More than people and pots: identity and regionalization in Ancient Egypt during the second intermediate period, ca. 1775-1550 BC

Sacco, A.

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MATERIALS

This chapter introduces the materials used to manufacture the objects, made during the Late Middle Kingdom and the Second Intermediate Period, examined in the present work. These materials are important, for two main reasons. The first reason is that, in the analysis conducted in the present work, materials are part of what defines a type, which is made of both the shape and the material of an object. Consequently, two objects having the same shape, but being made of different materials, are two different types. The second reason is that, as it will be further shown in the relative chapter, analysing the distribution of materials and of the objects made of them can help understand better the relationships between the sites.

Before proceeding, it should be clarified that in the present work, because this focuses on Egypt, for the Eastern Desert is considered only the Egyptian part, not the Nubian part. Therefore, the central part of the Eastern Desert is considered the one in Middle Egypt, while its southern part is considered the one in southern Upper Egypt.

GEMSTONES

The first category of materials introduced in the present chapter are gemstones, which are pieces of minerals, namely strong chemical compounds naturally occurring in pure form, that can be cut and worked to make jewellery or other adornments. Therefore, in this section the minerals forming these gemstones are described. Most of the gemstones mentioned in the present work are based or at least contain quartz, which is a mineral composed of silica and oxygen. Therefore, in this section quartz-based gemstones have been separated from the other ones.

Quartz-based gemstones

Quartz-based gemstones include amethyst, rock crystal, carnelian, agate, and jasper. Quartz is a mineral composed of silica and oxygen. It can be translu-

cent or opaque and acquires a milky colour when it has many cavities that get filled with water. It is widely found along the Nile Valley.[1]

Rock crystal, also called quartz crystal, is a transparent variety of quartz. Its sources are in the Western Desert between the oases of Fayyum and Bahariya, and in the Sinai.[2]

Amethyst is a transparent, purple variety of quartz. It can be found in the Eastern Desert in southern Upper Egypt, in Middle Egypt, as well as between the latitudes of Assiut and Aswan. In detail, quarries are known in Wadi Abu Had, at Abu Diyeiba near Wadi Waseef, in and near Wadi el-Hudi (respectively numbers 15, 21, 36 on Map 1).[3]

Carnelian is a variety of chalcedony, a type of quartz mixed with moganite, which is a mineral like quartz and made of silica and oxygen. Carnelian is translucent and its colour varies from medium orange to brownish red, due to impurities of iron oxide. Carnelian was mined in the Western Desert at Stela Ridge, near Gebel el-Asr in the area of Abu Simbel, as well as in the Eastern Desert, in the area of Wadi Abu Gerida and in Wadi Saga, both at the latitude of the Theban area (respectively numbers 38, 39, 20, 26 on Map 1).[4]

Agate is an opaque variety chalcedony, made of concentric or, less often, horizontal bands. It is monochrome or multicoloured with colour varying from white to brown, depending on the amount of iron dioxide impurities it contains. It is attested in the Eastern Desert in Wadi Abu Gerida (number 20 on Map 1), though it can be commonly found on the surface in the form of pebbles.[5]

Jasper, known also as chert, is an opaque variety of chalcedony or of quartz containing impurities such as iron and, due to these impurities, varying in colour mostly from red to yellow, brown, and green. A deposit is known in Wadi Hameda, in the Eastern Desert north of the area of Thebes (number 22 on Map 1).[6]

Other types of gemstones

Other types of gemstones include green feldspar, garnet, haematite, and turquoise. Green feldspar, also called amazonite, is an aluminosilicate, namely a mineral made of aluminium and silica and oxygen, which are combined with potassium. It varies from opaque to translucent, and from light green to bluish-green. Its sources are in the Eastern Desert in southern Upper Egypt,

1 B.G. Aston 1994, 65; Aston, Harrell, and Shaw 2000, 51–52; Lucas 1948, 459–60.
2 B.G. Aston 1994, 64–65; Aston, Harrell, and Shaw 2000, 50–53; Lucas 1948, 459–60.
3 B.G. Aston 1994, 66–67; Aston, Harrell, and Shaw 2000, 50–52; Lucas 1948, 445.
4 B.G. Aston 1994, 67–68; Aston, Harrell, and Shaw 2000, 26–27; Lucas 1948, 448.
5 B.G. Aston 1994, 68–69; Aston, Harrell, and Shaw 2000, 26; Lucas 1948, 442–43.
6 B.G. Aston 1994, 69–71; Aston, Harrell, and Shaw 2000, 29–30; Lucas 1948, 454–55.

at latitudes between south of Thebes and south of Edfu. Quarries are known in Wadi Abu Muawad, at Gebel Migif, in Wadi Fayrouz, at Gebel Hafafit, and in Wadi Gemal (respectively numbers 27, 31, 34 on Map 1).[7]

Garnet is an aluminosilicate that can be combined with magnesium, iron, or calcium. It varies from transparent to opaque and occurs in all colours except for blue. It is found in many parts of Egypt, going from the Sinai to the southern Eastern Desert, especially in the areas of Wadi Gemal, Wadi Sikait, and Gebel Mitiq (respectively numbers 34, 33, 25 and on Map 1), to the area of Kom Ombo.[8]

Haematite is an iron oxide; in other words, it is composed of iron and oxygen. It is opaque and its colour varies from metal black-grey to reddish brown. Though haematite was widely found in Egypt, deposits where it could be extracted are located in the Eastern Desert at Gebel Abu Marwat and in Wadi Dib, in the southern part of Middle Egypt, as well as in Wadi Abu Gerida and in Wadi Saga, at the latitudes of the Theban area (respectively numbers 16, 14, 20, 26 on Map 1).[9]

Turquoise is a hydrated phosphate of copper and aluminium, in other words it is made of phosphorus, oxygen and hydrogen combined with water and with copper and aluminium. It is opaque and its colour varies from light green to light blue. It was mined in the Sinai at Serabit el-Khadim, in Wadi Umm Themaim, and at Gebel Maghara (respectively numbers 1 and 2 on Map 1).[10]

ROCKS

The second category of materials included in the present work include rocks, which are divided into sedimentary, metamorphic, volcanic, and plutonic.

Sedimentary rocks

Sedimentary rocks originate from the deposition of mineral or organic particles on the floor of oceans or other bodies of water. They include limestone, siltstone, travertine, calcite-alabaster, anhydrite, and sedimentary quartzite. Limestone is made mostly of calcite plus dolomite, or quartz, or aluminosilicate, or iron oxide. Calcite is calcium carbonate, thus it is made of calcium and carbon and oxygen, while dolomite is magnesium carbonate, thus it is made of magnesium and carbon and oxygen, and aluminosilicate is made of aluminium and silica and oxygen. Limestone is opaque and its colour varies

7 Aston, Harrell, and Shaw 2000, 45–46; Lucas 1948, 450–51.
8 Aston, Harrell, and Shaw 2000, 31–32; Lucas 1948, 451–52.
9 B.G. Aston 1994, 73; Aston, Harrell, and Shaw 2000, 38; Lucas 1948, 452.
10 Aston, Harrell, and Shaw 2000, 62–63; Lucas 1948, 460–61.

from almost white to grey to black. Deposits of limestone are scattered all along the Nile Valley, from Esna up to the Mediterranean coast, with at least 88 known quarries; some formations are found also in the Western Desert and in the Eastern Desert.[11]

Siltstone is composed predominantly of silt-sized particles, namely particles just slightly larger than sand grains, of quartz and feldspar, which is an aluminosilicate combined with potassium. Siltstone is opaque and its colour ranges from greenish to greyish. In Egypt it is found in the northern and central Eastern Desert, and was mined mostly in Wadi Hammamat, north of the Theban area (number 24 on Map 1).[12] This material has traditionally been called schist in Egyptology, though in the present work the denomination siltstone is preferred.

Calcite-alabaster is made of calcite and aragonite, which are types of calcium carbonate, namely minerals made of calcium, carbon, and oxygen. It is translucent and made of bands, and its colour varies from white or yellowish to brownish. It is found in Wadi Hof and in Wadi el-Garawi, near Helwan and south of Cairo, in Wadi Araba in the Eastern Desert at the same latitude of the Fayyum, as well as in Wadi Umm Argub, at el-Qawatir, in Wadi el-Barshawi, in Wadi el-Zebeida, at Hatnub, and near Wadi Assiut, all sites along the Nile Valley in Middle Egypt (respectively numbers 5, 8, 10, 11, 12, 13 on Map 1).[13] Calcite-alabaster has been traditionally called alabaster in Egyptology. Nevertheless, real alabaster is a different type of stone, described in the next paragraph. It has also been called travertine. However, it is advised to use the denomination calcite-alabaster instead of travertine.[14] Therefore, calcite-alabaster is the denomination used in the present work.

Alabaster is a type of gypsum, a soft sedimentary rock and a mineral made of calcium sulphate dihydrate, namely calcium, sulphur, oxygen, and water. It is translucent or opaque, and its colour varies from white to pink, to brownish. It can be found at Umm el-Sawan in the desert near the Fayyum, and near Wadi el-Anba'ut in the Eastern Desert north of Aswan, as well as on Ras Banas peninsula, on the Red Sea at the latitude of Aswan (respectively numbers 7, 32, 37 on Map 1).[15]

Anhydrite is a soft sedimentary stone and a mineral made of calcium sulphate, namely calcium, sulphate, and oxygen. It is vitreous and it ranges from being colourless to bluish, to violet, to greyish, to white, to pink, to reddish, to brownish. It is found between Wadi el-Imrani and Wadi Ibada on the east

11 B.G. Aston 1994, 35–39; Aston, Harrell, and Shaw 2000, 40–42; Lucas 1948, 471–72.
12 B.G. Aston 1994, 28–32; Aston, Harrell, and Shaw 2000, 57–58; Lucas 1948, 477–79.
13 B.G. Aston 1994, 42–47; Aston, Harrell, and Shaw 2000, 59–60; Lucas 1948, 447–48.
14 Klemm and Klemm 1991.
15 B.G. Aston 1994, 47–51; Aston, Harrell, and Shaw 2000, 21–22; Lucas 1948, 470–71.

bank of the Nile in Middle Egypt, though it is a secondary and probably recent deposit and therefore it is not considered in the present work, as well as near Wadi el-Anba'ut in the Eastern Desert at the latitude of Edfu, and on Ras Banas peninsula, on the Red Sea at the latitude of Aswan (respectively numbers 12, 32, 37 on Map 1).[16] This material has traditionally be called blue marble in Egyptology, but in the present work the denomination anhydrite is preferred.

Sedimentary quartzite is a form of sandstone. Sandstone is a sedimentary rock formed by sand-sized grains of rock and mineral, bonded together by cementing elements such as quartz, calcite, iron oxide, or clay. In sedimentary quartzite, the cementing elements joining the grains hold them so tightly together, that the rock breaks across the grains and not around them. It varies from fine- to coarse-grained and often also contains pebbles. Depending on the elements present, its colour varies from brown to light grey, to nearly white, sometimes including yellow, orange, red, and purple. It is found widely in the Western and in the Eastern Desert, and occasionally in the Nile Valley. Quarries are known at Gebel Ahmar, near Cairo, and between Gebel Tingara and Gebel Gulab, near Aswan (respectively numbers 4 and 35 on Map 1).[17]

Metamorphic rocks

Metamorphic rocks originate from the transformation of existing rocks due to heat or pressure. They include lapis lazuli, steatite, serpentine, and marble. Lapis lazuli is made mainly of lazurite, which is a type of aluminosilicate combined with potassium. It is opaque and blue. It is not found in Egypt, but was imported from Western Asia, where it is found mostly in Afghanistan.[18]

Steatite, also known as soapstone, is composed predominantly of talc, which is a hydrated magnesium silicate, namely a mineral composed of magnesium, silica, oxygen, and water. It is opaque and its colour varies from white to yellowish, to greenish, to reddish. It was mined in the central and southern parts of the Eastern Desert in Wadi Saqiyah, in Wadi Abu Muawad, in and near Wadi el-Humra, near Wadi Abu Qureya, in Wadi Umm Salim, at Gebel Rod el-Barram, at Gebel Salatit, in Wadi Barramiya, near Wadi Mubarak, in Wadi Sikait, in Wadi Kamoyid (respectively numbers 23, 27, 28, 33, 43 on Map 1).[19]

Serpentine is the mineral forming the hard, metamorphic rock serpentinite, and in the present work is a synonym of the latter. Serpentine is a hydrated magnesium silicate, like steatite but containing more water. It var-

16 B.G. Aston 1994, 51–53; Aston, Harrell, and Shaw 2000, 22–23; Lucas 1948, 470–71.
17 B.G. Aston 1994, 33–35; Aston, Harrell, and Shaw 2000, 53–55; Lucas 1948, 477.
18 B.G. Aston 1994, 72–73; Aston, Harrell, and Shaw 2000, 39–40; Lucas 1948, 455–56.
19 B.G. Aston 1994, 59–60; Aston, Harrell, and Shaw 2000, 58–59; Lucas 1948, 479–80.

ies from opaque to translucent and from greenish to yellowish, to white, to brownish, to grey, to black. It is widely present in the Eastern Desert and was predominantly mined between the Theban area and south of Aswan in Umm Esh, in the Barramiya-Dungash area, in Wadi Shait, at Gebel Sikait, and in the Muqsim area (respectively numbers 19, 27, 29, 33, 42 on Map 1).[20]

Marble is made of calcite or dolomite combined with other minerals. Therefore, its appearance varies on the base of the minerals involved, from opaque to crystalline and from white to blackish. It is found in the southern part of the Eastern Desert, more in detail in Wadi Dib, at Gebel Rokham, and in Wadi Haimur (respectively numbers 14, 27, 41 on Map 1).[21]

Volcanic rocks

Volcanic rocks originate from magma solidified above ground and include obsidian and basalt. Furthermore, one vessel of porphyry has been reported in the publications, in a context of the Late Middle Kingdom. It is not sure what the author meant, because real porphyry is a volcanic rock found in the Eastern Desert and in the Sinai and used almost exclusively in the Roman period.[22] Sometimes, though, porphyry has been used in Egyptology to designate a type of diorite, which is a completely different type of rock.[23] Therefore, in the present work, this rock is considered just an undefined rock.

Obsidian is a volcanic glass, formed from quickly cooled magma rich in the elements that compose quartz and feldspar. It is vitreous and its colour varies from black to bluish, to brownish, to gold. It was imported from Ethiopia and Eritrea, and probably from the Aegean, the southern Arabian Peninsula and from the Levant.[24]

Basalt is a hard, volcanic rock, formed from quickly cooled magma rich in magnesium and iron. It is opaque and its colour varies from black to dark grey. Its sources are widespread in Egypt, with known ones around modern-day Cairo, at Tilal Sawda, and near Samalut, and the two latter on the west bank of the Nile in Middle Egypt (number 9 on Map 1). One known quarry is at Widan el-Faras on Gebel el-Qatrani, in the Fayyum (number 6 on Map 1).[25]

20 B.G. Aston 1994, 56–59; Aston, Harrell, and Shaw 2000, 56–57; Lucas 1948, 479–80.
21 B.G. Aston 1994, 55–56; Aston, Harrell, and Shaw 2000, 44–45; Lucas 1948, 472–73.
22 B.G. Aston 1994, 21–23; Aston, Harrell, and Shaw 2000, 48–49; Lucas 1948, 474–77.
23 B.G. Aston 1994, 13–15; Aston, Harrell, and Shaw 2000, 30–31; Lucas 1948, 465–67.
24 B.G. Aston 1994, 23–26; Aston, Harrell, and Shaw 2000, 46–47; Lucas 1948, 473–74.
25 B.G. Aston 1994, 18–21; Aston, Harrell, and Shaw 2000, 23–24; Lucas 1948, 463–64.

Plutonic rocks

Plutonic rocks originate from magma solidified underground. The only plutonic rock included in the present work is diorite, which is mostly composed of plagioclase and hornblende. Plagioclase is a type of feldspar, while the hornblende is a type of silicate, namely a mineral made of silica and oxygen, combined with iron, magnesium, and calcium or aluminium. Diorite is crystalline and granular, and its colour ranges from grey to dark-grey, to black, to bluish-grey. It was commonly found in the Eastern Desert, and was mined in Wadi Umm Shegilat, north of the Theban area (number 17 on Map 1).[26]

METALS

Metals included in the present work include gold and electrum, silver, and copper. Gold is a soft and easily workable metal, reddish-yellow in colour. It comes mostly from the Eastern Desert, especially from near Koptos and near the Wadi Allaqi, and modern Sudan (respectively numbers 18 and 40 on Map 1). It was sometimes used in alloy with silver or copper or other metals.[27] Also electrum, which is a natural alloy of gold and silver, can be found in gold ores.[28] Given that the sources are the same, gold and electrum are considered together in the present work.

Silver is a soft metal, white, and lustrous. It can be found pure, or it can come as a by-product of copper, gold, lead, and zinc processing. In Egypt it is not found pure, but only in traces in gold or lead ores in the Eastern Desert. Therefore, it was mostly imported, probably from Asia Minor or the Aegean, where it is more common.[29] However, there is the possibility that objects were produced from silver originating from the Egyptian gold mines.[30]

Copper is a soft and easily workable metal, yellowish–pinkish in colour. It can be found pure or be extracted from ores through specific procedures. It comes mostly from the Eastern Desert, in areas such as Wadi Araba at the latitude of the Memphis-Fayyum area, Wadi Sitra east of Luxor, Hammash near Aswan, and from the Sinai, mostly in Timna and Serabit el-Khadim (respectively numbers 8, 28, 30, 1, 2 on Map 1). It is often found associate with gold, and in alloys with other metals.[31] One of these alloys is bronze, which is made of copper, tin, and other metals such as aluminium.

26 B.G. Aston 1994, 13–15; Aston, Harrell, and Shaw 2000, 30–31; Lucas 1948, 465–67.
27 Lucas 1948, 257–62; Ogden 2000, 161–64.
28 Lucas 1948, 267–68; Ogden 2000, 161–64.
29 Lucas 1948, 478–83; Ogden 2000, 170–71.
30 Gale and Stos-Gale 1981.
31 Lucas 1948, 228–36; Ogden 2000, 149–55.

FAIENCE AND OTHER MATERIALS

Widely used for the production of objects and locally made, faience is a glazed non-clay ceramic material, which is also included in the present work. It is composed mainly of crushed quartz or sand, thus silica and oxygen, with small amounts of lime, which is a compound made of calcium and oxygen, and either natron, which is a compound made of sodium and carbon and oxygen and water, or plant ash. This mixture was diluted with water and then fired. The main colours in which faience was produced are blue, green, yellow, white, black, which were obtained by adding specific minerals or metals to the mixture, such as copper to obtain a blue-green colour.[32]

Finally, other materials used for the production of objects and mentioned in the present work include: bones, which were taken from various animals and were commonly used in ancient Egypt;[33] ostrich eggshells, which were found in the southernmost part of both the Eastern and the Western Desert;[34] mother of pearl, which comes from the shell of pearl oysters, mostly from the Red Sea, was used more commonly in Nubia than in Egypt, and characterizes the Pan-grave tombs.[35] It should be mentioned that ostrich eggshell has sometimes been classified as mollusc shell, therefore in the present work is referred to simply as shell.[36]

32 Lucas 1948, 179–206; Nicholson 1998; Nicholson and Peltenburg 2000.
33 Krzyszkowska and Morkot 2000; Lucas 1948, 39.
34 Lucas 1948, 48–49; Phillips 2000.
35 Lucas 1948, 48.
36 Xia 2014, 104.