Egypt beyond representation : materials and materiality of Aegyptiaca Romana

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Appendices

A. Excerpt of Winckelmann's letter to Philipp von Stosch (Rome, 10 April 1761)[448]

"In der ersten Classe der Kunst der Egypter sind zwei verschiedene Stile zu merken; der Aeltere und der Nachfolgende; und zum Dritten finden sich Nachahmungen Egyptischer Werke: von allen drei Arten werde ich die vornemste Werke anzeigen. Der ältere Stil hat vermuthlich gedauret bis zur Eroberung des Cambyses, und der nachfolgende und spätere ist von der Zeit der Persischen und nachher der Griechischen Regierung über Egypten; in beiden ist zum Ersten die Bildung, Zweitens die Zeichnung und Drittens die Bekleidung der Figuren zu betrachten. In dem älteren Stil scheinet die Bildung des Gesichts zum Theil nach der Natur genommen, noch mehr aber nach ein angenommes Systema geformet zu sein. Die Köpfe haben alle eine den Sinesen ähnliche Bildung durch die platte und schräg gezogene Augen, und durch den aufwerts gezogenen Schnitt des Mundes: das Kinn ist kleinlich, und das Oval der Form des Gesichts ist dadurch unvollkommen. Daß man angenommenen Regeln und nicht bloß nach der Natur gearbeitet, zeiget die Form sonderlich der Füße, deren Zehen einen geringeren Abfall in der Länge mit einander haben, als es sich in der Natur findet, und dieses erscheinet noch deutlicher in der Zeichnung des Ganzen. Die Zeichnung der Figuren dieses Aelteren Stils ist völlig Idealisch: sie bestehet mehrentheils aus geraden Linien, welche wenig ausschweifen oder sich senken; es find Muskeln und Knochen wenig, Nerven aber und Adern gar nicht angedeutet. Der Stand dieser Figuren ist bekannt.

Die Bekleidung an Männlichen Figuren ist ein Schurz um den Unterleib; an Weiblichen Figuren ist dieselbe nur durch einen hervor springenden Rand an den Beinen und am Halse angedeutet, und die Anzeige der Kleidung dienet der Einbildung, sich dieselbe vorzustellen, wo sie an dem übrigen Körper gar nicht sichtbar ist. Die vornemste Figur dieses Stils ist Männlich und sitzend, von Alabaster welcher bei Theben gebrochen wurde, und ist größer als die Natur: der Stuhl auf welchem sie sitzet, ist ohne der Lehne, 4 Palme hoch, welches die Größe derselben mit anzeigen kann, und hinten und vorne am Stuhle stehen hieroglyphen.[449] *Ferner ist ein Anubis von Granit in Lebensgröße anzuführen, mit einem Kopfe welcher zu gleich etwas von einem Löwen, von einer Katze und vom Hunde hat: der Hinter-Kopf ist mit einer Egyptischen Haube bedecket, und auf dem Kopfe erhebet sich ein sogenannter Nimbus einen Palm hoch. Es befindet sich auch hier unter andern eine mit untergeschlagenen Beinen auf die Knie sitzende Weibliche Figur, in Lebensgröße, von schwarzen Granite, welche drei kleine erhoben gearbeitete Figuren vor sich hält. Derjenige welcher sie für den Athanas. Kircher in seinem Egyptischen Oedipo gezeichnet, hat sich begnüget, an statt dreier Figuren nur eine einzige zu sehen. Es stand dieses Werck ehemahls zu Rignano, auf der Straße nach Loretto.*

Der folgende und spätere Stil der Egyptischen Kunst ist von dem Aelteren Stile sehr verschieden, welches billig hätte von denen sollen bemerket worden seyn, die sich unterfangen haben, von der Kunst dieses Volks zu schreiben. Es ist zu glauben, daß die Egyptische Künstler unter der Persischen Regierung, da sie mehr Verkehr mit den Griechen als vorher hatten, sonderlich aber nachher unter den Königen aus Griechischen Geblüte, die Werke der Kunst von Griechischen Künstlern nachzuahmen angefangen haben. Und dieses sehen wir Erstlich in der Bildung, die in den Köpfen der Figuren dieses Stils den Griechischen Köpfen ähnlicher kommt; auch Hände und Füße sind mehr nach der Natur gebildet. In der Villa, von welcher wir reden [i.e. Villa Albani, where Winckelmann resided to study the Cardinal's collections of antiquities], sind zwar Statuen aus dieser Zeit, aber ohne eigene Köpfe, Hände und Füße, und ich muß hier zum Beweiß eine weibliche Figur von Basalt und unter Lebensgröße im Campidoglio anführen. Was die Zeichnung betrifft, so ist dieselbe an den mehresten Statuen nicht verschieden von dem ältesten Stile, an einigen aber ist es der Stand. In der Bekleidung aber ist ein mercklicher Unterschied: denn Erstlich zeiget sich an den Weiblichen Figuren dieser Art ein Unterkleid von leichten Zeuge, welches über die Hüften kann angeleget seyn, und ein anderes welches

448. Quotation from Winckelmann (1954) 135-137 no. 400.

449. Paris, Musée du Louvre, inv. A22 (*supra*, 256-257 no. 122).

wie ein Oberhembde ist, und die Brüste bedecket bis am Halfe; ferner ein Rock mit kurzen Ermeln, welcher bis unter die Brüste gehet, und außerdem ein Mantel. Dieser ist an einer Figur in Lebensgröße dieser Villa an zwei feiner Enden über die Schultern gezogen; das eine Ende ist um die eine Brust unten herum genommen und mit dem andern Ende zwischen den Brüsten zusammen gebunden, so daß zugleich der Rock unter die Brüste durch dieses Band gehalten, und in die Höhe gezogen wird. Hierdurch ziehen sich an dem Rocke Falten, welche aufwerts von beyden Seiten, auf den Lenden und Beinen gezogen werden, und von den Brüsten herunter hängen zwischen den Beinen ein paar senkrechte Falten. Diese Figuren sind ohne Hieroglyphen.

Die Nachahmungen Egyptischer Werke sind zur Zeit Kayser Hadrians gemachet, und leicht zu kennen, so wohl an der Bildung, als an der Zeichnung und Kleidung. Die schönsten Werke dieser Art in dieser Villa sind zwo Weibliche Figuren in schwarzen Marmor, und eine Männliche Figur in Roßo antico, an welcher die Beine und Arme noch nicht ergänzet sind. Diese scheinet einen Egyptischen Antinous vor zustellen, wie der fälschlich sogenannte Götze von weißen Marmor im Campidoglio; ja die zwo große Statuen von röthlichen Granite zu Tivoli sind nichts anders als Statuen dieses Lieblings, welches ich in der Geschichte der Kunst, wider die gemeine Meinung, zu erweisen suchen werde".

B. Selected Greek and Latin sources

Cicero, *Letters to Atticus* 1.8.2 (on Megarian and Pentelic marble statues, from Megara and Mount Pentelikon respectively, and the suitability of statuary for certain use-contexts; translation D.R. Shackleton Bailey):

"I have paid L. Cincius the HS 20,400 for the Megarian statues in accordance with your earlier letter. I am already quite enchanted with your Pentelic herms with the bronze heads, about which you write to me, so please send them and the statues and any other things you think would do credit to the place in question and to my enthusiasm and to your good taste, as many and as soon as possible, especially any you think suitable to a lecture hall and colonnade"

Cicero, *Letters to Atticus* 1.9.2 (on statues in Megarian marble, translation D.R. Shackleton Bailey):

"I am eagerly expecting the Megarian statues and the herms you wrote to me about. Anything you may have of the same sort which you think suitable for the Academy, don't hesitate to send it and trust my purse […] Things that are specially suitable for a lecture hall are what I want"

Cicero, *Letters to Atticus* 12.35 (on laws prohibiting the excessive private use of imported stones; translation D.R. Shackleton Bailey):

"Before I left your house a little while ago it never occurred to me that a fine has to be paid on a monument equal to the excess of the expenditure over the legal maximum, whatever that is"

Cicero, *Letters to Atticus* 13.6.1 (on the imposition of taxes on marble columns by Julius Caesar in 45 BC; translation D.R. Shackleton Bailey):

"You have done quite right about the aqueduct. I think you may find that I am not liable to any pillar tax, though I fancy I heard from Camillus that the law has been changed"

***Codex Theodosianus* 10.19.2** (Imperial decree of Justinian of 363 AD allowing private citizens to open new stone quarries; translation C. Pharr):

"Emperor Julian Augustus to Rufinus, Count of the Orient. Since the desire for marble has enormously increased the price of such stone, in order that this expensive wish may be alleviated by an abundant supply, We permit that all men who wish to quarry shall have the license granted to them. For We consider that the result will be that very many veins of glistening stone will also come to light and into use. Given on the eleventh day before the kalends of November at Antioch in the year of the fourth consulship of Julian Augustus and the consulship of Sallustius – October 22, 363"

***Codex Theodosianus* 10.19.13** (Imperial decree of Arcadius of 393 AD prohibiting private citizens from quarrying marble; translation C. Pharr):

"The same Augustuses to Rufinus, Praetorian Prefect. We command that the hands of private persons shall be prohibited from operating any marble quarry whatever, so that the prosecution of such operations may be more freely indulged on fiscal lands. But if any person, working secretly, should hereafter attempt such operations, all that he may cut out shall be vindicated to the ownership of the fisc and of the public. Given on the day before the ides of February at Constantinople in the year of the third consulship of Theodosius Augustus and the consulship of Abundantius – February 12, 393"

***Codex Theodosianus* 11.28.9** (remission of taxes for everyone except marble contractors located near Constantinople, issued in 414 AD; translation C. Pharr):

"The same Augustuses to Anthemius, Praetorian Prefect. Throughout all the provinces of the Orient from the eleventh year of the indiction of Valens up to the fifth year of the indiction just completed, namely, for forty years, that is, from the year of the consulship of the sainted Valens Augustus to the time of the seventh consulship of My most invincible uncle Honorius

and My second consulship, We grant the remission of delinquent taxes of all general tax accounts, with equal balance, to the decurions as well as to the private and patrimonial taxpayers, and also to the taxpayers of the divine imperial household, for every right subject to State service, likewise for the accounts due for cellar supplies, with the exception of the accounts due from the taxpayers of the mines and quarries of the three districts, Docimeum, Proconnesus, and the Troad, whether such taxes are due as payments in kind or bronze or money or gold or silver, so that none of these payments shall be due to the State storehouses or the chest of the prefect or to Our treasury. For the time following, the tax payments due from the sixth year of the indiction to the present twelfth year shall be reserved for needs as they arise. Given on the fifth day before the ides of April at Constantinople in the year of the consulship of Constantius and Constans – April 9, 414"

Dio Cassius 56.30.3-4 (on Augustus' saying that he found Rome built of brick and left it in marble; translation E. Cary):

"He did not thereby refer literally to the appearance of its buildings, but rather to the strength of the empire"

Dio Chrysostom, *Discourses* 79.2 (on *africano* from Teos, Turkey, *cipollino* from Euboea, Karystos/Styra, Greece, *pavonazzetto*/white marble from Dokimeion, Turkey; translation H. Lamar Crosby):

"And again, if there were utility in beautifully coloured and variegated marbles, the same statement could be made about the cities of Teos and Carystus, as well as about certain Egyptian and Phrygian cities in whose vicinity the mountains are of variegated stone—in fact, I hear that among their sarcophagi the very ancient ones are of this same rock—yet, for all that, they are no better or more fortunate than any of the very lowly and pitiful cities"

Juvenal, *Satires* 14.305-308 (on statues and columns made from Phrygian stone, i.e. *pavonazzetto*/white marble from Dokimeion, Turkey; translation S. Morton Braund)

"The millionaire Licinus stations his fire buckets and tells his cohort of slaves to keep watch through the night, terrified for his amber and statues and columns of Phrygian marble and ivory and plaques of tortoiseshell"

Livy, 6.4.12 (on the *magnificentia* of buildings in imported stones; translation B.O. Foster):

"That same year, that the City might not grow in private buildings only, the Capitol was provided with a substructure of hewn stone, a work which even amidst the present splendours of the City is deserving of remark"

Livy, 42.3.1-11 (the first recorded import of marble to Rome in 173 BC by the censor Quintus Fulvius Flaccus; translation E.T. Sage and A.C. Schlesinger):

"In the same year the temple of Juno Lacinia was stripped of its roof. Quintus Fulvius Flaccus as censor was building the temple to Fortuna Equestris which he had vowed while praetor in Spain during the Celtiberian war, striving zealously that there should be no temple in Rome larger or more splendid. Considering that it would add great beauty to the temple if the roof tiles were of marble, he set out for Bruttium and stripped the temple of Juno Lacinia of its tiles up to half their number, thinking that these would be sufficient to cover the building which was now being erected. Ships were made ready to load and transport them, the inhabitants being prevented by the censor's high office from forbidding the sacrilege. When the censor returned the tiles were unloaded from the ships and were being taken to the temple. Although nothing was said as to where they were obtained, yet such an act could not be concealed. There was accordingly an outcry in the senate: from all sides the demand was made that the consuls should lay the question before that body. But when the censor was summoned and entered the senatehouse, one and all assailed him to his face far more violently: the most venerable shrine of that region, a shrine which neither Pyrrhus nor Hannibal had violated, he had not been content with violating but had shamefully robbed it of its covering and well-nigh destroyed it. The top, they said, had been torn from the temple and the bare framing laid open to be rotted by the rains. Was it for this, they demanded, that a censor was chosen to control behaviour? That the magistrate to whom had been entrusted, in the fashion of the forefathers, the duty of enforcing the repair of public shrines and of

contracting for their maintenance, was himself roving through the cities of the allies plundering the temples and stripping off the roofs of sacred edifices! A thing, they continued, which might well seem unworthy if done to private buildings of the allies, he was doing when he destroyed the temples of the immortal gods, and fastening upon the Roman people the guilt of impiety, building temples with the ruins of temples, just as if the immortal gods were not the same everywhere, but that some should be worshipped and adorned with the spoils of others! When it was clear, before the vote was taken, what the sentiment of the Fathers was, when the motion was put, all unanimously decreed that a contract should be let for carrying the tiles back to the temple and that atonements should be offered to Juno. Those matters which concerned expiation were scrupulously performed; the contractors reported that the tiles had been left in the court of the temple because no workman could devise a plan for replacing them"

Lucian, *Hippias, or the Bath* 5-6 (description of a Roman bath house that contains *serpentino* from Krokees, Greece, *pavonazzetto* from Dokimeion, Turkey, and *giallo antico* from Chemtou, Tunisia; translation A.M. Harmon):

"The entrance is high, with a flight of broad steps of which the tread is greater than the pitch, to make them easy to ascend. On entering, one is received into a public hall of good size, with ample accommodations for servants and attendants. On the left are the lounging-rooms, also of just the right sort for a bath, attractive, brightly lighted retreats. Then, beside them, a hall, larger than need be for the purposes of a bath, but necessary for the reception of the rich. Next, capacious locker-rooms to undress in, on each side, with a very high and brilliantly lighted hall between them, in which are three swimming-pools of cold water; it is finished in Laconian marble, and has two statues of white marble in the ancient technique, one of Hygieia, the other of Aesculapius.

On leaving this hall, you come into another which is slightly warmed instead of meeting you at once with fierce heat; it is oblong, and has an apse at each side. Next it, on the right, is a very bright hall, nicely fitted up for massage, which has on each side an entrance decorated with Phrygian marble, and receives those who come in from the exercising-floor. Then near this is another hall, the most beautiful in the world, in which one can sit or stand with comfort, linger without danger and stroll about with profit. It also is refulgent with Phrygian marble clear to the roof. Next comes the hot corridor, faced with Numidian marble. The hall beyond it is very beautiful, full of abundant light and aglow with colour like that of purple hangings. It contains three hot tubs"

Martial, *Epigrams* 1.88.1-7 (on Parian marble, translation D.R. Shackleton Bailey):

"Alcimus, whom snatched from your master in your burgeoning years the Labican soil covers with light turf, take no tottering masses of Parian stone, gifts of vain labor doomed to fall, but take, my dear boy, boxwood easily shaped and the vine's dim shade and green meadows dewy with my tears, memorials of my sorrow"

Martial, *Epigrams* 8.55.6-10 (Martial on a Numidian lion in Rome's Colosseum and its comparison to the colours of the marble from the animal's homeland, *marmor Numidicum*, i.e. *giallo antico*; translation D.R. Shackleton Bailey):

"He was but one, but one before whose rule the very lions would tremble, to whom marble-painted Numidia would give a diadem. When his curving mane stood erect, what beauty, what dignity did its golden shadow shed over his neck!"

Ovid, *The art of love* 3.125 (on the increasing demand for marble around the beginning of the 1st century AD; translation J.H. Mozley):

"mountains diminish as the marble is dug from them"

Paulus Silentiarius, *Description of Hagia Sophia* 617-663 (on the marble decoration on the walls and pavings of the restored church of Hagia Sophia under Justinian in 573 AD and on the effect caused by its sight; translation Mango 1972, 85-86):

"Yet who, even in the thundering strains of Homer, shall sing the marble meadows gathered upon the mighty walls and spreading pavement of the lofty church?

Mining [tools of] toothed steel have cut these from the green flanks of Carystus and have left the speckled Phrygian stone, sometimes rosy mixed with white, sometimes gleaming with purple and silver flowers. There is a wealth of porphyry stone, too, besprinkled with little bright stars that had laden the river-boat on the broad Nile. You may see the bright green stone of Laconia and the glittering marble with wavy veins found in the deep gullies of the Iasian peaks, exhibiting slanting streaks of blood-red and livid white; the pale yellow with swirling red from the Lydian headland; the glittering crocus-like golden stone which the Libyan sun, warming it with its golden light, has produced on the steep flanks of the Moorish hills; that of glittering black upon which the Celtic crags, deep in ice, have poured here and there an abundance of milk; the pale onyx with glint of precious metal; and that which the land of Atrax yields, not from some upland glen, but from the level plain: in parts vivid green not unlike emerald, in others of a darker green, almost blue. It has spots resembling snow next to flashes of black so that in one stone various beauties mingle"

Pausanias, *Description of Greece* 1.18.6 (describing the Olympieion in Athens; translation W.H.S. Jones):

"Before the entrance to the sanctuary of Olympian Zeus—Hadrian the Roman emperor dedicated the temple and the statue, one worth seeing, which in size exceeds all other statues save the colossi at Rhodes and Rome, and is made of ivory and gold with an artistic skill which is remarkable when the size is taken into account—before the entrance, I say, stand statues of Hadrian, two of Thasian stone, two of Egyptian. Before the pillars stand bronze statues which the Athenians call "colonies"

Pausanias, *Description of Greece* 3.21.4 (on the quarries of *serpentino* at Krokees, Greece; translation W.H.S. Jones):

"As you go down to the sea towards Gythium you come to a village called Croceae and a quarry. It is not a continuous stretch of rock, but the stones they dig out are shaped like river pebbles; they are hard to work, but when worked sanctuaries of the gods might be adorned with them, while they are especially adapted for beautifying swimming-baths and fountains"

Pausanias, *Description of Greece* 8.24.12 (on the use of black stone for statues of the Nile; translation W.H.S. Jones):

"The images of all rivers except the Nile in Egypt are made of white marble; but the images of the Nile, because it descends to the sea through Aethiopia, they are accustomed to make of black stone"

Pliny, *Natural History* 34.16.34 (on the introduction of marble sculpture in Italy after the conquest of Asia in 189 BC: cf. *NH* 33.53.148; translation H. Rackham):

"And it seems to me surprising that although the initiation of statuary in Italy dates so far back, the images of the gods dedicated in the shrines should have been more usually of wood or terracotta right down to the conquest of Asia, which introduced luxury here"

Pliny, *Natural History* 36.1.2-3 (criticism on the use of marble and corruption of his time; translation D.E. Eichholz):

"Headlands are laid open to the sea, and nature is flattened. We remove the barriers created to serve as the boundaries of nations, and ships are built specially for marble. And so, over the waves of the sea, Nature's wildest element, mountain ranges are transported to and fro, and even then with greater justification than we can find for climbing to the clouds in search of vessels to keep our drinks cool, and for hollowing out rocks that almost reach the heavens, so that we may drink from ice. When we hear of the prices paid for these vessels, when we see the masses of marble that are being conveyed or hauled, we should each of us reflect, and at the same time think how much more happily many people live without them. That men should do such things, or rather endure them, for no purpose or pleasure except to lie amid spotted marbles, just as if these delights were not taken from us by the darkness of night, which is half our life's span!"

Pliny, *Natural History* 36.2.6 (on the import of 360 columns of Lucullean marble, i.e. *africano*, by the aedil M. Aemilius Scaurus in 58 BC to embellish an ephemeral theatre and subsequent transportation of some of these columns to the aedil's private home; translation D.E. Eichholz):

"In the aedileship of Marcus Scaurus there was the spectacle of 360 columns being taken to the stage of an improvised theatre that was intended to be used barely for a month, and the laws were silent. Of course, it was the official pleasures of the community for which some allowance was being made by our laws. But why should this, of all excuses, have been made? Or what route is more commonly taken by vices in their surreptitious approach than the official one? How else have ivory, gold and precious stones come to be used in private life? Or what have we left entirely to the gods? Very well; some allowance was being made for the pleasures of the community. Were not the laws silent also when the largest of those columns, which were each fully 38 feet long and of Lucullean marble, were placed in the hall of Scaurus' house? And there was no secrecy or concealment. A sewer contractor forced Scaurus to give him security against possible damage to the drains when the columns were being hauled to the Palatine. Would it not have been more expedient, therefore, when so harmful a precedent was being set, to afford some security for our morals? The laws were still silent when these great masses of marble were dragged to a private house past the earthenware pediments of temples!"

Pliny, *Natural History* 36.3.7-8 (on the first occurrence in Rome of white marble from Mount Hymettos in Greece, 95 BC, also the first occurrence of marble in a private home; translation D.E. Eichholz):

"the orator Lucius Crassus, having been the first to install, also on the Palatine, columns of foreign marble, columns which were after all merely of Hymettus marble and not more than six in number or more than 12 feet each in length, was in consequence nicknamed by Marcus Brutus the Palatine Venus"

Pliny, *Natural History* 36.4.14 (on Parian marble and Luna marble from Carrara, Italy; translation D.E. Eichholz):

"All these artists used only white marble from the island of Paros, a stone which they proceeded to call 'lychnites', since, according to Varro, it was quarried in galleries by the light of oil lamps. However, many whiter varieties have been discovered since their time, some indeed only recently, as is the case with the Luna quarries"

Pliny, *Natural History* 36.5.44-45 (on the Greek appreciation of stone materials, and on white Thasian marble and *bigio antico* from Lesbos; translation D.E. Eichholz):

"in those times no value was attached to marble with markings. Apart from the marble of the Cyclades, sculptors worked in that of Thasos, which rivals it, and of Lesbos, which has a slightly more bluish tinge. Markings of various colours and decorations of marble in general are first mentioned by that most accurate exponent of the details of high living, Menander, and even he rarely alludes to them. Marble columns were certainly used in temples, not, however, as an embellishment, since embellishments as such were not yet appreciated, but merely because there was no way of erecting stronger columns"

Pliny, *Natural History* 36.5.46 (on the prestige of marble and Chian marble, i.e. *portasanta*; translation D.E. Eichholz):

"In my opinion, the first specimens of our favourite marbles with their parti-coloured markings appeared from the quarries of Chios when the people of that island were building their walls. Hence the witty remark made at the expense of this work by Cicero. It was their practice to show it as a splendid structure to all their visitors; and his remark to them was 'I should be much more amazed if you had made it of stone from Tibur.' And, heaven knows, painting would not have been valued at all, let alone so highly, had marbles enjoyed any considerable prestige"

Pliny, *Natural History* 36.7.48 (on the first occurrence of walls with marble veneer and columns of Carystan marble, i.e. *cipollino*, and white Luna marble from Carrara, Italy by Mamurra, Julius Caesar's *praefectum fabrum*, after 55 BC; translation D.E. Eichholz):

"The first man in Rome to cover with marble veneer whole walls in his house, which was on the Caelian Hill, was, according to Cornelius Nepos, Mamurra, a Roman Knight and a native of Formiae, who was Gaius (Julius) Caesar's chief engineer in Gaul. That such a man should have sponsored the invention is enough to make it utterly improper. For this is the Mamurra who was reviled by Catullus of Verona in his poems, the

Mamurra whose house, as a matter of fact, proclaims more clearly than Catullus himself that he 'possesses all that Shaggy Gaul possessed.' Incidentally Nepos adds also that he was the first to have only marble columns in his whole house and that these were all solid columns of Carystus or Luna marble"

Pliny, *Natural History* 36.8.49-50 (on the introduction in Rome of Numidian marble, i.e. *giallo antico*, by the consul M. Lepidus in 78 BC, and of Lucullean marble, i.e. *africano*, by the consul L. Lucullus in 74 BC; translation D.E. Eichholz):

"Marcus Lepidus, who was consul with Quintus Catulus, was the very first to lay down door-sills of Numidian marble in his house; and for this he was sharply criticized. He was consul in the 676th year after the founding of the city. This is the first indication that I can find of the importing of Numidian marble. The marble, however, was not in the form of columns or slabs, like that of Carystus mentioned above, but came in blocks to be used in the most sordid manner—as door-sills! Four years after the consulship of this Lepidus came that of Lucius Lucullus, who gave his name, as is evident from the facts, to Lucullean marble. He took a great delight in this marble and introduced it to Rome, although it is in general black and all other marbles are favoured because of their markings or colours. It is found in the island of Chios and is almost the only marble to have derived its name from that of a devotee"

Pliny, *Natural History* 36.11.55-58 (on Lacedaemonian serpentine, i.e. *serpentino* from Krokees in Greece, plus several Egyptian stones: Augustean and Tiberian marble, named after the eponymous emperors, probably igneous or metamorphic rocks, Memphis stone – dolomite?, red porphyry known as Imperial porphyry from Mons Porphyrites, and *basanites*, i.e. greywacke from Wadi Hammamat; translation D.E. Eichholz):

"It is not important to mention the colours and species of marbles when they are so well known, nor is it easy to list them when they are so numerous. For there are few places for which a characteristic marble is not found to exist. […] Not all of them occur in quarries, but many are found scattered also beneath the earth's surface, some indeed being very valuable, like the green Lacedaemonian, which is brighter than any other marble, or the Augustean and, more recently, the Tiberian, which were found in Egypt for the first time during the principates of Augustus and Tiberius respectively. From serpentine, the markings of which resemble snakes—hence its name—these stones differ in that their markings are grouped differently. Those of the Augustean curl over like waves so as to form coils, while the Tiberian has scattered greyish-white spots which are not rolled into coils. Another difference is that only quite small columns made of serpentine are to be found. It has two varieties: one is soft and white, the other hard and dark […] Another stone, named from its place of origin, is the Memphis stone, which is like a gem […] In Egypt too there is red porphyry, of which a variety mottled with white dots is known as 'leptopsephos' […] The Egyptians also discovered in Ethiopia what is called 'basanites,' a stone which in colour and hardness resembles iron: hence the name they have given it"

Pliny, *Natural History* 36.12.59-61 (on several varieties and sources of onyx marble, i.e. alabaster, and their respective valuation and appreciation; translation D.E. Eichholz):

"Onyx marble was supposed by our old authorities to occur in the mountains of Arabia and nowhere else […] This stone is sometimes called 'alabastrites', for it is hollowed out to be used also as unguent jars […] It occurs in the neighbourhood of Thebes in Egypt and of Damascus in Syria. The latter variety is whiter than the rest, but that of Carmania is the most excellent. Next comes the Indian, and then of course there is that of Syria and the province of Asia, while the least valuable is the Cappadocian, which has no lustre whatsoever. The specimens most warmly recommended are the honey-coloured, marked with spirals, and opaque. A colour resembling that of horn, or else gleaming white, and any suggestion of a glassy look are serious faults in onyx marble […]"

Pliny, *Natural History* 36.13.62 (on Parian and Arabian *lygdinus*, possibly white marble, and suggesting pure whiteness as a reason for a stone's appreciation; translation D.E. Eichholz):

"Many people consider that for the preservation of unguents there is little to choose between onyx marble and the 'lygdinus', which is found in Paros in pieces no

larger than a dish or mixing bowl, although in earlier times it was normally imported only from Arabia. It is of an exceptionally brilliant whiteness"

Pliny, *Natural History* 36.13.63 (on *pyrrhopoecilos*, 'mottled red', i.e. the red/pink granite from Aswan in Egypt; translation D.E. Eichholz):

"The Thebaic stone mottled with gold spots is found in a part of Africa that has been assigned to Egypt […] The granite of Syene is found in the neighbourhood of Aswan in the Thebaid and in earlier times was known as 'pyrrhopoecilos'"

Pliny, *Natural History* 36.24.110 (on the extravagant use of marble in houses and elite competition in the late 1st century BC – early 1st century AD; translation D.E. Eichholz):

"Our most scrupulous authorities are agreed that in the consulship of Marcus Lepidus and Quintus Catulus as fine a house as any in Rome was that of Lepidus himself; but, I swear, within 35 years the same house was not among the first hundred. Confronted by this assessment, anyone who so wishes may count the cost of the masses of marble, the paintings, the regal budgets, the cost, in fact, of a hundred houses, each of which rivalled one that had been the finest and the most highly appreciated in its time, houses that were themselves to be surpassed by countless others right up to the present day"

Pliny, *Natural History* 36.34.113-115 (on the import of 360 columns of Lucullean marble, i.e. *africano*, by the aedil M. Aemilius Scaurus in 58 BC to embellish a theatre and subsequent transportation of some of these columns to the aedil's private home; translation D.E. Eichholz):

"I shall show that even their madness was outdone by the resources of a private individual, Marcus Scaurus, whose aedileship may perhaps have done more than anything to undermine morality, and whose powerful ascendancy may have been a more mischievous achievement on the part of his stepfather Sulla than the killing by proscription of so many thousands of people. As aedile he constructed the greatest of all the works ever made by man, a work that surpassed not merely those erected for a limited period but even those intended to last for ever. This was his theatre, which had a stage arranged in three storeys with 360 columns; and this, if you please, in a community that had not tolerated the presence of six columns of Hymettus marble without reviling a leading citizen. The lowest storey of the stage was of marble, and the middle one of glass (an extravagance unparalleled even in later times), while the top storey was made of gilded planks. The columns of the lowest storey were, as I have stated, each 38 feet high"

Pliny, *Natural History* 36.27.131 (on *lapis sarcophagus*, a volcanic andesite from Assos, Turkey; translation D.E. Eichholz):

"At Assos in the Troad we find the Sarcophagus stone, which splits along a line of cleavage […] There are similar stones both in Lycia and in the East"

Pliny, *Natural History* 36.61.185 (on the first use of marble crustae in Rome, *scutulata pavimenta*, in the temple of Jupiter Capitolinus in 149 BC; translation D.E. Eichholz):

"At Rome the first floor with a diamond pattern was constructed in the temple of Jupiter Capitolinus after the beginning of the Third Punic War"

Plutarchus, *Moralia* 395B (on a visitor who commented on the statues of the Temple at Delphi; translation F.C. Babbitt):

"The appearance and technique of the statues had only a moderate attraction for the foreign visitor, who, apparently, was a connoisseur in works of art. He did, however, admire the patina of the bronze, for it bore no resemblance to verdigris or rust, but the bronze was smooth and shining with a deep blue tinge, so that it gave an added touch to the sea-captains (for he had begun his sight-seeing with them), as they stood there with the true complexion of the sea and its deepest depths"

Propertius, *Elegies* 2.31.3-8 (on the use of *giallo antico* in the portico of the temple of Apollo Palatinus; translation G.P. Goold):

"The whole of it had been marked out for a promenade with Afric columns, between which stood the many daughters of old Danaus"

Seneca, *Epistles* 86.6 (criticism on the extravagance and the use of marble in Scipio's villa; translation R.M. Gummerie):

"But who in these days could bear to bathe in such a fashion? We think ourselves poor and mean if our walls are not resplendent with large and costly mirrors; if our marbles from Alexandria are not set off by mosaics of Numidian stone, if their borders are not faced over on all sides with difficult patterns, arranged in many colours like paintings; if our vaulted ceilings are not buried in glass; if our swimming-pools are not lined with Thasian marble, once a rare and wonderful sight in any temple—pools into which we let down our bodies after they have been drained weak by abundant perspiration; and finally, if the water has not poured from silver spigots. I have so far been speaking of the ordinary bathing-establishments; what shall I say when I come to those of the freedmen? What a vast number of statues, of columns that support nothing, but are built for decoration, merely in order to spend money! And what masses of water that fall crashing from level to level! We have become so luxurious that we will have nothing but precious stones to walk upon"

Sidonius Apollinaris, *Letters* 2.2.7 (on the absence of colourful marbles in a private house – Parian marble, *cipollino* from Karystos, Prokonnesian marble, Phrygian *pavonazzetto*, Numidian *giallo antico*, *serpentino* from Krokees near Sparta, Greece, and Ethiopian stone, i.e. pink/red granite from Aswan; translation W.B. Anderson):

"If you ask what I have to show in the way of marble, it is true that Paros, Carystos and Proconnesos, Phrygians, Numidians and Spartans have not deposited here slabs from hill-faces in many colours, nor do any stone surfaces, stained with a natural tinge among the Ethiopian crags with their purple precipices, furnish a counterfeit imitation of sprinkled bran. But although I am not enriched by the chill starkness of foreign rocks, still my buildings—call them cottages or huts as you please—have their native coolness"

Statius, *Silvae* 1.2.145-157 (on the marbles in a 'lofty mansion': Libyan stone?, *pavonazzetto*/white marble from Dokimeion, Turkey, *serpentino* from the region of Laconia, Greece, alabaster, *cipollino* ['the vein that matches the deep sea'], Imperial porphyry ['Oebelian purple and the blender of the Tyrian cauldron']; translation D.R. Shackleton Bailey):

"A lofty mansion spreads open a shining home and the rejoicing swans flap upon the famed entrance. The dwelling deserves the goddess, nor seems it mean after the bright stars. Here is Libyan stone and Phrygian, here hard Laconian rock shows green, here are versatile alabaster and the vein that matches the deep sea, here marble oft envied by Oebalian purple and the blender of the Tyrian cauldron. Airy gables rest on countless columns, beams glitter allied with Dalmatian ore. Cool descends from ancient trees shutting out the sunshine, translucent fountains live in marble. Nor does Nature observe her order: here Sirius is chill, midwinter warm. The house tempers the changing year to its liking"

Statius, *Silvae* 1.5.30-41 (on the [lacking] marbles in the baths of Claudius Etruscus, son of a court official of emperor Domitian: Thasian white marble, *cipollino*, alabaster, *serpentino*, *giallo antico*, Imperial porphyry, *pavonazzetto*/white marble from Dokimeion, Turkey; translation D.R. Shackleton Bailey):

"In no other grotto did you ever dwell in wealthier style […] Not Thasos or wavy Carystos are admitted here, alabaster sulks afar, serpentine grumbles in exclusion; shines only stone hewn from Numidia's yellow quarries and that other at which Tyre's and Sidon's purple would weep for envy, only what Attis himself bloodied with gleaming flecks in Synnas' hollow cave. Scarce is there space for Eurotas, whose long green streak picks out Synnas"

Statius, *Silvae* 4.2.26-29 (on several types of stone in the Domus Flavia and the relative valuation of coloured stones over white marbles; translation D.R. Shackleton Bailey):

"Here contend the mountains of Libya and the gleaming stone of Ilium, dark Syene too and Chios, and rocks to rival the grey-green sea, and Luna, substituted only to support the columns"

Strabo, *Geography* 5.2.5 (on the white marble and *bardiglio* quarries at Luna, now Carrara, Italy; translation H.L. Jones):

"And the quarries of marble, both white and mottled bluish-grey marble, are so numerous, and of such quality (for they yield monolithic slabs and columns), that the material for most of the superior works of art in Rome and the rest of the cities are supplied therefrom; and, indeed, the marble is easy to export, since the quarries lie above the sea and near it, and since the Tiber in its turn takes up the cargo from the sea and conveys it to Rome"

Strabo, *Geography* 9.1.23 (on Hymettus and Pentelic marble, from Mount Hymettos and Mount Pentelikon in Greece respectively; translation H.L. Jones):

"Near the city are most excellent quarries of marble, the Hymettian and Pentelic"

Strabo, *Geography* 9.5.16 (on Scyrian variegated marble, i.e. *breccia di Settebasi* from the Island of Skyros, and the increasing demand for coloured stones around the time of Augustus at the expense of the value of white marble; translation H.L. Jones):

"Now Skyros is chiefly commended by the place it occupies in the ancient legends, but there are other things which cause it to be widely mentioned, as, for instance, the excellence of Scyrian goats, and the quarries of the Scyrian variegated marble, which is comparable to the Carystian marble, and to the Docimaean or Synnadic, and to the Hierapolitic. For at Rome are to be seen monolithic columns and great slabs of the variegated marble; and with this marble the city is being adorned both at public and at private expense; and it has caused the quarries of white marble to be of little worth"

Strabo, *Geography* 10.1.6 (on *cipollino* from Euboea, Karystos/Styra, Greece; translation H.L. Jones):

"Carystus is at the foot of the mountain Ochê; and near it are Styra and Marmarium, in which latter are the quarry of the Carystian columns"

Strabo, *Geography* 12.8.14 (on white marble and *pavonazzetto* from Dokimeion, Turkey, and the increasing demand for marble around the beginning of the 1st century AD; translation H.L. Jones):

"Synnada is not a large city […] and beyond it is Docimaea, a village, and also the quarry of 'Synnadic' marble […] At first this quarry yielded only stones of small size, but on account of the present extravagance of the Romans great monolithic pillars are taken from it […] so that, although the transportation of such heavy burdens to the sea is difficult, still, both pillars and slabs, remarkable for their size and beauty, are conveyed to Rome"

Strabo, *Geography* 13.1.16 (on Prokonnesian marble from the Island of Marmara, Turkey; translation H.L. Jones):

"On the coasting-voyage from Parium to Priapus lie both the old Proconnesus and the present Proconnesus, the latter having a city and also a great quarry of white marble that is very highly commended; at any rate, the most beautiful works of art in the cities of that part of the world, and especially those in Cyzicus, are made of this marble"

Strabo, *Geography* 14.1.35 (on *portasanta* from the Island of Chios, Greece; translation H.L. Jones):

"And the island also has a marble quarry"

Suetonius, *Divus Augustus* 28.3 (on the Augustan marble revolution; translation J.C. Rolfe):

"Since the city was not adorned as the dignity of the empire demanded, and was exposed to flood and fire, he so beautified it that he could justly boast that he had found it built of brick and left it in marble"

Suetonius, *Divus Augustus* 72.1 (on Augustus' modesty in his house on the Palatine Hill and the absence of sumptuous decorative stones and tufa columns instead; translation J.C. Rolfe):

"but in the no less modest dwelling of Hortensius, which was remarkable neither for size nor elegance, having but short colonnades with columns of Alban stone, and rooms without any marble decorations or handsome pavements"

Suetonius, *Divus Iulius* 46 (on Julius Caesar's alleged predilection for marble; translation J.C. Rolfe):

"Many have written that he was very fond of elegance and luxury; that having laid the foundations of a country-house on his estate at Nemi and finished it at great cost, he tore it all down because it did not suit him in every particular, although at the time he was still poor and heavily in debt; and that he carried tesselated and mosaic floors about with him on his campaigns"

Suetonius, *Divus Iulius* 85 (on the cenotaph of Julius Caesar in *giallo antico*; translation J.C. Rolfe):

"Afterwards they set up in the Forum a solid column of Numidian marble almost twenty feet high, inscribed upon it, "To the Father of his Country""

Suetonius, *Divus Tiberius* 49.2 (on the increased state control of quarries and mines under Tiberius; translation J.C. Rolfe):

"many states and individuals were deprived of immunities of long standing, and of the right of working mines and collecting revenues"

Suetonius, *Nero* 50 (on Nero's funerary tomb on the Pincio; translation J.C. Rolfe):

"In that monument his sarcophagus of porphyry, with an altar of Luna marble standing above it, is enclosed by a balustrade of Thasian stone"

Tibullus, *Elegies* 3.3.13-14 (on *pavonazzetto*/white marble from Dokimeion, Turkey, *rosso antico* from Cape Taenaron, Mani Peninsula, Greece, and *cipollino* from Karystos/Styra, Euboea, Greece; translation J.P. Postgate)

"what good a house that rests on pillars from Phrygian quarries, or, Taenaros, from thine, or thine, Carystos"

Velleius Paterculus, *History of Rome* 1.11.5 (on the construction of the first temple of marble in Rome in 146 BC, i.e. the temple of Jupiter-Stator, commissioned by the Roman general Quintus Caecilius Metellus Macedonicus; translation F.W. Shipley):

"This same Metellus was the first of all to build a temple of marble, which he erected in the midst of these very monuments, thereby becoming the pioneer in this form of munificence, or shall we call it luxury?"

Vitruvius, *On architecture* 7.pref.17 (on the *magnificentia* of constructions in marble; translation F. Granger):

"But if it had been of marble so as to be impressive by a costly magnificence, no less than marked by a skilful precision, it would have a name among the buildings of the first and highest class"

C. Ancient authors on the transportation of obelisks to and use in Rome

Ammianus Marcellinus 17.4.12-15 (excerpt from Chapter 4, entitled "By order of Constantius Augustus an obelisk is set up at Rome in the Circus Maximus; also an account of obelisks and hieroglyphs", on the transport from Egypt and erection in the Circus Maximus of the Laterano obelisk under Constantius II; translation J.C. Rolfe):

"And because sycophants, after their fashion, kept puffing up Constantius and endlessly dinning it into his ears that, whereas Octavianus Augustus had brought over two obelisks from the city of Heliopolis in Egypt, one of which was set up in the Circus Maximus, the other in the Campus Martius, as for this one recently brought in, he neither ventured to meddle with it nor move it, overawed by the difficulties caused by its size—let me inform those who do not know it that that early emperor, after bringing over several obelisks, passed by this one and left it untouched because it was consecrated as a special gift to the Sun God, and because being placed in the sacred part of his sumptuous temple, which might not be profaned, there it towered aloft like the peak of the world. But Constantine, making little account of that, tore the huge mass from its foundations; and since he rightly thought that he was committing no sacrilege if he took this marvel from one temple and consecrated it at Rome, that is to say, in the temple of the whole world, he let it lie for a long time, while the things necessary for its transfer were being provided. And when it had been conveyed down the channel of the Nile and landed at Alexandria, a ship of a size hitherto unknown was constructed, to be rowed by three hundred oarsmen. After these provisions, the aforesaid emperor departed this life and the urgency of the enterprise waned, but at last the obelisk was loaded on the ship, after long delay, and brought over the sea and up the channel of the Tiber, which seemed to fear that it could hardly forward over the difficulties of its outward course to the walls of its foster-child the gift which the almost unknown Nile had sent. But it was brought to the vicus Alexandri distant three miles from the city. There it was put on cradles and carefully drawn through the Ostian Gate and by the Piscina Publica and brought into the Circus Maximus. After this there remained only the raising, which it was thought could be accomplished only with great difficulty, perhaps not at all. But it was done in the following manner: to tall beams which were brought and raised on end (so that you would see a very grove of derricks) were fastened long and heavy ropes in the likeness of a manifold web hiding the sky with their excessive numbers. To these was attached that veritable mountain engraved over with written characters, and it was gradually drawn up on high through the empty air, and after hanging for a long time, while many thousand men turned wheels resembling millstones, it was finally placed in the middle of the circus and capped by a bronze globe gleaming with gold-leaf; this was immediately struck by a bolt of the divine fire and therefore removed and replaced by a bronze figure of a torch, likewise overlaid with gold-foil and glowing like a mass of flame"

Ammianus Marcellinus 17.4.16 (on obelisks in Rome: the Vatican obelisk, the Trinità dei Monti obelisk, plus the Esquiline and Quirinal obelisks; translation J.C. Rolfe):

"And subsequent generations have brought over other obelisks, of which one was set up on the Vatican, another in the gardens of Sallust, and two at the mausoleum of Augustus"

Pliny, *Natural History* 16.76.201-202 (on the transportation of the Vatican obelisk to Rome; translation H. Rackham):

"An especially wonderful fir was seen in the ship which brought from Egypt at the order of the emperor Gaius the obelisk erected in the Vatican Circus and four shafts of the same stone to serve as its base. It is certain that nothing more wonderful than this ship has ever been seen on the sea: it carried one hundred and twenty bushels of lentils for ballast, and its length took up a large part of the left side of the harbour of Ostia, for under the emperor Claudius it was sunk there, with three moles as high as towers erected upon it that had

been made of Pozzuoli cement for the purpose and conveyed to the place. It took four men to span the girth of this tree with their arms"

Pliny, *Natural History* 36.14.70 (on the transport of obelisks to Rome; translation D.E. Eichholz):

"Above all, there came also the difficult task of transporting obelisks to Rome by sea. The ships used attracted much attention from sightseers. That which carried the first of two obelisks was solemnly laid up by Augustus of Revered Memory in a permanent dock at Pozzuoli to celebrate the remarkable achievement; but later it was destroyed by fire. The ship used by the Emperor Gaius for bringing a third was carefully preserved for several years by Claudius of Revered Memory, for it was the most amazing thing that had ever been seen at sea. Then caissons made of cement were erected in its hull at Pozzuoli; whereupon it was towed to Ostia and sunk there by order of the emperor, so to contribute to his harbour-works. Then there is another problem, that of providing ships that can carry obelisks up the Tiber; and the successful experiment shows that the river has just as deep a channel as the Nile"

Pliny, *Natural History* 36.14.71-15.72 (on the Flaminian and Montecitorio obelisks, erected by Augustus in the Circus Maximus and Campus Martius, respectively, translation D.E. Eichholz):

"The obelisk placed by Augustus of Revered Memory in the Circus Maximus was cut by King Psemetnepserphreus, who was reigning when Pythagoras was in Egypt, and measures 85 feet and 9 inches, apart from its base, which forms part of the same stone. The obelisk in the Campus Martius, however, which is 9 feet less, was cut by Sesothis. Both have inscriptions comprising an account of natural science according to the theories of the Egyptian sages. The one in the Campus was put to use in a remarkable way by Augustus of Revered Memory so as to mark the sun's shadow and thereby the lengths of days and nights. A pavement was laid down for a distance appropriate to the height of the obelisk so that the shadow cast at noon on the shortest day of the year might exactly coincide with it. Bronze rods let into the pavement were meant to measure the shadow day by day as it gradually became shorter and then lengthened again. This device deserves to be carefully studied, and was contrived by the mathematician Novius Facundus. He placed on the pinnacle a gilt ball, at the top of which the shadow would be concentrated, for otherwise the shadow cast by the tip of the obelisk would have lacked definition"

Pliny, *Natural History* 36.15.74 (on the Vatican obelisk; translation D.E. Eichholz):

"The third obelisk in Rome stands in the Vatican Circus that was built by the emperors Gaius and Nero. It was the only one of the three that was broken during its removal. It was made by Nencoreus, the son of Sesosis"

Strabo, *Geography* 17.1.27 (on obelisks from Heliopolis in Egypt; translation H.L. Jones):

"Two of these, which were not completely spoiled, were brought to Rome"

D. Various uses of lime- and sandstone in Egypt

Statues

The corpus of Egyptian statuary in lime- and sandstone is large and varied.[450] It appears that some sculptural types were more commonly executed in these materials than others, but all types exist.[451] Hence, we find lime- and sandstone statues of deities in anthropomorphic form, private sculptures including statues of dedicants, priests, and kings and queens, zoomorphic statues of deities and animals, and sphinxes.

Examples of anthropomorphic deities include two statues of Bes,[452] and two statues of the goddess Mut that date from the 18th Dynasty.[453] Examples of private sculpture that are typologically and stylistically closely related to the imported objects of private individuals in Rome include an early 18th Dynasty kneeling offering statuette of the Overseer of the Workhouse of Amun at Karnak, Setau, who presents the cobra goddess Nekhbet, the lower part of a 19th Dynasty kneeling naophoros statue of Hori who presents a naos with an image of Ptah inside, and two Ptolemaic standing naophoros statues in the British Museum.[454]

Royal sculptures that are typologically and stylistically related to the ones found at Rome include two fragmentarily preserved limestone statues inscribed for Ptolemy VI and his wife Cleopatra II. Dating from the mid-2nd century BC, these statues, which originate from Karnak, are well comparable to the mid-3rd century BC granite statues of Ptolemy II and his wife Arsinoe II from the Horti Sallustiani in Rome.[455] Like the two imports in Rome, the statues of Ptolemy VI and Cleopatra II may have originally formed a pair. Moreover, they have similar iconographical schemes – all four statues are standing figures with the left foot forward – and they are of comparable, over-life-size dimensions.[456] Typologically and stylistically similar royal sculptures in limestone date from the New Kingdom[457] and the Ptolemaic period,[458] and also

450. Limestone was first used as the medium for statues as early as the late Predynastic period or First Dynasty, and it continued to be used for sculptural purposes throughout all subsequent periods of Egyptian history. Sandstone was rarely used for statues before the Middle Kingdom, but, from that period onwards, it frequently was the medium of choice for statues.

451. The survey for instance yielded more statues in lime- and sandstone of royal figures and private individuals than examples of deities in anthropomorphic form.

452. One of these statues comes from the temple of Nectanebo I near the Serapeum at Saqqara and dates from the 30th Dynasty (limestone, H. 92 cm; now in Paris, Musée du Louvre, inv. N 437). The other (Ptolemaic?) statue is from the temple at Dendera (sandstone; preserved height 96 cm, i.e., from head through knees; now in Cairo, Egyptian Museum, inv. CG 38705: see Daressy 1906, pl. 29).

453. The first specimen comes from the temple of Amenhotep III at Thebes (preserved height 140 cm, i.e., the bust; now in London, British Museum, inv. EA 648), another one is depicted in *Ägypten. Götter. Menschen. Pharaonen* (2014) 112-113 (E. Vassilika).

454. Statuette of Setau: limestone; H. 26.5 cm, now in Paris, Musée du Louvre, inv. N 4196: see Andreu *et al*. (1997) 116-117 no. 49 (G. Andreu). Statue of Hori: limestone; preserved height 33 cm, i.e., lower part until waist; now in London, British Museum, inv. EA 845: see Bierbrier (1982) pl. 36-39. Two standing naophoros statues in the British Museum: inv. EA 92 (limestone; preserved height 69 cm, head and feet lost: a priest who presents a naos that contains a figure of the anthropomorphic deity Khonspakhered), and inv. EA 69486 (limestone; preserved height 38 cm, i.e., from midriff to lower legs: Wennefer, the High-Priest of Thoth, who presents a naos with the a squatting image of a baboon).

455. See *supra*, 164-167 no. 076-077. On this comparison see also Thiers (2002) 393-394.

456. The estimated original height of the sculptures of Ptolemy VI and Cleopatra II is between 2.5 and 3 m (Thiers 2002), versus 2.66 and 2.70 m for the statues of Ptolemy II and Arsinoe II, respectively (Ptolemy VI: preserved height 126 cm, i.e., torso; now in Cairo, Egyptian Museum, inv. JE 41218: see Stanwick 2002, 108 no. B11 and Thiers 2002, 392-394 with fig. 2; Cleopatra II: preserved in two fragments, head and torso = H. 88 cm, abdomen/thighs = H. 99 cm; now Caracol, inv. R177 and Cheikh Labib, inv. 94CL1421, respectively: see Stanwick 2002, 109 B14 and Thiers 2002, 389-392 with fig. 1).

457. Colossal royal statue showing Ramesses II in traditional pose with the left leg forward and the arms (probably) stretched along the side, from Heliopolis: Balboush (1979) 28 and pl. 5-7.

458. The more completely preserved and stylistically and typologically comparable specimens include an over-life-size standing statue of Ptolemy XII from the Soknebtunis temple at Tebtunis dating from ca. 55 BC (limestone; H. 211 cm, now in Alexandria, Greco-Roman Museum, inv. 22979: see Stanwick 2002, 123 no. E3 with fig. 157-159), a standing queen dated to the 3rd century BC (limestone; preserved height 66 cm, i.e., from head through upper legs, now in Cairo, Egyptian Museum, inv. CG 678: see Stanwick 2002, 105-106 no. A45 with fig. 43), and the upper part of a statue of a standing Ptolemaic queen in sandstone, dated to the first half of the 2nd century BC (preserved height 101 cm, i.e., head through knees; now in Turin, Museo Egizio, inv. 1386: see Stanwick 2002, 111 no. B29 and Capriotti Vittozzi 1998 with pl. 7).

include two specimens of Nectanebo I (Late Period, 30th Dynasty).[459] Kneeling royal statues were also executed in limestone as evident from a 19th Dynasty specimen from Heliopolis.[460] Zoomorphic sculptures of deities in limestone notably include several specimens of Apis and Hathor in their bovine forms, which are well comparable in terms of their stylistic execution, iconographical scheme, and (sometimes) dimensions to the so-called Apis Brancaccio that was perhaps imported from Egypt to Rome.[461] Sculptures of other deities were executed in lime- and sandstone as well.[462]

Among the zoomorphic sculptures of animals in limestone, statues representing lions can be particularly noted.[463] Sphinxes, finally, can be readily found in both sand- and limestone. From the New Kingdom onwards, large numbers of sphinxes lined the processual ways to sacred or royal temples. Hundreds of examples, mostly in sandstone, are known from the sphinx alleys of the temple complex at Karnak alone, and another several hundred human-headed specimens in limestone lined the dromos of the Serapeum at Saqqara.[464]

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459. Cairo, Egyptian Museum, inv. JE 87298, from Hermopolis; preserved height 240 cm, i.e., head through knees: see Josephson (1995) fig. 8. Another specimen that is attributed to the same pharaoh stands at the entrance of Minya Museum: see Josephson (1997) pl. 9d.

460. Kneeling statue of king Sety II wearing a *nemes*-headdress. The king is depicted squatting on a rectangular base and sits against an inscribed back-pillar while presenting an offering table (160 x 51 x 83, H x W x D); from Heliopolis, presumably from the temple of Atum: El-Sawi (1990) with pl. 55-56 and Raue (1999) 374 XIX.6-5.2.

461. The more completely preserved specimens include the statue of Apis from the Serapeum at Saqqara that presumably dates from the reign of the 30th Dynasty king Nectanebo I; originally painted; 126 x 176 cm (H x L), now in Paris, Musée du Louvre, inv. N 390: see Andreu *et al*. (1997) 200-201 no. 101 (C. Ziegler), and a 19th Dynasty statue of Hathor from Deir el-Medina; 44 x 72 cm (H x L), now in Paris, Musée du Louvre, inv. E 16379 A: see Barbotin (2007) 150 no. 88. Fragmentarily preserved examples include a head of an Apis bull dating from the Late Period (Turin, Museo Egizio, inv. C 826), and a 19th Dynasty head in painted limestone of Hathor from Deir el-Medina in Paris, Musée du Louvre, inv. E 16380, for which see Barbotin (2007) 151 no. 89 and *Le règne animal* (2014) 236-237 no. 257 (P. Rigault). For the statue of Apis Brancaccio see *supra*, 216-217 no. 102. Iconographically and stylistically related is the statue of the Mnevis-bull who protects an image of king Siptah (19th Dynasty, from Heliopolis; now in Cairo, Egyptian Museum, JE 25764, preserved dimensions 120 x 34 x 17, H x W x H): Daressy (1918) and Raue (1999) 375-376 XIX.7-4.1.

462. For example, a pair of squatting baboons (Thoth) in limestone from Thebes (now in London, British Museum, inv. EA 1232 and 1233); a statue of a Horus-falcon in limestone (reign of Nectanebo II?, now in Paris, Musée du Louvre, inv. E 11152: see *Le règne animal* 2014, 322 no. 354 [S. Guichard]); and another specimen in sandstone (standing at the temple of Hatshepsut in Deir el-Bahari). Other deities include a seated statue in limestone of the jackal-headed god Anubis with a small figurine of Osiris from Saqqara (26th Dynasty; now in Cairo, Egyptian Museum, inv. CG 38570: see Daressy 1906, pl. 31); and another seated statue in limestone of the warrior god Montu with a bull's head and anthropomorphic body from the temple of Medamud (Ptolemaic period; now in Paris, Musée du Louvre, inv. E 12922: see *Le règne animal* 2014, 249 no. 274 [F. Maruéjol]).

463. Three lions from the dromos of the Serapeum at Saqqara, dated to the reign of the 30th Dynasty pharaoh Nectanebo I, are now in Paris, Musée du Louvre, inv. N 432 b: see *Egyptomania* (1994) 345-347 no. 208 (C. Ziegler); 56 x 124 (H x W). A typologically and stylistically similar but smaller lion of Ptolemaic age is in Turin, Museo Egizio, inv. C 866: see *Sfinx. De wachters van Egypte* (2006) 188 no. 16 (S.-A. Ashton); 38 x 70 (H x W). The Serapeum lions are well comparable to a pair of lions that are usually connected to the Iseum Campense in Rome (Rome, Musei Vaticani, inv. 22676 and 22677); they are excluded from the corpus in this study since their findspot is unknown. The Vatican lions are made from granodiorite, inscribed with hieroglyphs (on the basis of which they can be dated to the reign of Nectanebo I), and are somewhat larger than the specimens in limestone (77 x 195 and 77 x 180 cm, respectively; H x W); see Lembke (1994) 223-224 no. 13-14, and pl. 32.

464. The sphinxes from Karnak are of various dates and types, including ram-headed sphinxes inscribed for the 18th Dynasty king Amenhotep III and Ramesses II (19th Dynasty), and human-headed sphinxes inscribed for Nectanebo I (30th Dynasty): see De Putter (2006) 88 and Sourouzian (2006) 106-110. The Serapeum sphinxes are usually dated to the 30th Dynasty or early Ptolemaic period; it is estimated that approximately 600 sphinxes lined the dromos to the Serapeum. Eleven of these are in Vienna (Kunsthistorisches Museum, inv. ÄS 5756-5767): see *Ägypten Griechenland Rom* (2005) 478-479 no. 31-32 (U. Höckmann), six in Paris (Musée du Louvre, inv. N 391), five in Cairo (Egyptian Museum, inv. CG685 and 1193-1196), and two in Berlin (Ägyptisches Museum und Papyrussammlung, Staatliche Museen zu Berlin, inv. 7777 and 7778); see De Putter (2006) 90 fig. 9 and Arnold (1999) 109-100 with n. 60. Additional examples can be easily added from other sites, for instance two human-headed specimens with *nemes*-headdresses, inscribed for Ramesses III (20th Dynasty), from Heliopolis (170 x 93, L x H): see Saleh (1983) 54 with pl. 44; a series of 2nd century BC sphinxes from the Renenutet temple in Medinet Madi: see Stanwick (2002) 112 no. C3-C4 with literature; and another specimen inscribed for Nectanebo I from the temple of Nechbet at El Kab (now in Brussel, Koninklijke Musea voor Kunst en Geschiedenis, inv. E 7702): see *Sfinx. De wachters van Egypte* (2006) 188 no. 18 (L. Delvaux). A pair of sphinxes in limestone dating from the reign of the co-regency between Hatshepsut and Tuthmose III (18th Dynasty) provide a typologically and chronologically parallel for one of the granodiorite sphinxes that was transported to Rome (cf. *supra*, 210-211 no. 099): one of these two sphinxes is in Cairo, Egyptian Museum, inv. JE 53113, the other one in New York, Metropolitan Museum of Art, inv. 31.3.94: see *Hatshepsut: from queen to pharaoh* (2005) 166 no.

Architecture

Lime- and sandstone were commonly used for the production of architectural elements of all kinds throughout Egyptian history. If we consider the corpus of Egyptian architectural stone elements as a whole, it appears that lime- and sandstone are by far the most extensively used materials. Limestone was the primary building material of entire Egypt until the 18th Dynasty, when it lost its leading position to sandstone in the region south of Thebes, yet it retained its status as principal building stone throughout Antiquity north of Thebes.[465] The systematic use of sandstone in monumental architecture started in the 11th Dynasty in the mortuary temple of king Mentuhotep II at Deir el-Bahari in Thebes. However, it was not until the re-establishment of authority at Thebes, and the concomitant shift of building activity towards the south at the beginning of the New Kingdom, that sandstone replaced limestone as the principal building material in Thebes and southward.[466] Most of the major temple complexes standing today, situated in southern Egypt, are made of sandstone, including the temples of Isis at Philae and that of Horus at Edfu.[467] However, while lime- and sandstone were overall the most widely used construction materials, the Late Period forms a notable exception. Particularly in the 26th and 30th Dynasties, naturally coloured hardstones were widely employed in monumental constructions.[468] During the reign of Nectanebo II (30th Dynasty) constructions were occasionally even entirely built from materials like granite and greywacke.[469] Examples include the

89 (C.A. Keller).

465. Large volumes of limestone were needed in particular to build the pyramid complexes at Giza and Dahshur in the Old Kingdom: an estimated 9 million tons was needed between the reigns of the 4th Dynasty kings Sneferu and Menkaure alone; see Lehner (1985) 109. Examples of architectural elements in limestone from the late 18th Dynasty on include wall reliefs from the 18th Dynasty tomb of Horemheb from Saqqara (now in Bologna, Museo Civico Archeologico, inv. KS 1885, and Paris, Musée du Louvre, inv. B 57: Andreu *et al*. 1997, 134-135 [G. Andreu]), as well as several elements dating from the Late Period like capitals and architraves; occasionally, entire temples were constructed of limestone in the Late Period (De Putter – Karlshausen 1992, 69). For an example of a Ptolemaic Hathor-capital in limestone, see *Egyptomania* (1994) 339-340 no. 203 (C. Ziegler) = Paris, Musée du Louvre, inv. N 384.

466. Aston *et al*. (2000) 55 and Harrell (2012a) 2.

467. With the exception of the temple at Philae, all major temple complexes were constructed from sandstone from Gebel el-Silsila, the most important supplier of sandstone, with an estimated production of ca. 8 million tons throughout Antiquity, i.e., about half of the total estimated volume of sandstone. On the quarries at Gebel el-Silsila, see Klemm and Klemm (2008) 180-201; cf. ibid. (2001) 638, Lucas – Harris (1962) 55, and De Putter – Karlshausen (1992) 93-94. Parts of the Hathor temple at Dendera are made from sandstone, which indicates that blocks of this material were occasionally transported into the northern limestone region.

468. The increased use of hardstones in the Late Period is usually regarded in the context of a deliberate attempt to revert to the arts of the Old, Middle, and New Kingdoms, a phenomenon that is often referred to as archaism (but that perhaps is rather to be understood as an intensification of a long-established tradition of using the past to justify the present in Egypt: e.g., Wilson 2010, esp. 253-255 and Russmann 2010). Regarding the increased use of these materials in the architecture of the 26th Dynasty, Arnold (1999, 80) notes that "the appearance of hard stone, with its sharp edges, polished surfaces, and generally dark colors, in itself evokes monumentality. This effect was certainly generated by the architecture of the Pyramid Age. The choice of the same material confirms the efforts of the Saite architects to achieve a similar monumental impression"; similar motivations are forwarded to account for the use of hardstones in the 30th Dynasty (ibid., 96); cf. Zivie-Coche (2008) 6 and 9. However, the increased use of hardstones in the Late Period does not imply that lime- and sandstone were no longer used as building materials. The temple of Amun in Hibis (Kharga Oasis), founded by Psamtik II (26th Dynasty), was entirely made from sandstone, while the portico of the large temple of Thoth at Hermopolis Magna, erected by Nectanebo I (30th Dynasty) and decorated by subsequent kings, was made from limestone. Other remains from the reign of Nectanebo I include limestone blocks from the temple of Ptah at Memphis, a limestone Hathor-head column in New York (Metropolitan Museum of Art, inv. 28.9.7; cf. Arnold 1999, 108), and recently found blocks from the temple of Atum at Heliopolis (Ashmawy *et al*. 2015). Although relatively scarce, such remains indicate that there were originally more Late Period constructions in softstones. The consumption of limestone for the production of lime may contribute to the observed paucity of softstones in the archaeological record of the Late Period. For instance, the portico of the above-mentioned temple at Hermopolis Magna is only known to us from early 19th century illustrations, because it has since been destroyed by limeburners (Snape and Bailey 1988, 48-49, cf. Yoyotte 1998, 201 and Zivie-Coche 2008, 1-2; as recent as the early 20th century Petrie [1925, 13] reported the transportation of 100-150 tons of limestone a day at Oxyrhynchus in Middle Egypt).

469. This practice appears to be largely confined to the Late Period. As early as the 1st Dynasty and especially during the Old Kingdom, certain elements in coloured stones were integrated into structures that were otherwise built from either lime- or sandstone. Hence, in the Old Kingdom pyramids at Giza, red granite was used as lining material for chambers and for door frames, and basalt was widely employed for pavements in Old Kingdom mortuary temples of the Giza-Saqqara necropolis (see Lucas – Harris 1962, 59-63; on the use of basalt in Old Kingdom funerary temples see also Hoffmeier 1993, Harrell and Bown 1995, and Mallory-Greenough *et al*. 2000; six granite palm columns dating from the Old Kingdom were reused at Tanis:

temple for Onuris at Sebennytos, the temple house for Bastet in Bubastis, and the Iseum at Behbeit el-Hagar.[470] The two imported relief slabs in the studied sample from Rome belong to this group of Late Period architectural productions in hardstones.[471] While they fit the general trend of material use for wall-reliefs from this particular period, when considered in the context of architectural production in Egypt throughout its history, they are exceptions rather than the rule.[472] Compared to the relatively small number of extant relief slabs in coloured stones, there is a much larger body of wall-reliefs in lime- and sandstone, and slabs depicting similar offering scenes can be readily found.

Obelisks

All seven obelisks in the studied sample of Egyptian imports in Rome are made from pink/red Aswan granite. This was the most important stone for monumental monolithic obelisks and the largest known specimens are invariably made from this material.[473] Nevertheless, especially since the 19th Dynasty, a range of other stones was employed for the production of obelisks. Besides hardstones like quartzite, greywacke, and granodiorite,[474] these also include sandstone.

Arnold 1999, 80 with n. 84). Other coloured stones that were used in architecture include travertine and quartzite; the latter was occasionally used as lining material and for thresholds in the late Old and Middle Kingdom; cf. Arnold (1991) 40. The use of hardstones as construction materials occasionally extended into the New Kingdom. Examples include two 19th Dynasty granite columns in the British Museum (inv. EA 1123, a palm-column from the temple of Herishef at Herakleopolis with the name of king Ramesses II, and inv. EA 1065, a chronologically and typologically similar specimen that was usurped by the 22nd Dynasty king Osorkon II from the temple of Bastet at Bubastis), and a 19th Dynasty temple relief from Heliopolis in 'granit gris' (granodiorite?; rediscovered in Alexandria: see Abd el-Fattah and Gallo (1998) 7-8 no. 1; additional examples are given in Arnold (1999) 302 n. 63.

470. The geographical tendency towards the north can be explained by the fact that political authority in this period was established in the Delta region, and hence most construction work focused on this region; Sebennytos for instance was the capital of the 30th Dynasty.

471. Cf. *supra*, 160-161 no. 074 and 248-249 no. 118; the former originates from the previously mentioned Iseum in Behbeit. Other blocks from this temple are now in New York (Metropolitan Museum of Art, inv. 12.182.4a and 12.182.4c); a decorated wall block in granodiorite from the temple at Sebennytos is preserved in the same museum (inv. 12.182.4b). On these temples in general see Arnold (1999) 125-129 with literature (the slabs in New York are illustrated as figs. 84-86); cf. De Putter (2000) 95.

472. Hardstones were still used for architectural purposes during the Ptolemaic period. However, in contrast to the Late Period, the early Ptolemaic period saw a return to the use of lime- and sandstone for the construction of Egyptian temples. Instead, the Ptolemaic use of hardstones was mainly confined to the inclusion of certain architectural elements in monumental 'Greek'-style buildings (Arnold 1999, 153 and McKenzie 2007, 89-90). Extant examples from Alexandria are generally dated to the 3rd century BC and include especially Corinthian capitals and acanthus column bases. Besides for their material properties, these artefacts particularly stand out for their large dimensions. Hence, while the height of most Corinthian capitals in limestone of Ptolemaic date is approximately 30 cm (Gans 1994, 434 n. 6; these are much more common than specimens in hardstones), the preserved specimens in hardstones are generally much larger. The Corinthian capital in basalt (?) that now surmounts the so-called Khartoum Monument, for instance, measures 138 x 108 cm (height x diameter lower side; see McKenzie 2007, fig. 128 and Gans 1994 for additional examples; on 'Greek'-style architectural elements from Alexandria and other Egyptian sites see, *in extenso*, Pensabene 1993). Although virtually no architecture from Ptolemaic Alexandria remains standing today, a survey of scattered architectural elements indicates that limestone was the predominant building material, for which the city mostly relied on the quarries on either side of the Mallahet Mariut marsh, located between Alexandria and Burg el-Arab (see Klemm and Klemm 2008, 36-39; on the architecture of Alexandria, see McKenzie 2007, 37-74, with further literature). The tradition of executing architectural elements in hardstones continued in the Roman period, for instance in the temple of Isis at Philae, where, during the reign of Augustus, capitals and flights of stairs in granodiorite (?), red granite, and perhaps Imperial porphyry were installed (the rest of the temple was made from sandstone; see Gans 1994, 442-443, with literature). The colossal Corinthian capital in red granite that now surmounts the so-called column of Pompeius is another Roman example (late 3rd century AD, estimated height approximately 3.50 m; see Gans 1994, 444 with n. 52).

473. Geological and ideological reasons may account for the frequent use of this stone for obelisks. The large joint distances in the pink and red granites from Aswan made this stone particularly suitable for the production of colossal monoliths like obelisks and columns (Klemm and Klemm 2001, 635-636). Furthermore, the red colour of the stone is often associated with the sun, and therefore an ideological connection may have existed between red granite and the concept of obelisks as rays of the sun (see Martin 1977, 62 with bibliography).

474. The earliest known royal obelisk, inscribed for the 6th Dynasty king Teti and erected at Heliopolis, was made from quartzite. Only the upper part has been found; its original height is estimated at approximately 3 m. by Habachi (1978, 42); cf. Martin (1977) 42. Examples of obelisks in greywacke include two specimens inscribed for the 30th Dynasty king Nectanebo II that probably originate from the temple of Thoth in Hermopolis Magna (London, British Museum, inv. EA 523 and 524; preserved height 2.74 m and 2.56 m, respectively; an additional fragment of the upper part of the shaft of inv. EA 524 is in Cairo, Egyptian Museum, inv. CG 17130, height 82 cm: see Kuentz 1932, 61-62, pl. 15. These obelisks may have originally been approximately 5.5 m high: Strudwick 2006, 286-287, cf. Iversen 1972, 51-61). Larger specimens were made from granodiorite:

Specimens reportedly made from sandstone include a pair from the royal cemetery at Dra' Abu el-Naga', Thebes (17th Dynasty), as well as several examples inscribed for Ramesses II.[475] Besides monumental monoliths erected by kings, from the 5th Dynasty onwards obelisks were extensively used in private tombs. These so-called funerary obelisks are usually inscribed with the name of the deceased and they typically have modest dimensions, ranging between a few decimeters up to approximately 1.5 m in height. Depending on the respective location of the cemetery in the northern or southern part of Egypt, these obelisks are invariably made from lime- or sandstone.[476] While alternatives in other materials including lime- and sandstone exist, none of these are as monumental as the ones in the studied sample. Funerary obelisks have modest dimensions, which do not compare to the granite specimens from Rome. Larger examples in sandstone (if this classification is correct) measure between 3 and 4 m tall; the reused obelisk of Ramesses II from Tanis may be the only specimen that was of comparable dimensions to the granite imports in the studied sample.[477]

Stelae

Innumerable stelae were made from limestone during all periods of Egyptian history.[478] Stelae in limestone that are typologically and stylistically related to the imported specimens in the studied sample include, firstly, several examples depicting Qadesh standing on a lion.[479] Secondly, while several stelae of Horus on the crocodiles are made from coloured stones, mostly steatite[480] like the one in the sample from Rome, a considerable number of artefacts of this type and with comparably small dimensions are made from limestone. The Egyptian Museum in Cairo alone holds sixteen examples of parallels in limestone, and another five specimens are in the collection of the Musée du Louvre.[481]

Clepsydras

The following list mentions all known (fragments of) waterclocks in chronological order.[482] It is evident that these objects were commonly carved from naturally coloured stones and executed in conceptual styles. The oldest known example, dating from the reign of the 18th Dynasty king Amenhotep III, is made of travertine, and was originally decorated with inlays of coloured stone and faience (no. 1). Other specimens are executed in red granite, granodiorite, and perhaps other dark coloured

among the obelisks inscribed for Ramesses II that were reused in Tanis is an example in granodiorite that may have originally been 9.30 m high (so-called obelisk 14; see Leclant – Yoyotte 1950, 74-75 and 1957, 43-50).

475. The obelisks from Dra' Abu el-Naga' measured approximately 3.5 and 3.7 m tall; they are now lost: see Martin (1977) 84-86. Obelisks of Ramesses II in sandstone include a pair from the sun chapel to the north of the great temple at Abu Simbel (now Cairo, Egyptian Museum, inv. CG 17023 and 17024; height 3.12 m and 3.13 m, respectively: see Kuentz 1932, 45-50 and pl. 13 and Habachi 1978, 98-99), and the lower part of a specimen that was reused in Tanis (preserved height 4 m: see Montet 1937, 114 and pl. 28). However, it is not entirely clear whether these obelisks are made from sandstone: a colour image of what appears to be the lower part of the specimen from Tanis suggests that it may have been made from quartzite rather than sandstone.

476. Hence, the obelisks in tombs at Qubbet el-Hawa near Aswan are invariably made from sandstone, while the specimens from the cemeteries of Giza, Saqqara, and Mataria are all made from limestone. Martin (1977, 223-229) lists over 50 funerary obelisks; the smallest two are 18-20 cm, the largest two 143-160 cm; several of these are in the Egyptian Museum in Cairo, for which see Kuentz (1932).

477. By comparison, the smallest obelisks in the sample from Rome measure 5.5 m and 6.3 m tall (*supra*, 184-185 no. 086 and 180-181 no. 084, respectively).

478. An early example is the stela of the 1st Dynasty Serpent king from Abydos (now in Paris, Musée du Louvre, inv. E 11007): see Andreu *et al*. (1997) 43-44 no. 7 (C. Ziegler); other stelae of royal and private character can be readily added.

479. All from Deir el-Medina, Thebes; see, for instance, London, British Museum, inv. EA 191 (19th Dynasty, H. 75, stela of the chief craftsman Qeh); Paris, Musée du Louvre, inv. C 86 = N 237 (19th-20th Dynasty; H. 32; painted limestone); and Turin, Museo Egizio, inv. 1601 = CGT 50066 (19th Dynasty, H. 45, painted limestone; stela of Ramose and Mutemwia: see Sternberg-El Hotabi 1999, vol. 1, fig. 20).

480. Other coloured materials include greywacke, quartzite, serpentinite, and perhaps basalt (depending on characterisation): Gasse (2004) 16.

481. For the examples in Cairo, see Sternberg-El Hotabi (1999) vol. 2, 35-44; for the Louvre see Gasse (2004) no. 3, 8, 19, 22, and 36. Other examples in limestone can be readily added, for which see the catalogue in Sternberg-El Hotabi (1999) vol. 2, 1-92.

482. The literature on clepsydras is fragmentary and dispersed. Moreover, it is not always clear whether several fragments belong together or not, which complicates the question of the relative frequency of the use of certain materials for these types of objects. Therefore, it was decided to create a list with all known fragments and available information. The article by Lodomez (2007) collects the majority of fragments included here; I only found this article when completing the manuscript.

stones. At least one clepsydra is made from limestone (no. 16); the material of another specimen (no. 2) is not specified, but judging from the published images it may be limestone.

1. Cairo, Egyptian Museum, inv. JE 37525
Reign of Amenhotep III
(18th Dynasty, early 14th century BC)
Travertine with inlays of faience and coloured stones
From Karnak, Thebes
Nearly intact; 35 x 48 (H x diam. top)
Borchardt (1920) 6-7 no. 1; Sloley (1939), esp. 174-176; Neugebauer and Parker (1969) 12-14 no. 3 and pl. 2; Long (1987) 339 no. 1; Mengoli (1989); Clagett (1995) 66-77 and fig. 3.21a; Lodomez (2007) no. 1

2. Cairo, Egyptian Museum, inv. JE 67096
Reign of Necho II
(26th Dynasty, ca. 610-595 BC)
Material unknown; possibly limestone?
From Tanis
Fragmentary; original dimensions calculated 37 x 57 (H. x diam. top)
Montet (1946) 35-39 no. R66 and pls. 1-2; Neugebauer and Parker (1969) 42-44 no. 34 and pl. 22b; Long (1987) 340-341 no. 5; Lodomez (2007) no. 2

3. Two complementary fragments (thus Borchardt, confirmed by Lodomez)
Reign of Alexander the Great
(Macedonian period, 331-323 BC)
Granodiorite

A. St. Petersburg, Hermitage, inv. 2507a
Provenance unknown
(from Rome?; previous attribution to Iseum Campense rejected by Lembke)
Fragmentary; 33.5 x 31 (H x W)
Golenischeff (1891) 374-376; Wiedemann (1901) 271 no. 1; Borchardt (1920) 7-8 no. 2; Roullet (1972) 145 no. 327 with figs. 337-339; Long (1987) 341 no. 6; Lembke (1994) 248 E55; *Le antichità egiziane* (1995) 218-220 no. 60 (O. Lollio Barberi); *Ägypten Griechenland Rom* (2005) 548-549 no. 113 (A.O. Bolshakov); Lodomez (2007) no. 4, 64-65 fragment E

B. Naples, Museo archeologico nazionale, inv. 2327
Provenance unknown
(from Rome?)
Fragmentary; 13.7 x 16.7 x 5.5 (H x W x Th)
Borchardt (1920) 7-8 no. 2; Lodomez (2007) no. 4, 65-67 fragment F

4. Four complementary fragments (Borchardt, Bothmer, Lodomez)
Reign of Alexander the Great
(Macedonian period, 331-323 BC)
Granodiorite

A. London, British Museum, inv. EA 933
From Tell el-Yahudiya
(Leontopolis)
Fragmentary; 36.5 x 35 x 6 (H x W x Th)
Borchardt (1920) 8 no. 3; Long (1987) 341 no. 7; Clagett (1995) fig. 3.21d; *Cleopatra of Egypt* (2001) 38 no. 1 (C. Andrews); *Ägypten Griechenland Rom* (2005) 548 no. 112 (P.E. Stanwick); Lodomez (2007) no. 3, 57-61 fragment A

B. Paris, Musée du Louvre, inv. E 30890
Provenance unknown
Fragmentary; 10.2 x 9 x 5 (H x W x Th)
Borchardt (1920) 8 no. 3; Long (1987) 341 no. 7; Lodomez (2007) no. 3, 61 fragment B

C. Berlin, Ägyptisches Museum und Papyrussammlung, Staatliche Museen zu Berlin, inv. 30508
Provenance unknown
Fragmentary; 7.8 x 4.3 x 5 (H x W x Th)
Lodomez (2007) no. 3, 61-62 fragment C

D. New York, private collection (collection F. Elghanayan)
Provenance unknown
Fragmentary; 16 x 18.7 x 5 (H x W x Th)
Complementary to no. 5-7 (thus Lodomez)
LÄ V, 492-493 n. 16, s.v. Satrapenstele (R.S. Bianchi); *Cleopatra's Egypt* (1988) 222-223 no. 115 (R.S. Bianchi); Lodomez (2007) no. 3, 62-63 fragment D

5. New York, Brooklyn Museum of Art, inv. 57.21.1
Macedonian period, 331-323 BC
Granodiorite (?)
Provenance unknown
Fragmentary; 13.3 x 9.5 x 3.6 (H x W x Th)
Lodomez (2007) no. 5, 67 fragment G

6. London, British Museum, inv. EA 938
Reign of Philippus Arrhidaeus
(Macedonian period, 323-317 BC)
Granodiorite
Provenance unknown
Fragmentary; 35.2 x 27 (H x W)
Wiedemann (1901) 271-272 no. 2; Borchardt (1920) 8 no. 6; Long (1987) 341-342 no. 8; Clagett (1995) fig. 3.21b; Lodomez (2007) no. 6, 69-70 fragment H

7. Two complementary fragments (Capart, *contra* Hölbl in Langmann *et al*.)
Macedonian period / early Ptolemaic period
Red granite

A. Turin, Museo Egizio, inv. Suppl. 8
Found in Rome, behind the S. Maria sopra Minerva
Fragmentary; 21 x 19.5 x 5 (H x D x Th)
Supra, 236-237 no. 112

B. Brussels, Koninklijke Musea voor Kunst en Geschiedenis, inv. E 4782
Provenance unknown
Fragmentary; 11.5 x 16 x 4 (H x W x Th)
Speleers (1923) 94 and 186 no. 353; Capart (1938) 52-54 and figs. 8-9; Langmann *et al*. (1984); Limme (1989) 104 with n. 3; Lodomez (2007) no. 7

8. Moscow, Pushkin State Museum of Fine Arts, inv. 1.a.5955
Macedonian period / early
Ptolemaic period (Ptolemy I)
Granodiorite (?)
Provenance unknown
Fragmentary; 19 x 17 x 3 (H x W x Th)
Borchardt (1920) 8 no. 4; Hodjash (1982) 185 no. 129; Long (1987) 344 no. 17; Lodomez (2007) no. 8

9. Present whereabouts unknown
Reign of Ptolemy I (Lodomez) /
Ptolemy II (Hölbl)
'Basalt'
From Ephesos
Fragmentary; dimensions unknown
Hölbl (1986b); Langmann *et al*. (1984) 54 and 61-64 with fig. 15a-b; Leclant – Clerc (1986) 316; Lodomez (2007) no. 9

10. St. Petersburg, Hermitage, inv. 2507b
Reign of Ptolemy II
(Ptolemaic period, 285-246 BC)
Granodiorite
Noted at Rome in the 16th century
Fragmentary; H. 21 cm
Golenischeff (1891) 376-377; Wiedemann (1901) 272 no. 3; Borchardt (1920) 8 no. 7; Roullet (1972) 145-146 no. 328 with figs. 339-342; Long (1987) 342 no. 9; Lembke (1994) 248 E54; *Le antichità egiziane* (1995) 218-220 no. 60 (O. Lollio Barberi); Lodomez (2007) no. 12

11. Two complementary fragments (thus Danneskïold-Samsøe, confirmed by Lodomez)
Reign of Ptolemy II
(Ptolemaic period, 285-246 BC)
Granodiorite

A. Paris, Musée du Louvre, inv. N 664 (= AF 894)
Provenance unknown
Fragmentary; 10 x 16 x 3 (H x W x Th)
Borchardt (1920) 8-9 no. 8; Neugebauer and Parker (1969) 60 no. 44 and pl. 22c; Long (1987) 343 no. 12; Lodomez (2007) no. 10

B. Copenhagen, Thorvaldsens Museum, inv. H 351[483]
Provenance unknown, probably purchased in Rome
Fragmentary; 18 x 10.5 (H x W)
Müller (1847) 33 no. 351 ('fragment of the lid of a sarcophagus'); Danneskïold-Samsøe (1975); Lodomez (2007) no. 10

483. I thank Dr. K. Bülow Clausen (Thorvaldsens Museum, Copenhagen) for her valuable information on this fragment.

12. Rome, Museo Barracco, inv. 27
Reign of Ptolemy II
(Ptolemaic period, 285-246 BC)
Granodiorite
Found at Rome, in the area of the Iseum Campense (1856)
Largely complete; H. 38 cm
Supra, 232-233 no. 110

13. Turin, Museo Egizio, inv. Suppl. 3524
Macedonian period / first half 3rd century BC
Greywacke
From Heliopolis
Ca. 15 x 6 x 4 (H x W x Th)
Langmann *et al*. (1984) 61 n. 71; Lodomez (2007) no. 16

14. Florence, Museo archeologico nazionale, inv. 12290
Ptolemaic period (first half 3rd century BC)
Material unknown; the picture in Neugebauer and Parker indicates that it concerns a dark coloured stone
From Saqqara?
Fragmentary; 12.5 x 15 (H x W)
Neugebauer and Parker (1969) 60 no. 45 and pl. 22d; Lodomez (2007) no. 17

15. Excavations Serapeum, Alexandria, reg. no. P. 9161
Macedonian period-first half 3rd century BC (Lodomez) / reign of Ptolemy III? (Rowe)
Granodiorite
From the Serapeum at Alexandria
Fragmentary; ca. 8 x 12 (H x W)
Rowe (1946) 40-41, 50 addenda no. 12, and fig. 10; Lodomez (2007) no. 15

16. Chicago, The Oriental Institute, inv. 16875
Reign of Ptolemy II (Quaegebeur) / 2nd-1st century BC (Lodomez)
Limestone
Presumably from Memphis
Nearly intact; 52.5 x 67 (H. x diam. top)
Quaegebeur (1971) 259-262 and pls. 2-3; Long (1987) 342-343 no. 11; Lodomez (2007) no. 18

17. London, British Museum, inv. EA 21736
Ptolemaic period
'Basalt', presumably granodiorite
Provenance unknown
Fragmentary; 14 x 11.5 (H x W)
Online at http://www.britishmuseum.org/research/collection_online/collectionobject_details.aspx?objectId=172813&partId=1&searchText=clepsydra&page=1

18. Berlin, Ägyptisches Museum und Papyrussammlung, Staatliche Museen zu Berlin, inv. 19556
Early Ptolemaic or Roman Imperial period
Granodiorite
Found at Rome, in the vigna Bonelli near Porta Portese (1850)
Largely complete; dimensions unknown
Supra, 288-289 no. 138

19. Florence, Museo archeologico nazionale, inv. 2613
Macedonian period first-half 3rd century BC (Lodomez) / Roman Imperial period (Borchardt)
Material unknown
Fragmentary; H. ca. 20 cm
Provenance unknown
Borchardt (1920) 9 no. 10; Lodomez (2007) no. 14

20. Present whereabouts unknown
Roman Imperial period
'Basalt'
Fragmentary; dimensions unknown
No relief decoration
From Rome, monastery of Santa Lucia in Selci
Borchardt (1920) 9 no. 12; Lodomez (2007) no. 19

21. Present wherabouts unknown (formerly in the vigna Guidi at Rome)
Dating unknown
'Basalt'
Fragmentary; dimensions unknown
Vessel in the shape of a mill-stone, perhaps a clepsydra?
From Rome, Baths of Caracalla (Roullet)
Borchardt (1920) 9-10 no. 13; Roullet (1972) 144-145 no. 325