

Bone carvings in Late Antique Egyptian furniture: From standardisation to inventiveness

Les reliefs en os sculptés dans l'ameublement de l'Égypte tardo-antique : un artisanat entre standardisation et inventivité

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Abstract: Bone reliefs and inlays have long been looked at purely from an iconographic or stylistic perspective. Over the past few decades, however, in-depth studies have also taken their physical properties into account. Research into Alexandrian material has granted us a keener understanding of their production context. Workshop refuse, including rough-outs and production waste, have been incorporated into the analysis. The recently published study of 270 decorative furniture elements held in the Rodin Museum also constituted part of this approach. Examination of this important corpus highlighted recurring osteological and technical characteristics. Analysis of the species and skeletal element distribution, coupled with consideration of the different types of appliqués revealed the craftsmen's total adaptation to bone morphology. It also seems that some representations were favoured depending on the selected skeletal element categories. As for the technical traces, they reveal systematization in raw material work processes. In addition to the obvious reproduction of some iconographic templates, this collection also includes bone carvings bearing witness to elaborate decorative programs, or suggesting original designs, thus, challenging the strictly serial aspect of this bone-carving industry.

Keywords: Egypt, Late Antiquity, craftsmanship, bone carvings, archaeozoology, technological approach, iconography, furniture, casket.

Résumé : Longtemps considérées seulement sous un angle iconographique ou stylistique, les appliques en os ont bénéficié ces dernières décennies d'études approfondies prenant en compte leur matérialité. En effet, les recherches conduites sur le mobilier alexandrin ont permis de mieux cerner leur contexte de production. Des vestiges artisanaux, comprenant notamment des ébauches et des déchets de fabrication, ont été intégrés à l'analyse. L'étude de 270 éléments décoratifs de mobilier conservés au musée Rodin, publiés récemment, a participé de la même approche. L'examen de cet important corpus a mis en lumière des caractéristiques ostéologiques et techniques récurrentes. L'analyse de la répartition anatomique couplée à la prise en compte des différentes typologies d'appliques a révélé une complète adaptation des artisans à la morphologie de l'os. Il semble également que certaines représentations aient été privilégiées en fonction des catégories d'ossements retenues. Quant aux stigmates techniques, ils indiquent une systématisation dans les procédés de mise en œuvre de la matière première. Outre une reproduction évidente de certains modèles iconographiques, la collection comporte des appliques témoignant de programmes décoratifs élaborés ou porteurs de sujets inédits, ce qui vient contredire l'aspect strictement sériel de cette industrie.

Mots-clés : Égypte, Antiquité tardive, artisanat, os sculpté, archéozoologie, approche technologique, iconographie, ameublement, coffret.

INTRODUCTION

Furniture decorations hold a special place among the hard animal material categories of objects made in Egypt during Late Antiquity and the Byzantine Period (300–641 CE), owing to the quantity and the quality of their sculpture and their iconography. Discovered in large quantities from the second half of the nineteenth century CE onwards in Alexandria, and at other sites in the Nile Valley, they have enriched various museum and private collections and attracted the attention of art historians specialising in the Late Antique and Byzantine worlds (Strzygowski, 1902, pp. 3–16, pl. I–II). They were described at the turn of the twentieth century in a lot of Egyptian or European museums catalogues: those of the Graeco-Roman Museum in Alexandria (Botti, 1900, pp. 22, 69, 511; Breccia, 1914, pp. 291–292), the Cairo Museum (Strzygowski, 1904, pp. 171–197), and the Berlin Museums (Wulff, 1909, pp. 103–123, pl. XIV–XX). They also feature prominently in excavation reports, which often devote several plates to them. This is the case for the report on the archaeological campaign at Shurafa in Middle Egypt (Petrie and Mackay, 1915, pp. 42–44, pl. XLIX–LII), the volumes documenting the E. von Sieglin mission to Alexandria (Pagenstecher, 1913, pp. 168–170, pp. 228–233, pl. LIV–LVII), and the work on the discoveries made at Canopus (Breccia, 1926, pp. 80–81, pl. XLIV). In 1976, L. Marangou published the large corpus of bone carvings from the Benaki Museum in Athens, focusing on a stylistic and iconographic approach (Marangou, 1976). Loberdou-Tsigarida followed it up in the same vein with a synthesis on the Late Roman inlaid and carved bones (Loberdou-Tsigarida, 2000). From the 1960s to the present day, E. Rodziewicz has devoted numerous publications to the artefacts and offcuts unearthed in the Alexandria excavations (Rodziewicz, 1978, 1998 and 2016). The research on the reliefs, which also benefits from a technical analysis, are linked to the remains of workshops (Rodziewicz, 2007 and 2020b). Recently, N. Morand, working on Alexandria's faunal remains, has taken an archaeozoological interest in these pieces (Morand, 2021).

Our article is based on a study of the Rodin Museum collection, which includes 270 bone furniture inlay reliefs from the Roman and Byzantine periods. Acquired by A. Rodin himself from antiquities dealers, these bones reflect his taste for ancient sculpture. This study has given rise to a catalogue, available online since 2023 on the *Rodin and Egyptian Art* website.¹ The size and homogeneity of this collection today make it one of the most important along with reliefs from the Graeco-Roman Museum of Alexandria and the Benaki Museum of Athens. The similarity between the iconographic models of the reliefs in the Rodin Museum and those discovered in Egypt suggests that they could have been made there. Furthermore, some of the labels affixed to the reverse side (inv. Co. 2067 and inv. Co. 2085) are identical to those on reliefs held in the Louvre Museum which come

from Alexandria (Delassus, 2020, p. 48, No. 4). The Tano antique dealers based in Cairo sold these in 1905 to E. Guimet. However, these bone carvings may also have been produced outside Egypt (Rosenthal, 1976, pp. 102–103; Goldfus and Bowes, 2000, pp. 186–187; Ayalon, 2005, p. 88). The examination of the osteological characteristics of the reliefs has shown a close relationship between bone morphology, the different furniture pieces, and preferred representations. The recurrence of technical processes and iconographic models attests to a high degree of specialization on the part of the craftsmen. Despite this regularity, there is an obvious creativity that expresses itself in elaborate decors requiring a more accomplished design phase as well as real dexterity.

1. DISTRIBUTION OF SKELETAL ELEMENTS: CHOICES GUIDED BY THE TYPES OF FURNITURE DECORATIONS

1.1. The parameters of the study

Determining the selected animal species and skeletal elements is the first step towards understanding the organization of furniture decor production. This taxonomic and morphological identification was made possible by a close collaboration with the late François Poplin over several sessions in the Rodin Museum's storage area. These bone carvings lack any archaeological context. Therefore, they should be examined in light of the information provided by the workshops' waste bone zones uncovered in Alexandria (Rodziewicz, 2011, pp. 57–64; Rodziewicz, 2020b, pp. 381–395). It might seem artificial or risky to attempt to quantify a collection whose origins are undoubtedly linked to the vagaries of ancient discoveries and the antiquities trade. However, the numerical size of this series makes it proportionally representative of the reliefs adorning furniture in Late Antique Egypt and gives us a glimpse into the main principles governing the selection of raw materials.

1.2. The predominance of cattle bones

The assemblage displays the intensive use of cattle bones. The preponderance of cattle bones can be explained by the fact that, in urban areas, craftsmen obtained their supplies from butchers' dumps (De Cupere, 2001, pp. 160–163; Khan, 2014, p. 148; Morand, 2021, pp. 248–249). Dromedary bones, recognisable by their thicker walls and invasive trabeculae, represent only 5% of the assemblage in the Rodin Museum. This is consistent with the low numbers of this species among the faunal remains unearthed in Alexandria (Morand, 2021, p. 230). F. Poplin has suggested the presence of other species: an ostrich bone used to make a piece featuring Aphrodite holding a shell (inv. Co. 2161), and donkey bone used to produce a column surmounted by a Corinthian capital (inv. Co. 2292). The cattle skeleton was not entirely

exploited: the leg bones or long bones and the shoulder blade or *scapula* were the most popular skeletal elements used in bone manufacturing the Late Roman and Byzantine periods (fig. 1a). Their absence from certain reject zones in Alexandria confirms their use in object production (Rifa-Abou el-Nil et al. 2020, p. 347). More than three-quarters of the bone reliefs in the Rodin Museum were made from these parts of the skeleton (fig. 1b).

1.3. Bones used for carving convex reliefs

Among long bones, the humerus is the best represented bone, despite its twisted morphology and spongy areas. Its diaphysis was used to produce convex carved reliefs, often depicting mythological figures arranged vertically, such as Dionysus (Rodin Museum, inv. Co. 2232, Co. 2240) and the members of his procession (inv. Co. 2050, Co. 2068), or Aphrodite (inv. Co. 2124). The craftsmen generally favoured the side face and carved the head of the figure in the distal part, while the legs extend into the wider proximal region of the diaphysis. This is clearly illustrated by this bone carving with a maenad playing a tambourine displaying the curved morphology of a right humerus (fig. 2a-b). The craftsmen also had to contend with the *foramen nutrient*, as here on the right elbow of the maenad. The heads of the figures are often located at the beginning of the *olecranon fossa*, so that the cancellous tissue appears on the surface. The same images can be carved into a left or right humerus, like the many satyrs on the bone plaques from the Rodin Museum (fig. 2c), showing that the laterality of the limbs had no effect on the choice of iconography (Delassus, 2020, p. 64 and p. 82; Rodziejewicz, 2020a, pp. 363–368).

The tibia, which accounts for more than a quarter of this assemblage was valued for its straighter morphology and the thickness of its compact tissue. It was used to make reliefs decorated with standing figures such as Dionysus (fig. 2d). Its posterior side was also particularly

prized for horizontal pieces dedicated to marine divinities, such as Nereids and Tritons. These figures were, however, also carved on metapodials (fig. 2e). The rectilinear edges of these bones in the lower part of the legs were well suited to producing the long and flat reliefs.

1.4. Bones selected for carving low relief plaques

The metapodials were also the most appropriate for creating plaques in low relief as part of large compositions. Craftsmen used them systematically to carve architectural miniatures, such as pilaster capitals (fig. 2f), as well as small rectangular plaques. But, these small square or trapezoidal plaques, intended to decorate wooden caskets (Strzygowski, 1904, pp. 179–182, Nos. 7070–7088, pl. XIV; Elderkin, 1926, p. 155, fig. 4), were mostly shaped out of *scapulae* (fig. 2g). This bone is comprised of two compact bony plates protecting a layer of cancellous tissue. The uprights of these wooden boxes, as in this panel from the Coptic Museum in Cairo, were often cut out, so that the bone carvings could be fitted into them (fig. 2h). Apart from these bones, a few femurs have also been identified, especially one with a Nereid carved into it (inv. Co. 2070), and a small relief decorated with a stylised pediment (fig. 2i). This bone element may have been used to make other objects, perhaps *pyxides*. F. Poplin identified two *radii*, and ribs for very fine pieces (inv. Co. 2259). A relief with a satyr, because the cortical bone had split, could have been fashioned from a mandible (inv. Co. 2275).

1.5. Bone categories suited to different types of furniture

From this overview, it appears that the humerus, tibia and femur were used to obtain strongly convex reliefs, while the metapodials and *scapulae* were preferred for

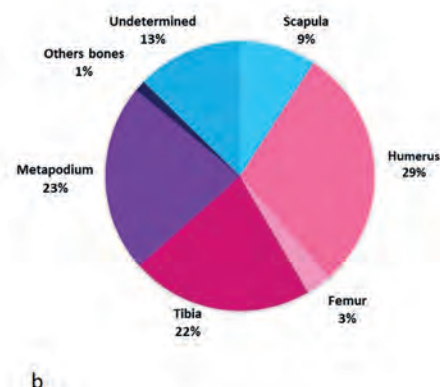
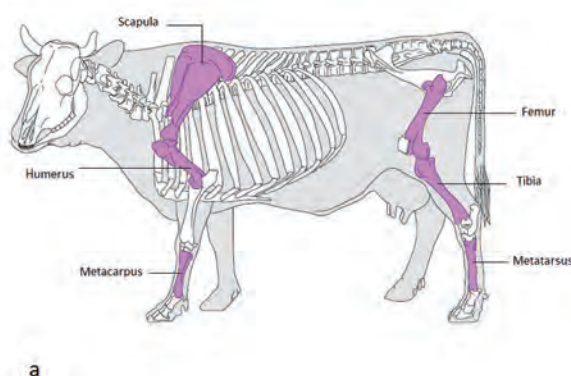


Fig. 1 – a) Main cattle bone used to produce the figurative reliefs of the Rodin Museum (M. Delassus after Barone, 1976, p. 22, pl. 7); b) Anatomical distribution of bone carvings of the Rodin Museum (CAD M. Delassus).

Fig. 1 – Principaux os de bœuf utilisés dans la fabrication des reliefs figurés du musée Rodin (M. Delassus d'après Barone, 1976, p. 22, pl. 7) ; b) Répartition anatomique des os sculptés du musée Rodin (DAO M. Delassus).



Fig. 2 – Cattle skeletal elements selected for the Rodin Museum bone carvings: a) Relief with maenad playing *tympanon* carved in a right-side humerus (inv. Co. 2067); b) Part of the lateral surface of a right humerus on which the relief was carved; c) Relief with satyr *ascophoros* carved on a left-side humerus (inv. Co. 2056); d) Bone carving with Dionysos figure carved in the tibia (inv. Co. 2102); e) Relief with a Triton and a Nereid carved on a metacarpus (inv. Co. 2168); f) Miniature pilaster capital carved on a metatarsus (inv. Co. 2266); g) Relief with a maenad carved on a *scapula* (inv. Co. 2170); h) Rectangular bone plaques inserted into a panel of a wooden casket, Cairo, Coptic Museum (inv. 5654; Rodziewicz, 2016, p. 154, fig. 168); i) Relief with a stylised pediment carved on a femur (inv. Co. 2230 ; photos Agence photographique du musée Rodin – J. Manoukian, CAD M. Delassus).

Fig. 2 – Parties du squelette de bœuf sélectionnées pour les os sculptés du musée Rodin : a) relief avec une ménade jouant du *tympanon* sculpté dans un humérus droit (inv. Co. 2067) ; b) face latérale d'un humérus droit à partir de laquelle a été sculpté le relief ; c) relief avec un satyre *ascophoros* sculpté dans un humérus gauche (inv. Co. 2056) ; d) os sculpté d'une figure de Dionysos prélevé dans un tibia (inv. Co. 2102) ; e) relief avec un Triton et une Néréide sculpté dans un métacarpe (inv. Co. 2168) ; f) chapiteau de pilastre miniature sculpté dans un métatarse (inv. Co. 2266) ; g) relief avec une ménade sculpté dans une *scapula* (inv. Co. 2170) ; h) plaques rectangulaires en os insérées dans un panneau de coffret en bois, Le Caire, musée copte (inv. 5654 ; Rodziewicz, 2016, p. 154, fig. 168) ; i) relief au fronton stylisé sculpté dans un fémur (inv. Co. 2230 ; clichés agence photographique du musée Rodin – J. Manoukian, DAO M. Delassus).

flatter decorations. The *radii*, ribs or mandibles seems very rare in this set of decorations. There is no doubt that the finest plates were used to decorate wooden boxes, as several examples have been unearthed in Egyptian funerary contexts (Rodziewicz, 2016, pp. 66–67, 154; Delassus, 2020, pp. 67–68). Other ivory and bone box decorative fittings have been found in domestic contexts in Serbia and Crete (Vasileiadou, 2011; Petković et al., 2016). It is less clear what type of furniture the convex

reliefs adorned, as they have very rarely been found in connection with their support. Although the hypothesis of cylindrical furniture elements has been put forward (Aiosa, 1997, pp. 144–145), it is likely that these reliefs, with their abraded inner edges, were affixed to the wooden wall of a casket or larger piece of furniture such as a chest or an *armarium* (a kind of cupboard; Marangou 1976, p. 27; Olch-Stern and Hadjilazaro-Thimme, 2007, pp. 281–294; Rodziewicz, 2016, pp. 137–145).

2. RECURRENCE OF TECHNICAL PROCESSES

2.1. The preparation of the blank

The chosen bone elements underwent various preparatory stages to obtain the blank from which the object was to be fashioned. A number of blanks with convex outer surfaces that were undoubtedly intended to be carved or incised were also found during excavations on Fouad Street in Alexandria (Rodziewicz, 2020b, pp. 382–383). Here, a reconstruction of the successive sequences in the working of cattle bone to get two items of furniture is proposed: a convex relief decorated with a satyr made from a right-side humerus and a flat relief carved with Nereids obtained from the posterior face of a right-side metacarpus (fig. 3).

The operational sequence on the long bones began with transverse sawing off of the epiphyses (Rodziewicz, 2020b, pp. 392–393). This was done using a metal blade saw, to preserve the diaphysis, which was the only part suitable for carving convex reliefs. When we look at the marks left by the tools, fine regular angled striations on the upper and lower edges of the bone carvings are still visible, left by the blade of the metal saw used to remove the epiphyses (fig. 4a). The diaphysis surface was then probably roughened with a plane or chisel and partitioned lengthwise. Craftsmen adopted several techniques for the longitudinal division. Some pieces were cut with a saw, as shown by the sawing stops at the top of each of the inner edges of some reliefs (fig. 4b). But in other cases, for long bones, the partition may have been produced by percussion and fracturing. In fact, the inner edges of some reliefs are covered with small material irregularities regularized by scraping (fig. 4c).

2.2. Carving the decoration and attaching the bone relief fittings to the furniture

The small square or trapezoidal pieces taken from the shoulder blades were only partially sawn. If you look closely at them, at the dorsal face of these flat decorations, you can see the surface was first scraped and then abraded (fig. 4d). It is debatable whether the small irregularities are the result of the bone being split or to the use of a metal blade tool that was not sharp enough. On the backs of the capital-shaped reliefs, there is evidence that the cancellous tissue was also scraped. Sometimes, the back of flat reliefs was smoothed with a rasp (fig. 4e) or incised with a chisel (fig. 4f) to help them adhere better to its wooden support.

The carved reliefs were prepared using markers. On pilaster capitals, the craftsman operated a small saw to cut horizontal lines to mark the foliage. An analogous bone carving was unearthed at Caesarea Maritima (Ayalon, 2005, pp. 93–94, No. 353, pp. 274–275). The three-dimensional capitals, which formed part of the miniature architectural decor of the cabinets, were shaped

on a lathe from a segment of metapodial diaphysis. The uncarved face pressed against the cabinet reveals the preparatory work carried out on the lathe (fig. 4g). The different levels for the acanthus leaves were determined by grooving. Then, details were carved using a small chisel. You can see the successive stop marks made by the tool on the volutes of pilaster capitals. Several examples of these micro-architectural elements have also been discovered in Alexandria, either as bone-half products found in a house dating from the fifth to the seventh century CE in Kôm el-Dikka (Rodziewicz, 2016, pp. 170–171, fig. 194b), or completed on the site of the Diana theatre (Rodziewicz, 2011, pp. 65, 67, fig. 12).

The work, using small chisels to shape the figures in relief, displays different degrees of care. On a piece featuring Dionysus *Lykeios*, the nervous chiselling of the craftsman has resulted in a geometrization of the shapes. It's easy to see the removal scars (fig. 4h). The face of the maenad, sculpted on another bone, presents a very delicate workmanship, finished off with polishing (fig. 4i). It is characterized by the subtle treatment of the eye, with a deepening of the pupil, as well as the indication of the hair strands using a small chisel. The craftsmen paid attention to textures, in particular the skin of the sea monsters. The spots are represented by small circular perforations, like the pupils of the figures' eyes, or the triangular cuts made by indirect percussion. While it has been suggested that the way in which these textures are rendered could be a dating criterion, it also seems to be a technical specificity, as in some cases the two techniques coexisted in the same period (Marangou, 1976, p. 75; Rodziewicz, 2007, p. 22). Most bone carvings were glued to the wooden support, but some examples have a hole for a peg, made with a bow drill, to secure the relief fitting to the furniture (Co. inv. 2232, Co. 2238).

3. RECURRING MODELS, ELABORATE DESIGNS AND UNCOMMON ICONOGRAPHY

3.1. The success of the Dionysian theme

A comprehensive study of the bone carving assemblage from the Rodin Museum has revealed the use of well-known iconographic models for these types of decorative fittings for furniture, no doubt borrowed from other artistic fields. Dionysus is surrounded by the members of his procession. The god of wine is almost invariably depicted naked, in the attitude of Apollo *Lykeios*, one arm bent above his head and the other supported by the *thyrsus* or leaning against a column (Marangou, 1976, pp. 31–32, pp. 87–91, Nos. 1–25; Rodziewicz, 1978, pp. 323–324; Delassus, 2020, pp. 48–49, 75). The satyrs follow two models: some hold a tall basket (*cistaphoroi*), while others carry a wineskin on their shoulder (*askophoroi*), following familiar patterns from funerary sculpture and silverware from Late Antiquity (Rodzie-

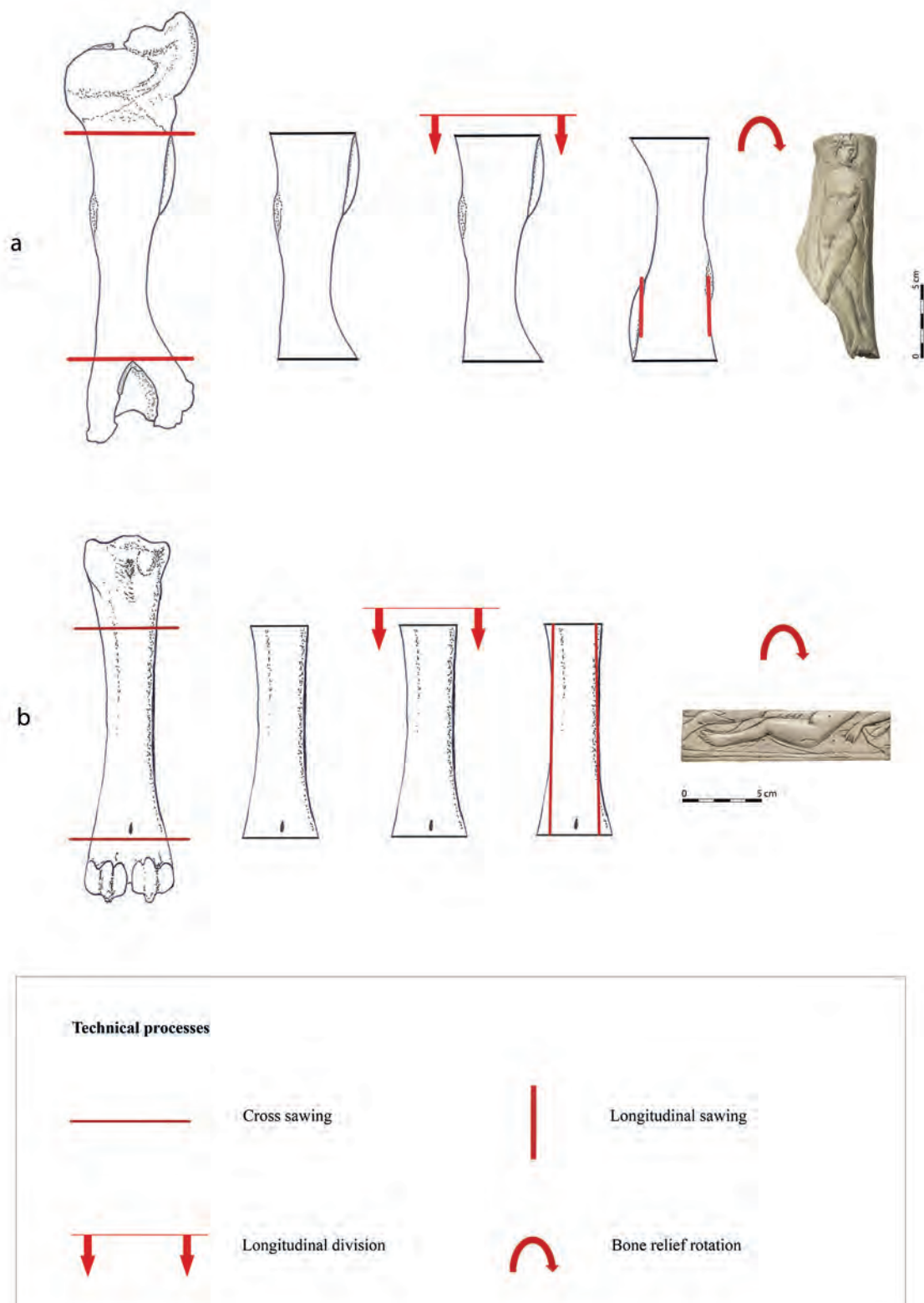


Fig. 3 – Technical transformation sequence: a) Right humerus, posterior side, Rodin Museum (inv. Co. 2068);
 b) Right metapodium, posterior side, Rodin Museum (inv. Co. 5633; CAD M. Delassus).
Fig. 3 – Restitution de la chaîne opératoire : a) humérus droit, face postérieure, musée Rodin (inv. Co. 2068) ;
 b) métapode droit, face postérieure, musée Rodin (inv. Co. 5633 ; DAO M. Delassus).



Fig. 4 – Tool marks on the bone carvings from the Rodin Museum : a) Traces of sawing, inv. Co. 2257; b) Stop tools with saw, inv. Co. 2105; c) Scraped inner edges, inv. Co. 2186; d) Traces of scraping and abrasion, inv. Co. 2141; e) Back of relief smoothed with a rasp (inv. Co. 2305); f) Lattices incised with a chisel (inv. Co. 2200); g) Miniature capital with preparatory work executed on a lathe (inv. Co. 2299); h) Removal scars on the relief with *Dionysus Lykeios* (inv. Co. 2186); i) Delicate incision and polishing work on a bone carving featuring a maenad (inv. Co. 2051 ; photos agence photographique du musée Rodin – J. Manoukian and M. Delassus).

Fig. 4 – Marques d'outils sur les os sculptés du musée Rodin : a) traces de sciage (inv. Co. 2257) ; b) butées de sciage (inv. Co. 2105) ; c) bords internes avec petits arrachements (inv. Co. 2186) ; d) traces de raclage et d'abrasion (inv. Co. 2141) ; e) revers d'un relief aplani à la râpe (inv. Co. 2305) ; f) croisillons incisés à l'aide d'un burin (inv. Co. 2200) ; g) chapiteau miniature montrant un travail préparatoire exécuté au tour (inv. Co. 2299) ; h) enlèvements de matière visibles sur un relief avec *Dionysos Lykeios*, (inv. Co. 2186) ; i) délicates incisions et travail de polissage sur un os sculpté d'une ménade, (inv. Co. 2051 ; photos agence photographique du musée Rodin – J. Manoukian et M. Delassus).

wicz, 2020a, pp. 363–370). Some of the satyrs are so similar, in their lively attitudes and the way their flesh is modelled, that one might think they came out of the same workshop (Rodin Museum, inv. Co. 2093, Co. 2262–2313). The flat reliefs are adorned with maenads dancing frenetically adopting a similar pose. Silenus, the foster father and tutor of Dionysus, accompanies these twirling figures. He follows the well-established Hellenistic type of the deformed and lanky old man (Marangou, 1976, pp. 33–34, pp. 96–97, Nos. 53–60). Plunged into drunkenness, he sometimes leans on a *thyrsus* and holds a vase with a globular body and protruding lip whose shape evokes that of a small *dinos*.

3.2. Figures in the spotlight: *Tyche*, *Aphrodite*, *Erotes* and the members of the marine procession

Another model is used with variations by fourteen bone carvings in the corpus: that of a woman dressed in a fine *chiton* girded under her breast and covered by a *himation* draped obliquely, creating a triangular fold at belly level (Delassus, 2020, p. 50 and p. 75). She is often shown holding a small crown in one hand, and supporting a *cornucopia* in the other, which identifies her as a *Tyche*. These draped female figures, illustrated by reliefs held in other museums (Marangou, 1976, pp. 57–58), are

clearly related to the Ptolemaic queens shown moulded on earthenware *oinochoai* from the 3rd or late 2nd century BC, produced mainly in Alexandria (Thompson, 1973, pp. 24–34).

Aphrodite is often represented according the Anadyomene type or the pudica type, but there are only three examples (fig. 5a) showing the goddess holding a shell in front of her bosom—an attribute alluding to her birth. This recurring pose, characterised by a twisting movement of the upper torso, is undoubtedly inspired by a specific model. It differs from that of the goddess holding the shell in front of the lower part of her bosom, known from Egyptian terracottas from the Roman period and a relief held in the Benaki Museum (Marangou, 1976, p. 112, No. 138, pl. 37a). More than sixty reliefs in the Rodin Museum depict marine divinities. These Nereids are swimming or escorting various sea monsters with mottled

skins, often holding their mantles that blow in the wind. Holding crowns or baskets, they are also accompanied by busts of Tritons, their foreheads adorned with antennae-like shapes.

The *Erotes* often populate vine tendrils or are shown carrying a basket made of wickerwork (fig. 5b). The motif of *Eros* with a heavy basket of fruit above his head is sometimes repeated alongside figures of Aphrodite (O'Connell, 2014, p. 444, fig. 15, p. 463; Platz-Horster, 2018, pp. 99–100, 242). Daphne turning into a laurel tree to escape Apollo's advances is a little-illustrated theme (Rodin Museum, inv. Co. 2198), perhaps inspired by textiles from Late Antiquity, such as the Sabine Shawl from Antinoe or other textiles held in the Louvre Museum (inv. E 28091, AF 6066). The winged cupids symmetrically holding a laurel crown are a common pattern in funerary art and appear also on the face of an ivory comb



Fig. 5 – a) Bone reliefs with Aphrodite holding a shell in front of her breasts, Alexandria, Graeco-Roman Museum, inv. 12361 (Bonacasa-Carra, 2012, p. 43, fig. 18), Eton College Museum, inv. ECM.614-2010, Rodin Museum, inv. Co. 2185 (agence photographique du musée Rodin – J. Manoukian); **b)** Bone carvings featuring Aphrodite and Eros carrying a basket of fruit, Rodin Museum, inv. Co. 2164-2254-2265 (agence photographique du musée Rodin – J. Manoukian), relief formerly in the Berlin Museum (Platz-Horster, 2018, p. 242), Brussels, Royal Museums of Art and History, inv. E.5325 (O'Connell, 2014, p. 444, fig. 115); **c)** Large relief featuring a Dionysian procession from the Acropolis of Perge (Eschbach, 2014, p. 77, fig. 2), Rodin Museum, inv. Co. 2185 (photos agence photographique du musée Rodin – J. Manoukian).

Fig. 5 – a) reliefs en os avec Aphrodite tenant une coquille devant son buste, Alexandrie, musée gréco-romain, inv. 12361 (Bonacasa, 2012, p. 43, fig. 18), Eton College Museum, inv. ECM.614-2010, musée Rodin, inv. Co. 2185 (agence photographique du musée Rodin, J. Manoukian) ; **b)** appliques en os représentant Aphrodite et un Éros portant une corbeille de fruits, musée Rodin, inv. Co. 2164-2254-2265 (agence photographique du musée Rodin, J. Manoukian), relief conservé autrefois au musée de Berlin (Platz, 2018, p. 242), Bruxelles, musées royaux d'Art et d'Histoire, inv. E.5325 (O'Connell, 2014, p. 444, fig. 115) ; **c)** grand relief figurant une procession dionysiaque provenant de l'Acropole de Perge (Eschbach, 2014, p. 77, fig. 2), musée Rodin, inv. Co. 2185 (photos agence photographique du musée Rodin, J. Manoukian).

in the Museo Civico in Brescia, dated to the first half to the fifth century (Achverdjanová and Foletti, 2021, p. 86). These cupids have also been found on several reliefs in the Benaki Museum (Marangou, 1976, pp. 63–64, p. 128, Nos. 228, 232, pl. 69a and 69f), and one relief with slightly curved profile in the Rodin Museum (Delassus, 2020, p. 56, 78).

3.3. Frieze compositions or complex scenes

The narrow width of the long bones meant that craftsmen had to juxtapose carefully sawn bone plaques, fashioned from metapodials to create continuous friezes of figures or larger scenes. The clear delineation of motifs required a great deal of preparatory work (Marangou, 1976, p. 27; Delassus, 2020, pp. 69–70). One relief in the Rodin collection featuring a maenad with her head thrown back is reminiscent of the frieze discovered on the Acropolis at Perge in Turkey, dated to the second half of the fourth century CE (Eschbach, 2014; here fig. 5c). The limbs of the figure were carved onto the next plaque. Sometimes, several plaques were adjusted to recreate a single character. These compositions were probably used as fittings on the walls of chests or cabinets.

CONCLUSION

This abundant and varied carved bone material demonstrates the ability of craftsmen to adapt to the natural morphology of the skeletal element. They selected the bones of large mammals according to the shape of the decorated furniture fittings to be made, but also according to the subjects to be depicted. The use of standardised techniques and the repetition of technical gestures encouraged efficiency, perhaps in response to orders from furniture manufacturers. The observation of the marks left by the tool blades on the finished objects, in relation to the carving waste found at the site of different workshop remains in Alexandria, allows us to reconstruct the successive sequences for the manufacture of bone reliefs. This mass production encouraged repetition of iconographic types that were very popular at the end of Antiquity. However, mass production did not rule out the adoption of more original approaches. This creativity was also expressed in the composition of large friezes, which required more sophisticated design work and real artistic skills.

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NOTE

1. *Rodin and Egyptian Art* website:
<https://egypte.musee-rodin.fr/fr/collections>

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