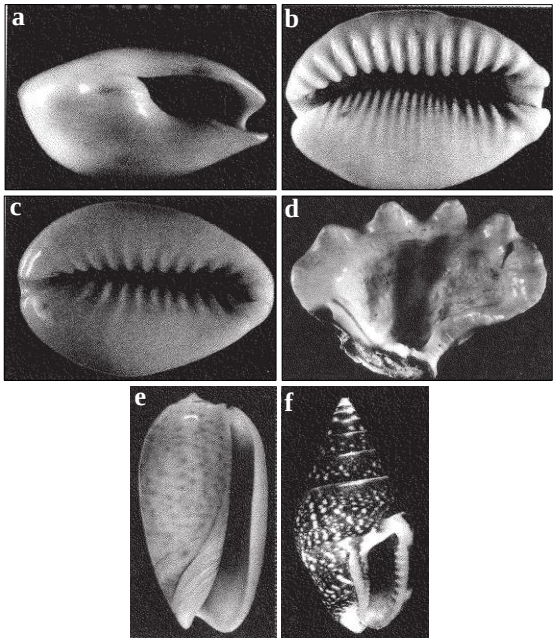


Figure (2) Shows types of snails and seashells (the nile and red sea sources) **a.** *Nassa circumcincta*, **b.** *Cypraea caurica*, **c.** *Cypraea annulus*, **d.** *Tridacna mutica*, **e.** *Oliva inflate*, **f.** *Mitra maculosa* (*After: Dubiel, 2008*) [7]

## 3. The Environment of Seashells and Snails

The question now is, "did the Egyptian environment allow the presence of snails and mollusks?". To answer this question, it is necessary to shed light on the nature of these mollusks and the appropriate environment for their living. Most mollusks are animals that live in shallow waters near shores, great depths, or rivers [7]. There were special environments in Egypt in which oysters or snails were abundant. The Red sea and the surrounding areas were among the most suitable environments for the presence of these mollusks [4]. The Red sea is characterized by a wealthy marine life and unique coral reefs that are considered the world's

best example of coral reef topography [7]. Mollusca represents one of the most species-rich phyla in the animal kingdom, with 50,000 described species of mollusks, about 30,000 of which are found in marine environments, especially coral shells. Species of *Cerithiidae*, *Strombidae*, gastropod snails, and shells were found on the western shore of the Red sea's Gulf of Suez, fig. (3-a ) [8]. In the Nile, oysters were also collected, especially the *Spatha illiquid* type and other larger species, such as the bivalve mussel [9]. The types of these Oyster shells and snails were found in several locations far from water sources, indicating the presence of many climatic changes and geological evidence that occurred on the land of Egypt [7]. Thus, we can say that the ancient Egyptian environment allowed the existence of such mollusks. Sea mollusk shells reached Maadi only occasionally, probably through commercial exchange. Since they were used mostly as pendants, bracelets, decorations of robes, or bags, most had holes. Larger shells (*Tridacna maxima* and *Tridacna squamosa*) from the Gulf of Suez and the Red sea were used as vessels. Several of them were found in Maadi [6]. There were more than 200 looted archaeological features of mud brick in Abusir. In their composition, some materials were observed, such as mollusk shells. It was also noted that mud plaster and layers covering and filling tombs and shafts contained this mixture of shells and snails; four species of gastropods and five species of bivalves were identified. The source of these snails and shells could be the Lake of Abusir, irrigation channels, or the slower flowing part of the Old Kingdom in the west branch of the Nile [10]. This is evidence of the presence of snails and shells in Egypt at several sites either south or north, fig. (3-c).

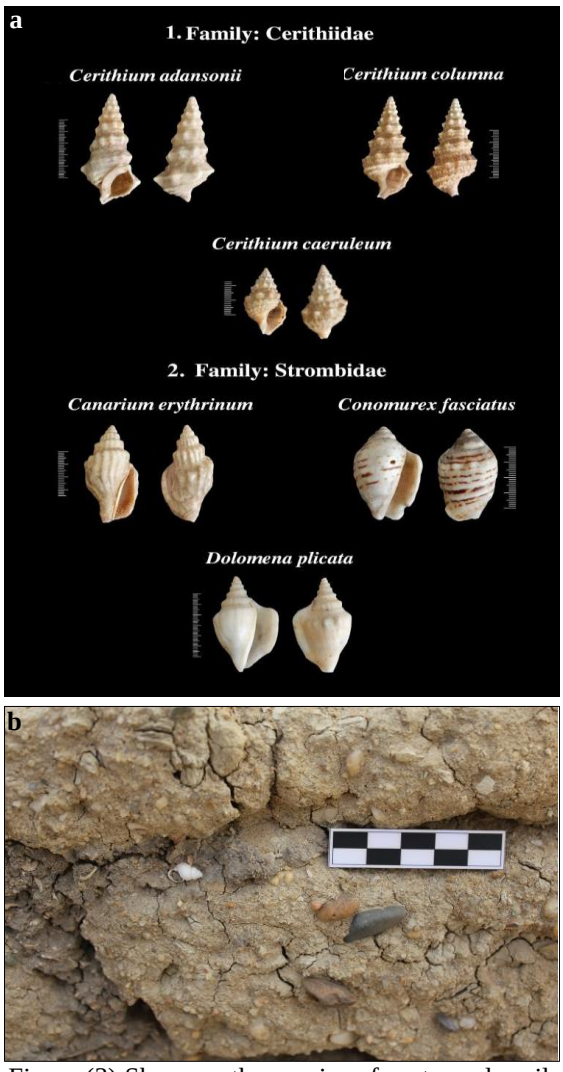


Figure (3) Shows **a.** the species of gastropod snails and shells collected from Ain El-Sokhna region: Families Cerithiidae and Strombidae (*After: Dubiel, 2008*) [8], **b.** the mollusk shell in situ in the mud mortar of Neferinpu's Tomb in Aubsir (AS 37) (*After: Hayes, 1964*) [10].

## 4. The Manufacturing of Seashells

The Egyptian environment provided several types of mollusks. In the Maadi region, many types of oysters were found from the Nile and used to manufacture adornment during the Neolithic period [9]. Shells and snails were found in many sites in Egypt. In the Sinai Peninsula, five sites of seashell gatherings were found, containing more than 5,000 oyster shells and fragments from the

pre-pottery Neolithic period B (9200-7800 years ago). It illustrates the nature of the social and economic structure of the PPNB period in South Sinai. There might be a kind of exchange and swap of seashells for crops at that time between South Sinai and the communities of the PPNB period within the eastern Mediterranean regions, fig. (4-a) [11]. Goalni explained how shells were among the most important objects used in trading, making them an important element as evidence of trade contacts with other regions [3]. In Rabsha Mount in Sinai, about 150 meters from the Village of Al-Mahd, a total of 139 oyster shells and about 27 crushed remains shells were found. The types of shells found varied between *Cypraea* and *Lambis truncata*, and many half-shells were found. Many manufacturing signs were shown on all types in the same way of treatment, i.e., "removing the back". It was noted that there were no complete shells at the site; there might be a workshop for manufacturing in this place, fig. (4-b) [11]. Manufacturing shells is considered an ancient tradition dating back to the Paleolithic time. The *cowries* were one of the most widely used shell species for this purpose. They were brought from the Red sea and the Mediterranean. *Cowries* shells were found in sites all over Sinai, Palestine, and Jordan [3]. They were widely used in the manufacture by scraping or removing the backs either by scraping or sawing and eroding the rough surface to become smooth to be used as pendants, bead amulets, necklaces, or bracelets, fig. (4-c) [3]. Many shells were found in Naqada, in a place that can be considered a workshop that included fragments of ostrich eggs and large snails of bivalves of the type living in rivers [2]. As for seashell methods and stages of making, the manufacturing methods differed according to the purpose of use. Mekawy illustrated the following stages for making the shell amulets: The selection of the raw material; cutting by separating the two valves; shaping by totally removing the limestone periostracum to expose the mother-of-pearl coating, and polishing the edges and surface of the valve, taking a circular shape; piercing the holes at the hinge [12].

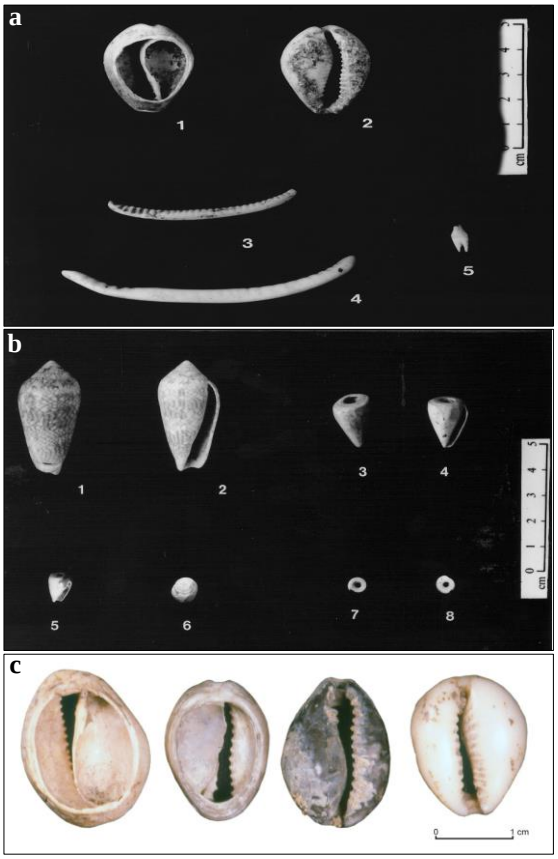


Figure (4) Shows **a.** the technology of manufacturing mollusk oysters, Sinai, Neolithic period, **b.** the types of spiral or conical shells, pierced at the top and carved or scraped from the sides, Sinai, Neolithic age (*After: Mayer, 1997*) [11], **c.** cowrie shells with cut off or ground down dorsum (*After: Goalni, 2014*) [3].

## 5. Uses and Purposes of Shells

There were many images of the use of snails and seashells in ancient Egypt from prehistoric times. This use expanded to include daily life use, funerary, and religious aspects. Bivalve shells were versatile in ancient Egypt. They were utilized as cosmetics containers, incense burners, offering plates, and musical instruments. They were

added to many medical recipes and worn as jewelry by people and animals. Natural bivalve shells were also used as ready-made palettes. Some bivalve shells were discovered with traces of various colors of pigments, such as red, black, and white [13]. The article illustrates different uses of seashells and the employment of every part of this mollusk animal to serve a purpose in life, such as food, beliefs, and personal adornment.

## 6. The Daily Use of Shells

### 6.1. *Using shells as jewelry*

The history of jewelry dates to prehistoric times when early Egyptians wore shells, bone, wood, pebbles, animal skin, and feathers as adornments or amulets. Early Egyptians used these materials for body decoration for thousands of years. Shells were one of the most important ornamental elements. *Cowrie* was the common shell used for this purpose [3]. Shells and beads were used for personal adornment and played a very important role for both men and women alike. Jewelry was linked, in general, with human history from ancient times, either for adornment, ideological reasons, or both. It was not limited to women without men but was worn by both men and women [7]. It varied and included earrings, bracelets, anklets, and rings of different materials, such as stone, gold, and seashell [14]. Red seashells were the most useful in manufacturing amulets and ornaments [9]. The ancient Egyptians became more interested in making jewelry from the early Neolithic period. They did not make jewelry to decorate only bodies but to be blessed with, especially the amulets [15]. Many pierced seashells were found in eight Tasian and Badarian graves, suggesting that the shell genera from both grave groups were similarly perforated. In both burial units, *Ancillaria* and *Conus* shells were perforated by removing (part of) the spire. This procedure resulted in the creation of a hole in the posterior end of the shell, which, together with the aperture of the shell, enabled the shell to be strung through its naturally dissolved interior. The *Nerita* shells from both grave groups were also threaded using the aperture and dissolved interior, but the hole was created in the body whorl, located, in a ventral view, on the left lateral side of the shell near its posterior end, just below the apex, fig. (5-a & b) [15].

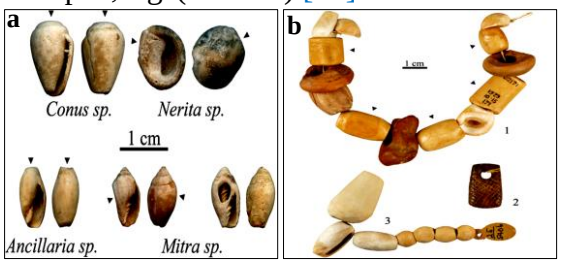


Figure (5) Shows **a.** the perforation locations of several shell genera from Badarian graves, **b.** beads, pendants, and shells from Badarian graves 1215 (*After: Horn, 2017*) [15].

### 6.2. *Using shells as a food source*

Oysters and seashells were one of the oldest natural materials used by humans as a food source [3]. The evidence of human exploitation of these sea creatures and their shells was found geographically on the coasts and shores of warm seas over time. This abundance of shells and snails depended on using them as a source of food from prehistoric times [1]. The pre-neolithic hunter-gatherers of the Egyptian Nile valley collected *Unio abyssinicus* as food, but this mussel became extinct in the Nile in Holocene times. People might switch to *Chambardia* as food [2]. Thus, the ancient Egyptians used all the natural resources. They collected, used, and employed snails for various purposes. They benefited from them in their food and tools [1]. Snails were part of the organisms that humans relied on for food from prehistoric times, as proved by the large number of remnants found by snails and shells [1]. Seashells and snails were frequently found in food waste in many coastal sites near water sources, especially from the middle of the Neolithic period [1]. In the Naqada site, many remains of large freshwater bivalve

shells and snails were found [2]. These mollusks might have been eaten before their shells were used. Perhaps the first hunter-gatherers in the Nile Valley used them as food during prehistoric times. People might have turned to another kind of snail, i.e., *Chambardia* and the *naiad*, which was also used as food. These types of snails were collected from ponds and swamps, especially during the Greek period. Hence, a pond near Giza was famous for this type of snail, a type of bivalve mollusk that lived in the mud and was eaten [2]. But what is the evidence that the remains of shells found in some sites referred to the remains of food? It is necessary to know that seashells and snails contain a high percentage of calcium carbonate. The accumulation of shells leads to a chemical reaction, which turns the soil into alkaline soil. This alkaline soil worked to preserve the archaeological finds, which helped the scientists determine the nature of these seashells and whether these were remains of food or remains of product manufacturing [1]. This chemical reaction also kept the burial conditions because of the alkaline soil, which slowed down the erosion and decomposition of organic matter [1]. Evidence for the presence of oyster shells was found in several sites along the Red Sea coast, whether in Marina Gawasis, Wadi al-Jarf, or Ain Sukhna, during the old kingdom (about 2613-2181 BC), the middle kingdom (2040-1782 BC), the new kingdom (about 1570-1069 BC), and the late period (525-332 BC), indicating the continued use of oysters until the end of the Ptolemaic period [16]. Large quantities of shells, snails, mussels, and fish were found in the Ptolemaic layers, indicating that these mollusks were used as food and a source of meat in these areas at the time [16]. Most oyster shells retained signs of burns on their outer surfaces, indicating that they were placed directly on the burning coals, as a method used today by "El-Ababda nomads", especially with a species of these shells known as *Strombus tricorn*, more than other kinds [16]. In the history of our food, fish, shellfish, and mollusks have played an important role in our menu and beliefs. Although it considered fish a source of food, it was associated with evil. Fish was known for its negative reputation from early times because of its smile and short shelf life. In Ancient Egypt, poor farmers ate fish dried, salted, or smoked, but they did not use it in ritual sacrifice. They didn't give it to the dead as an offering in the afterlife [17]. Perhaps this belief applies to shells as well because of their smells.

### 6.3. *Shells as containers for colors*

Shells were generally used as containers or pots in many prehistoric sites. Using shells as containers for preserving colors was one of the early uses of shells during the Middle Stone Age, especially in Africa. A lot of perforated and colored shells were found in many prehistoric sites; some had traces of colors inside. Such shells were found during the middle Paleolithic age in south Africa and the middle Paleolithic age in the Maghreb and the ancient near east [18]. In Blombos cave in South Africa, the remains of red ocher powder were found in many shells. Ocher might be used to prepare dyes by grinding them, and shells were used for storage [19]. Such colored shells were also found at other sites dating to the middle Paleolithic connected with Neanderthals in Iberia, Spain, dating back to approximately 50,000 years ago. They were found along with blocks of yellow and red stones, and traces of red remains were preserved inside the seashell, fig. (6) [18]. By upper Sebilian or Late Glacial times (16,000-10,000 B.C.), discovered hearts were ringed with lumps of ochreous clay and opened shells of freshwater mollusks, shells pierced with holes to be taken as a cosmetics palette, fragments of red ochre coloring matter [9]. In Maadi cemetery, *Aspatharia* shells were found in 2 graves

(MA2, MA4). These could be served as containers for pigments or other cosmetics. Grave MA 36 contained fragments of a cord and a mat placed near the forehead of the body [6]. The preserved elements could be part of a container or a form of ornament. Also, in the cemetery in Wadi Digla *Aspatharia (spathopsis), rubens* shells accompanied pottery and stone vessels. The shells were probably used as cosmetic containers, as suggested by the presence of the remains of a powdered dark gray color. In Wadi Digla, the equipment buried with the dead had various types of offerings, such as Nile shells (used for mixing pigments) and colored stone [9]. It was found in shells from grave WD48. In graves WD88 and WD98, shells with powdered manganese ore were found [6]. In Ancient Egypt, the usage of shells evolved. Natural *Bivalve* shells were utilized as ready-made palettes by the scribes [13].


Figure (6) Shows perforated and colored seashells - Middle Paleolithic, Iberia, Spain (*After: Zilhão, et al., 2009*) [18].

### 6.4. *Shells as spoons and scoops*

Some kinds of shells, such as Aspatharia rubens shells, were used as containers for cosmetics or as a material for manufacturing pendants and spoons [6]. At the settlement of A-group, the Neolithic Fayum, in Kom W, rubbish with sherds, shells, and freshwater mussels were gathered from the lake as food, and their shells, especially those of *Spatha cailliaudi*, were used as scoops or ladles [9]. In Merimda, shells were used as scoops or ladles in the kitchen of the settlement and were occasionally serrated around the edges for use as fish *scalers* in much the same fashion as found in the Fayum [9]. The people of El-Omari used ostrich eggshells as containers and even as cook pots and mollusk shells, especially those of Unio and Spatha, as scoops and receptacles [9]. Red sea bivalves, gastropod shells, and freshwater valves imported from the Nile were worked at Wadi Gawasis to produce fine spoon-shaped objects whose use was probably connected with cosmetics preparation [1]. Eight spoon-shaped shells were found in Mersa Gawasis, fig. (5-b). Their actual function was uncertain but found at the site. These "spoons" were carved in the valve or last whorl of mollusk shells and carefully smoothed on the edges, confirmed by trace analysis. These might have been involved in some cosmetic activity rather than in meal consumption, although no trace of pigment has been observed. Five of the shell used as "spoons" (7-12 cm in length) from Mersa Gawasis were made from the nacreous valves of large freshwater bivalves of the *Mutelidae* family dating to the late 3$^{rd}$ to mid- 2$^{nd}$ millennium BC- (this could be applied to prehistoric times). Such data demonstrate that freshwater shells were carried into the coastal site from the Nile or other East African rivers, fig. (7) [1].

Figure (7) Shows spoon-shaped shell articles from Wadi Gawasis carved from a freshwater bivalve (*After: Carannante, et al., 2014*) [1].

### 6.5. *Shells as a source of white color*

The white color was obtained from limestone and sometimes from shells, mollusks, and snails that, according to geological nature, contained varying amounts of silica and pure limestone. The cleaned oysters could be reused in several applications. The principal component (approximately 96%) of oyster shells is calcium carbonate ($CaCO_3$), which can be used in various sectors, e.g., the construction industry, as an aggregate of limestone for cement, and even the pharmaceutical industry, as a calcium-enriched supplement [20]. It is composed of calcium carbonate ($CaCO_3$) from which a white powder such as gypsum, chalk, and other pigments used for coloring and drawing in rock art is extracted [19]. Calcium carbonate is the most common white color. It has already been used since the predynastic period. Blom-böer highlighted the importance of calcium carbonate, considered the most common white. It can be enhanced with an underlying layer of magnesium calcite, of which huntite is the most significant pigment. Huntite can be used alone and as a part of a compound and is ideal as it has a strong 'color' and excellent adhesive qualities. Virtually all these whites were originally shells (geologically speaking), but the Egyptians also used crushed shells for white and other pigments [21]. So, the source of the white color at that time was the product of crushed shells, which were ground to obtain the white color [21]. Goalni emphasized that shells were one of the earliest natural materials used by man. Shells were often exploited as a food source, whereas whole or crushed shells were used as building materials, made into vessels, tools, and other implements. They were used as a medium of exchange and offerings and were also traded, making them an important part of the evidence for the existence of trade contacts with other regions [3]. Shells were utilized as a source of raw material for many purposes. Snails were used to extract dyes in many sites of the ancient Near East, especially Mesopotamia. They were broken from their upper part, and the liquid obtained from them, often yellowish one, was preserved in stone jars [22].

### 6.6. *Using shells as a raw material for making pottery*

It is noteworthy that the lower Egyptian pottery was predominantly made of alluvial Nile clay tempered with the mineral temper of sand or crushed stones, as well as with the organic temper of straw, chaff, and dung. In some cases, sand or chaff was replaced by crushed shells like what was found in Buto [6]. Many vessels made of Nile clay were tempered with crushed shells in the settlement of Buto. Shells registered in Buto included *Aspatharia rubens* shells, possibly used as cosmetic containers and drilled-through seashells. Also, large quantities of the first fin rays of *Synodontis* were found and were used as harpoons or arrowheads [6].

### 6.7. *Using shells as lamps*

Shells were also used as a means of lighting. A large Tridacna valve was filled with fuel and utilized as a lamp, as attested by the different burning colors inside the shell [17]. Carannate studied many kinds of shells at Mersa Gawasis from the late 3$^{rd}$ to the mid-2$^{nd}$ millennium B.C. One unique discovery was a large valve of a Tridacna shell (~18 cm in length), showing clear evidence of burning only on the inner side. This shell was found near the entrance of an artificial cave. Traces of intense biofouling activities indicated that this shell was collected after the death of the mollusk. The center of the inner side of the valve was characterized by a reddish-burning color surrounded by a black band. Some fringes, coinciding with undulations of the valve edge, showed calcination in white, indicating where the highest temperatures were reached. Such different burning colorations suggested, according to Carannate,

that the Tridacna valve was filled with fuel and used as a lamp, probably to illuminate the cave nearby, fig. (8) [1]. - So, the same use of shells as the lamp was perhaps known in Egypt during prehistoric times after knowing the fire.

Figure (8) Shows tridacna valve lamp from Wadi Gawasis.

### 6.8. *Other daily uses of shells*

In general, using seashells in prehistoric times was varied. Some seashells were used as a horn or tool to amplify sound. For example, ancient Europeans made a horn out of a large seashell and blew musical notes roughly 18,000 years ago. In ancient and modern cultures, seashells have served as musical instruments, calling or signaling devices, and sacred or magical objects [23]. There were many other daily uses of shells in ancient Egypt from the early times. They were used as incense burners, offering plates, and musical instruments. These were added to many medical recipes [7], like abdominal pain or skin inflammation [7]. Calcite ($CaCO_3$), was used as a powder for mixtures of eye treatments [24]. Seashells were considered a source of calcium, so they were used as a dietary supplement for cases of calcium deficiency in the body and the treatment of cases of softness and osteoporosis.

## 7. The Religious Role of Shells

Humans have utilized mollusks for countless material and spiritual ends and religious practices. Shells played a major role in religion from prehistoric times. Cowry shells had powerful symbolism (basically sexual, for these were, first and foremost, female symbols) [18]. The presence of shells in prehistoric burial places indicated that their symbolic power was believed to continue beyond life.

### 7.1. *The symbolism of shells*

Shells were connected with fertility from the Paleolithic age. The early man believed that the mother was the only factor in childbirth and was ignorant of paternity in its biological meaning. Therefore, people looked at the shells with a special view of their similarity with the female's genitals [25]. They sanctified shells for this reason and became interested in bringing and carrying them as a symbol of life. They thought that shells could preserve humans in permanent health, protect them from diseases, and extend their life even after death because death was thought of as another life that also needed something to save it. By that time, humans began to make gold in the form of a shell and use them as an amulet [25]. The *cowries* shells had a symbolic meaning in most ancient cultures. They were sexually significant, especially in Egypt and the Levant. This type of shell was connected in particular with females. Goalni emphasized the symbolism of this type of shell and compared its lower part with a longitudinal opening associated with the uterus. He also linked it with the staring eye, so the common interpretation of using cowries as amulets intended to protect against infertility, increase fertility, prevent the evil eye, and give good luck. The symbolic use of *Cowries* appeared during the Neolithic period. It was connected with fertility and protection due to its similarity with the uterus [3]. Using *Cowries* as amulets for this purpose is still known in some primitive tribes. *Cowrie* shells were found in several female tombs and graves of young girls from predynastic times. Goalni indicated that this shell, in general, was symbolically associated with protection and regeneration, especially among the Sumerians and Babylonians. They

were connected with pregnancy and the act of giving life, so they were considered a symbol of rebirth in the afterlife [3]. Some societies believed that shells and snails bring good omens and good luck, so they were considered the cause of happiness for those adorned with them, as it was believed that the shell was a symbol of women's fertility [26]. Therefore, it was thought to bring fertility to the woman who carried it. For instance, in southern India, seashells were connected with prediction and astrology. As for the ancient Moche civilization in Peru in South America, the snail was painted with artistic forms. There was a strong belief that these snails prevented the evil and the envious bad eye. Consequently, men, women, and children were adorned with them. Animals, such as horses and camels, were adorned with snails, especially by Pastoral tribes in western Sudan. Daily practices, such as believing in good luck, good omen, and preventing evil, prevailed in many primitive societies [1]. Thus, shells had an important role in preventing the evil soul. People believed in the effecttiveness of shells as amulets in preventing "bad magic" and "bad luck". The shell might be expressed about returning the soul to life because of the shape of its following spiral lines expressed about the spiritual, vitality, and growth. Its geometric decorations were similar to metaphysical art, so the shell was a source of protection for the vulnerable parts of the body from evil forces [27]. Jewelry turned into a moral idea rather than decoration, as shown not only in Egypt but in various other civilizations like Indonesia. For example, the cowrie shell was a symbolic being because of its similarity with the uterus, which could hide a pearl (a symbol of good luck). The mussel shell appeared in some artificial works. It was considered a symbol of fertility [27]. In Europe, mussels symbolized the secrets of the sea [27]. Shells had religious and magical significance by protecting the wearer from harm. People used shells in magic and astrology, reading the future, and treating some spiritual diseases [22].

### 7.2. *Shells as amulets*

In ancient Egypt, amulets were integrated with spells like the forces of nature; therefore, amulets were sometimes buried with the deceased to protect them in the afterlife. They were also used to protect an alive person. There were also temporary amulets for childbirth, disease, or travel purposes [24]. The Egyptian museum has shells made of gold dating to the first dynasty [25]. We know that the shell is fragile and easy to break, so the ancient Egyptians thought to make shells out of stone or metal like gold because of its symbolism [25]. The ancient Egyptians found gold mines in the Red Sea and made small beads and amulets in the form of shells instead of making them out of stone. Then, over the years, the positive energy of shells turned to the gold itself and was considered amulets for health and immortality [25]. They had a religious and magical significance by protecting the wearer from harm [7]. Many inscribed shells were found in several burials, and some were perforated to be hung as an amulet for girls to protect them and enhance reproductive ability [14]. - Shells in some cultures have been used as amulets, good luck charms, as well as symbols for love, fertility, and eternal life.

## 8. The Funerary Role of Shells

Shells had a religious and funeral role not only in Egypt but also in the Near East, in the Levant. For example, during the Neolithic period, Cowries shells were used as a replacement eye for the plastered human skulls regarding ancestor worship during the Neolithic time [3]. So, shells were used instead of the eyes of the dead skull because of the shape of the opening lower part, which looked like the open eyes. Perhaps this indicated the thought of rebirth and returning to life [28]. In Egypt, seashells had a very important funerary role from prehistoric times. Seashells were placed in tombs with

the deceased to offer them protection in the afterlife. Shells were found in many Neolithic burials and placed with the deceased, accompanied by pottery and personal tools, as evidenced by their funerary use at that time [29]. In Jebel Ramla cemetery in the western desert in southern Egypt, many shells were found with the dead in their tombs. They were used as a kind of ornaments dated to the end of the Neolithic time [30].

### 8.1. *Grave No.1*

On the top of this grave pit, a large palette made of granite was recorded, accompanied by two red seashells of *Cypraea pantherina* and a piece of red ochre. No human bones were preserved. Palette is rectangular with rounded corners [31]. On one of its surfaces, traces of red colorant was visible. *Cypraea pantherina* shells were partially eroded and modified the same way: the natural entrance to the shell was broadened by the partial removal of the denticulated edge, fig. (9-a) One shell served as a container for malachite colorant, fig. (9-b), its traces are still visible [31].

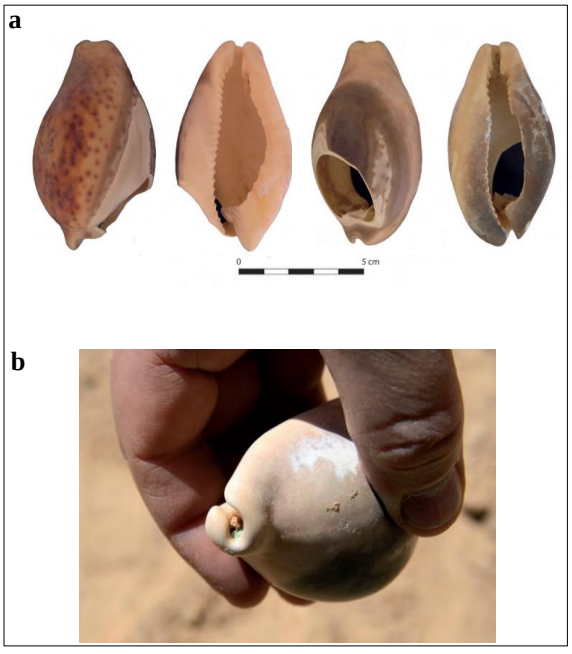


Figure (9) Shows **a.** shells of *Cypraea pantherine*, **b.** malachite in a shell of *Cypraea pantherine in* grave No. 1 (*After: Czekaj-Zastawny & Kabacinski, 2015)* [31].

### 8.2. *Grave No. 2*

It lies about ca. 1.5 m. north of grave 1. It was destroyed by deflation, and neither the grave pit nor human bones were preserved. It was identified by the presence of another *Cypraea pantherina* shell recorded on the surface. The shell itself was heavily eroded, and only the surface with the modified entrance survived, fig. (10) [31]. In burial 8, a perforated shell of the red sea *Nerita* sp. snail was recorded. In the other three graves (no$_s$. 23, 24 & 25), fragments of small bivalves, most likely from the Nile, were discovered. However, red ochre was almost present in every burial. Lumps of this mineral, various in size, were present around and among the bones. In four burials, single, small pieces of limonite were recorded, in all cases, near the head of the deceased on the left side. In burial no. 23, a fragment of malachite was present together with a bivalve. The shells were from the red sea and Nile mollusks and bivalves) [32]. In the Tigris Valley in Egypt, shells were found abundantly among funerary items in several tombs in the cemetery of the predynastic period. The Nile shells were among the most important kind there and were used as containers for mixing dyes, unlike other models that were used in the ornaments [9]. In the older graves from the Wadi Digla necropolis, shells were common. Some of them, including large shells of *Aspatharia rubens*, were used as containers for pigments. Shells were deposited in the grave near the head or the upper part of the body. Shells of sea snails *Nerita polita* and *Ancilla acuminata* were used as beads. Bracelets made of tens of drilled shells were found [6]. Another function of the shells could be linked to specific burial customs. Like in Heliopolis, and Wadi Digla cemetery, in two graves (WD98, WD 180), shells were deposited near the deceased's mouth. It is hard to determine the real purpose of these shells; there is no clear reason for their existence. Shells were deposited near the head and, in two cases,

near the pelvis. An analysis of the dating of shell--containing graves showed that this custom was observed in the older phase of the cemetery and was abandoned in the second phase [6]. In the cemetery of Maadi south (Wadi Digla), a shell bracelet was found in position on the wrist of a skeleton, and a Nile mollusk shell was placed over the mouth of one of the deceased [9]. In Tasian and Badarian burials, shells were similarly located in various positions on and off the body of the deceased. These positions did not appear to be correlated with particular genera and could include shells with various characteristics [15]. Beads and shells in the Badarian civilization were usually worn as necklaces by women, children, and men. Shells and beads were found in many tombs; for instance, one young child had a circle of two rows of shells (5733). In two graves, only anklets were noticed; a young child had two shells, one at each foot (5134), and a woman with shells and pendants (5738) [33]. Perhaps the placement of shells here was associated with the idea of returning to life after death, especially since shells were mythically associated with fertility and childbirth.

Figure (10) Shows shell of *Cypraea pantherine* in grave No. 2 (*After: Czekaj-Zastawny & Kabacinski, 2015)* [31].

## 9. Results

Seashells were known from prehistoric times. They had a very important role in life, thoughts, and death. Shells were used in ornaments as jewelry, which were considered a symbol of protection from the evil eye because of their similarity with the shape of the eye. Shells were also used as a means of social exchange or swap and were commonly used as a commercial exchange. Shells also had funerary importance. Many shells were found in several tombs during the Neolithic period. However, they have had an ideological significance in many primitive tribes. - In Africa, for example, shell fetishes were often used in worship as a "fetish". Ceremonial garbs were often decorated with shells and used in religious ceremonies.

## 10. Discussion

The research paper highlighted seashells in Egypt, especially during prehistoric times, by illustrating their daily and funerary uses. Carannante pointed to the marine resource exploitation in Mersa/Wadi Gawasis (Red Sea, Egypt) from the late 3$^{rd}$ to mid-2$^{nd}$ millennium BC and many kinds of the Red Sea and river shells and their different uses [1]. Dubiel reported the types and kinds of mollusks known in ancient Egypt and their main uses [7]. Marwan illustrated their uses as Palettes in ancient Egypt [13]. Frutiger discussed the symbols of their design and meaning [27]. The author tried to collect all these opinions to analyze the functions of seashells and their importance in ancient Egyptian life during prehistoric times through daily life uses and funerary uses and illustrated their role in thoughts and symbols.

## 11. Conclusion

*Shells were used as natural materials for making ornaments and raw materials for making tools and pottery. They were also considered an important source of food during prehistoric times. They were sometimes used as a source of white color because of their composition. They were used as containers for color and sometimes as a source for pigments. Moreover, shells were used in many daily uses, such as spoons, lamps, and palettes for colors. The Conch was used in some ancient civilizations as a blowing*

*machine or a horn in many sites during prehistoric times. Shells were used for commercial exchange and were important evidence of commercial contacts between Egypt and neighboring regions. Early people thought that woman was the only origin of childbirth, and her uterus was the origin of life. Therefore, the shells became a symbol of life and fertility because of their similarity with the uterus. By that time, the shell became an amulet of fertility and growth. They confirmed pregnancy and childbirth and protected against infertility. In ancient Egypt, seashells, and their imitations, which were made from semi-precious and even precious stone and metal, were worn by the living to protect them from harm. Shells had funerary importance. They were found in various Egyptian tombs since the Neolithic period. In Sudan, shells have been placed over the tombs to protect the dead. These shells were then placed in tombs where they accompanied the deceased and continued to offer them protection in the afterlife. These shells gave the deceased a symbolic power to help in the rebirth as a kind of blessing. Shells are like the half-open or staring human eye, so these may have been used to protect man against evil forces and prevent the evil eye in life or the afterlife. So, the early man thought that wearing or carrying more shells gave more protection to their owner, so people cared for them to gain magical abilities and protection. Over time, the ancient Egyptians used shells for many purposes, such as protection, especially for women and children, to protect them from evil spirits. Shells have played an important role in divination and astrology since ancient times. Sails and shells have been used with sand in astrology and predicting the future in many primitive tribes. Seashells were used as cosmetic containers and placed in burials as offerings.*

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